THE OVERLAPPING ISSUES OF HEALTH AND HOUSING:

A Report on California Statewide Data and Healthy Housing Indicators

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CDPH

CALIFORNIA BREATHING

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A Report on California Statewide Data and Healthy Housing Indicators

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Executive Summary

According to the U.S. Surgeon General's *Call to Action to Promote Healthy Homes*, a healthy home is sited, designed, built, renovated, and maintained in ways that support the health of residents. This concept highlights the complex and overlapping factors that contribute to whether or not a home is safe and healthy.

This report is intended to inform, support, and enhance the efforts of those interested in making housing throughout the state healthier. Government agencies, health advocates, housing advocates, policymakers, researchers, health care and social service providers, property owners, building managers, and many others play important roles in ensuring that safe, healthy, and affordable housing is available for all those living in California.

While experts in the healthy housing field understand a great deal about the overlaps between the condition of housing and the health of occupants, there are very few compilations of state-level data regarding these overlaps. This report presents available statewide data on a broad range of topics within the healthy housing arena, including background descriptive information and 31 indicators.

Some of the most notable findings in this report relate to issues of health disparities, poverty, and inadequate access to healthy housing.

Differences in income, race/ethnicity, age, occupation, and geographic location can impact both the health of individuals and the quality of the housing they can afford. People of color, especially those in lower income brackets, often experience the greatest health disparities. For example, African-Americans have higher rates than Whites of both childhood lead poisoning and asthma, conditions frequently caused or exacerbated by environmental conditions in the home.

Lean economic times create additional health and housing burdens for many residents, be they owners or renters. For example, financial hardship can make it more difficult for residential property owners to maintain or upgrade their properties, increasing the likelihood of deterioration, pest infestation, and other health and safety hazards.

The issues and related findings below summarize some of the housing problems and health consequences discussed in this report.

Issue

Access to safe, healthy, and affordable housing is especially critical for lower-income households.

Finding

Low income residents often pay a high proportion of their incomes to live in substandard conditions. Housing cost burden[a] is associated with living in housing units that either: (1) are overcrowded or (2) have incomplete kitchens or plumbing facilities.

Issue

Lead poisoning can cause developmental and neurological damage in young children.

Finding

Approximately one in six California homes built prior to 1978 (when use of lead in paint was banned) has peeling paint, which can be a significant source of exposure to lead in young children.

a Households that spend more than 30% of their monthly income on housing costs are referred to as "cost burdened."

Issue

Environmental triggers that can exacerbate and possibly cause asthma are often found in homes.

Finding

Among adults with asthma:

- 10% reported seeing or smelling mold.
- 9% reported seeing rodents.
- 4% reported seeing a cockroach.
- 19% reported exposure to at least one of these triggers.

Issue

Older adults are at high risk of hospitalization or death as a result of injuries in the home.

Finding

- Rates of unintentional falls in the home that result in hospitalization or death are higher in adults age 65 and older than any other age group.
- People age 85 and older have the highest rates of falls that lead to an emergency department visit, hospitalization, or death.
- The highest rates of fatal drownings occur among people age 85 and older.
- The highest rates of fatal fire-related injuries also occur among people age 85 or older.

Issue

Young children are at high risk of suffering serious accidental poisonings in the home.

Finding

Rates of accidental poisonings in the home that result in an emergency department visit are highest among children ages 0–4.

Issue

The Federal Emergency Management Agency (FEMA) recommends that households have a minimum of three days of emergency supplies available in case of a disaster, such as a major earthquake or weather event.

Finding

21% of Californians report they have fewer than four days of emergency supplies available in case of a disaster.

Issue

Exposure to tobacco smoke has wide ranging adverse health effects, and the home is the primary source of exposure to secondhand smoke. In addition to exposure from smoking within the home, tobacco smoke in multi-unit buildings can drift from one apartment to another through shared ventilation and plumbing systems, open windows, and cracks in walls. Policies limiting such exposure are considered a positive trend by many public health professionals, and progress in this area has been promising.

Finding

- 8.7% of Californians reported that smoking occurs in their home.
- 3% of Californians reported that smoking occurs every day in their home.
- Smoking was reported to be prohibited in 78% of all California homes.
- As of 2011, 10 counties and 44 cities had passed ordinances limiting secondhand smoke exposure in multi-unit housing.

California aspires to have everyone live in a safe, affordable, and healthy home. These data can be used to advance healthy housing programs, interventions, education, and advocacy throughout the state.

Introduction

Purpose of the Report

This report presents statewide housing information in the form of background data and healthy housing indicators. It is intended to inform and support the efforts of government agencies, health advocates, housing advocates, policymakers, health care and social service providers, property owners, building managers, and others involved in the complex field of healthy housing. Compilation of these data represents an important step forward in meeting the primary goals of the CDPH Healthy Housing Program. These goals are to:

I. Develop and maintain a comprehensive, coordinated, and sustainable infrastructure for healthy housing activities in California.

II. Support the establishment, implementation, and enforcement of evidence-based policies to promote healthy housing.

III. Promote healthy housing through key research and its application.

IV. Ensure public awareness of healthy housing issues to create public will and alter behaviors.

While issues surrounding the makeup of a healthy community are not directly addressed in this report, it is important to keep the community context in mind when considering housing issues. One characteristic of a healthy community, as described by CDPH's Healthy Communities Initiative, is the availability of affordable, high quality, socially integrated, and location-efficient housing for residents in all stages of life.[1] High-quality housing generally implies that the dwelling is clean, dry, ventilated, contaminant-free, pest-free, safe, and well-maintained. These are also guiding principles in the identification of healthy housing indicators for this report. Further, socially integrated and location-efficient housing should increase the ease with which residents can obtain and travel to work, both of which impact a person's ability to afford quality housing.

In this report "healthy housing" refers to housing issues with health consequences, as well as health issues with housing solutions.

Housing issues with health consequences can include:

- pest intrusion, which can lead to asthma attacks, bites, or infection;
- mold growth, which can lead to asthma attacks and other respiratory conditions;
- peeling lead-based paint, which can lead to lead poisoning;
- broken structural elements such as handrails on stairwells, which can lead to accidental falls.

Health issues with housing solutions can include:

- childhood lead poisoning, which may be avoided by proper abatement of lead-based paint or replacement of lead pipes;
- asthma attacks, which might be prevented by eliminating excess moisture, cleaning up mold, avoiding use of sprayed pesticides, minimizing use of certain cleaning products, and eliminating pests;
- accidental falls, the risk for which may be reduced by fixing broken handrails, installing grab bars in showers, and repairing other faulty structural elements.

Considerable headway has been made over the years through government regulation and community-based efforts to re-

> "A healthy home is sited, designed, built, renovated, and maintained in ways that support the health of residents."
>
> — The U.S. Surgeon General's Call to Action to Promote Healthy Homes, 2009

duce home-related risks, such as exposure to lead, secondhand smoke, and asbestos. Effective enforcement of housing codes, reasonable accommodation for people with disabilities, and legal assistance for low-income tenants have all played a part in these advances as well.

Still, much can be done to improve the healthfulness of housing in California. This report provides a "snapshot" of the state's status with regard to some key housing issues. The data presented here are not meant to answer all concerns for all audiences. They are meant to provide information that can be used by diverse stakeholders to encourage additional data-gathering or enhance efforts to improve health and housing. Thus, these data serve as a starting point for discussions on various housing topics, provide baseline healthy housing data that can be tracked over time, and give interested parties reliable information when developing healthy housing programs. These data can also serve as a point of comparison for others interested in calculating similar healthy housing indicators for local areas in California, or for other states.

What is Healthy Housing?

According to the U.S. Surgeon General's *Call to Action to Promote Healthy Homes*, a healthy home is sited, designed, built, renovated, and maintained in ways that support the health of residents.[2] This definition guided the choice of indicators for this report. In addition, information on some local policies and individual occupant activities were incorporated into this report (see **Appendix III**). Additionally, the National Center for Healthy Housing (NCHH) developed Seven Principles of Healthy Housing that can help residents take actions to ensure a healthy physical environment in their home.[3] They are to keep the home dry, clean, ventilated, pest-free, contaminant-free, safe, and well-maintained. For this report, another principle was added to NCHH's list of seven, which is to keep the house "prepared" (see **Appendix III**). This refers to emergency preparedness. Many parts of the State are prone to earthquakes, wildfires, and flooding, all of which can pose serious health risks in the home. Preventive measures can keep residents safer if and when these types of events occur.

What is a Healthy Housing Indicator?

The development of social, environmental, and community health indicators has a rich history and many researchers have proposed definitions for the term "indicator." In general, an indicator is defined as an event or characteristic (numerator) occurring in a population (denominator) over a specified period of time. The indicator can usually be further stratified by some other characteristic in the population (for example, rates of fatal falls in the home can be stratified by age). In this report, a healthy housing indicator is defined as a quantitative measure that indicates the general conditions and/or status of housing in California as it relates to residents' health. The denominator is either some group of people (such as those with asthma, or those in a certain age group), or some characteristic subset of California's housing stock (such as age of housing or type of building). Example indicators are people with asthma (denominator) who have been exposed to mold or secondhand smoke in their home (numerator), or housing units that are rented (denominator) and also lack complete plumbing (numerator). Although these indicators sometimes simplify complex information, they are important tools for tracking progress in the arena of healthy housing.

Indicator Identification and Selection Process

Indicator selection began with an internal workgroup to identify which healthy housing issues would be desirable to track. Workgroup members included experts on asthma, lead poisoning, injury prevention, indoor air quality, outdoor environments, the built environment, and other relevant fields. Workgroup members organized potential healthy housing issues into categories based upon the Surgeon General's framework for healthy housing. They then identified indicators and relevant data sources that might be used to track each healthy housing issue.

Next, the workgroup evaluated all of the potential indicators for inclusion in this report using the following criteria: (1) data are collected using scientifically acceptable methodology; (2) data are available at a statewide level; (3) ongoing data collection is likely (for purposes of trend analysis); (4) data are readily available at no extra cost; (5) indicators can be calculated without an unreasonable amount of additional time and/or resources; (6) indicators closely track the identified healthy housing issues (i.e., the indicator is sensitive to true changes in the housing condition being measured); and (7) indicators specifically reflect the conditions of the housing unit as it relates to health.

A three-tier classification scheme for these indicators was developed. This classification scheme was based on a system devised by the California Office of Environmental Health Hazard Assessment.[4] Details of this classification scheme can be seen in Table 1.

The indicators presented in this report span a wide range of healthy housing topics, from lead poisoning to secondhand smoke to unintentional injury. Table 1 describes the three types of indicators presented. Most of the indicators in this report fall into the Type I and Type II categories. A brief discussion of some Type III Indicators is provided as well. Some background data that describe California's housing stock are also presented to provide a context for understanding other indicators.

TABLE 1. Classification of indicators based on data availability, feasibility, and representativeness

Type I	Indicator meets all of the criteria. Adequate data are available and can be used to support the development of the indicator. These data are generated by ongoing, systematic monitoring or data collection efforts, can be analyzed without unreasonable additional resources, and provide information that is generalizable to the population as a whole.
Type II	Indicator meets most but not all of the criteria. Full or partial data generated by ongoing, systematic monitoring or data collection are available and can be analyzed without unreasonable additional resources; however, either the indicators do not ideally track the identified issue or the method of data collection is such that the indicator results may not be generalizable to the population as a whole.
Type III	Indicator not calculated because no ongoing monitoring or data collection is in place to provide data, or data are available but require unreasonable additional resources for analysis. These indicators are conceptual or have not been developed beyond one-time studies.

Data Limitations, Gaps, and Opportunities

Multiple healthy housing indicators compiled in a single report afford diverse stakeholders a broader view of healthy housing issues statewide. Nonetheless, the data provided in this report have inherent limitations. For instance, it is not possible with these data to establish a direct relationship between a particular indicator and the health status or housing situation of an individual, family, residence, or local community.

Much data that could be useful to investigators are either not currently available at a statewide level, or are not updated on a regular basis. For example, the American Housing Survey (AHS) gathers data on many relevant housing characteristics in specific U.S. metropolitan areas over a multi-year period. These data include measures of inadequate housing, such as lack of complete plumbing facilities, unconcealed wiring, water leaks, peeling paint or plaster, and sighting of rodents. These data are not included in this report because they are geographically limited and infrequently updated.

In another example, data concerning the proportion of California housing units near busy roadways are not currently updated and analyzed on a regular basis, and significant resources would be required to do so. Such data would be useful for planners and state regulatory agencies, but are not presented in this report.

Also of concern is California's regional diversity. For example, there is often a lack of adequate farmworker housing in agricultural areas. In poorer counties, cities, or neighborhoods, new development can be difficult to fund. Access to services that might improve housing conditions can be particularly problematic in sparsely populated areas. For instance, access to potable water can be an issue in areas dependent on septic systems and wells. A breakdown of housing characteristics by urban, suburban, rural, and agricultural areas would be useful. However, most of the indicators presented in this report cannot be calculated at a local level.

Importantly, as is the case with many other health issues, the burdens of unhealthy housing are not borne equally across all groups. For each indicator presented in this report, there may be significant disparities by income, race/ethnicity, age, geography, or other socio-demographic characteristics. The large number of indicators presented in this report precludes presenting each indicator by all of these characteristics. Instead, **Appendix II** details each data source used, including a list of possible covariates that can be accessed for each indicator in that data source. People with additional interests can use these covariates to further investigate disparities in health and housing.

Finally, this report presents a "snapshot in time" of California health and housing data. That is, data are only presented for the most recent available year or group of years. Data for previous years are not shown and retrospective trends are not presented. Trends in the healthfulness of housing are likely to be affected by a variety of interacting factors spanning numerous disciplines. Trends may be influenced by changes in behavioral practices, policy, building standards, or educational interventions. For example, trends in fire-related injuries in the home may reflect changes in smoking patterns, use of flame retardants in furniture, or building materials used in construction. While retrospective trend data for several indicators were available when compiling this report, there is substantial variation across indicators in the years for which data are available, and this is a main reason that trend data were not presented. Additionally, a careful analysis of the interplay between the multiple factors driving any particular trend is beyond the scope of this report. However, examining trends (both retrospective and forward-looking) would likely be informative. The data presented here are intended to be a starting point for future data collection so that trends and progress might be tracked over time. Funders, researchers, government agencies, and other stakeholders are encouraged to use these data as inspiration to initiate their own investigations. When collected in an accurate and reliable manner, such information can be used to inform better housing and health policy, improve housing maintenance practices, and ultimately lead to healthier housing for those living in California.

Key Findings

Some of the most notable findings in this report relate to issues of poverty, health disparities, and inadequate access to healthy housing. Factors that contribute to unhealthy housing overlap in critical ways.

Almost all housing units that are overcrowded, have incomplete plumbing facilities, or have incomplete kitchens also pose a housing cost burden[b] for their residents (Source: ACS/CHAS[c]). This means that these residents are paying a significant portion of their modest incomes to live in substandard housing conditions.

Children living below the poverty level may be more likely to live in older, deteriorating housing that can expose them to both lead poisoning hazards and asthma triggers. In many cases these illnesses are caused or exacerbated by environmental conditions in the home that could be prevented or eliminated. Lead was banned from use in paint in 1978. An estimated 54% of California housing units were built before 1978. Of these, in 2009 an estimated 18% had peeling paint that could expose residents to lead hazards (Source: CABRFSS). Peeling paint results in lead-laden paint chips and dust that are easily ingested by young children. These hazards can be eliminated or reduced when lead-safe work practices are used for repair and repainting of the property. Significant progress has been made in this area. However, these data indicate what those in the field of lead poisoning control already know: much more can be done to reduce such exposures.

A number of common asthma triggers can be found in homes as well. Among California adults with asthma in 2009, 10% reported seeing or smelling mold, 9% reported seeing rodents, and 4% reported seeing a cockroach in their home. Nineteen percent of California adults with asthma reported exposure to at least one of these known asthma triggers (Source: ACBS). In most cases, exposure to these asthma triggers can be prevented or eliminated through appropriate property maintenance and repair on the part of owners, and regular cleaning and upkeep on the part of occupants, whether they are owners or renters.

Some of the most notable findings in this report relate to issues of poverty, health disparities, and inadequate access to affordable healthy housing.

Tobacco smoke, including secondhand smoke, is a significant cause of asthma and other respiratory illness. Substantial progress has been made to reduce people's exposure to secondhand smoke in the home. However, in 2009 8.7% of adults in California reported that smoking does occur in their home (Source: CABRFSS).

The Federal Emergency Management Agency (FEMA) recommends that households have a minimum of three days of food and supplies (preferably a two-week supply) available in order to be prepared for potential disasters. In 2009, 21% of Californians reported they have fewer than four days of emergency supplies available in case of such a disaster (Source: CHIS).

Older adults are particularly vulnerable to serious consequences from injuries in the home. For instance, in 2009 rates of unintentional falls in the home that resulted in hospitalization or death were highest among adults age 65 and older (Source: OSHPD). Some of these injuries can be prevented through measures such as installing grab bars in showers, hand railings on stairs, and less slippery surfaces on floors.

Young children are more prone to certain types of accidents as well. In 2009, rates of accidental poisonings in the home that resulted in an emergency room visit were highest among children ages 0–4 (Source: OSHPD). Many of these incidents can be prevented with elimination or proper storage of toxic substances.

b Households that spend more than 30% of their monthly income on housing costs are referred to as "cost burdened."

c See **Acronyms** at the end of the report for complete data source names.

Section 1: Background Data on Housing in California

The descriptive data in this section provide context for examining issues of housing and health in California. In particular, these data relate to physical characteristics, occupancy, housing tenure (the term used for renting vs. owning), and the cost burden of the housing (i.e., the percentage of household income spent on housing costs). All of these background data are derived from the American Community Survey (ACS), which is an annual survey of residents in housing units across the country. Some ACS data are further processed into Comprehensive Housing Affordability Strategy (CHAS) data. These data sources are discussed in more detail in Appendix II.

Physical Housing Characteristics

The sheer number of housing units in California provides insight to the scope of any healthy housing work. In 2009, there were an estimated 13,434,537 housing units in the state (Table 2). The year in which housing was built can sometimes affect health outcomes for residents. For example, lead paint regulations were put into place in 1978.[5] Housing built prior to 1978 is more likely to contain lead-based paint than housing built in or after 1978. Deteriorated lead-based paint can pose a serious health risk, especially for young children. The number of units per structure can also sometimes affect health outcomes. For example, housing units with shared walls may be disproportionately affected by secondhand smoke drifting from apartments of neighbors, pest infestation coming from other units, or moisture intrusion from leaks in other parts of the building. Both occupant activities and building management practices can play a role in the likelihood of inter-unit problems occurring, and these vary widely.

The majority of housing units in California are in structures built before 1980 (63.1%). Most are single-family homes, row houses, or duplexes (67.7%). Housing in buildings with three or more units represents 28.2% of all housing. Single-family homes represent 58.0% of all housing, while units in buildings with 20 or more total units represent 11.1% of all housing (Table 2).

TABLE 2. Year of construction and units per structure of housing units in CA, 2009

Housing Characteristics	Number	%
Total	13,434,537	
Year housing structure built		
≤1949	2,202,686	16.4
1950–1979	6,276,012	46.7
1980–2004	4,422,721	32.9
≥2005	533,118	4.0
Number of Units per Structure		
1, detached	7,794,203	58.0
1, attached OR 2 units	1,302,995	9.7
3 or 4	756,255	5.6
5 to 9	823,752	6.1
10 to 19	729,288	5.4
20 or more	1,493,278	11.1
Mobile home, boat, RV, other	534,766	4.0

Data source: ACS 2009

Occupancy Characteristics

Not all housing units in California are occupied, and there are likely differences in the characteristics of occupied vs. vacant housing units. In 2009, there were an estimated 12.2 million occupied housing units in California, representing 90.9% of all housing units in the state (Table 3). The American Community Survey classifies all occupied units as either rented or owned. Whether a resident rents or owns a housing unit can affect the level of control they have over preventing, remediating, or abating health-related housing problems.[6,7] Children are particularly vulnerable to adverse effects from many health-related housing problems, including lead poisoning and drownings. Slightly over half of all occupied units in California are owner-occupied, and just over a third of all occupied units house children under the age of 18 years (Table 3).

TABLE 3. Occupancy characteristics of housing units in CA, 2009

Occupancy Characteristic	Number	%
Occupied housing units	12,214,891	90.9
Occupied units by tenure		
Owner-occupied housing units	6,910,054	56.6
Renter-occupied housing units	5,304,837	43.4
Occupied units with children	4,566,138	37.4

Data source: ACS 2009

Housing Type by Tenure (Rent vs. Own)

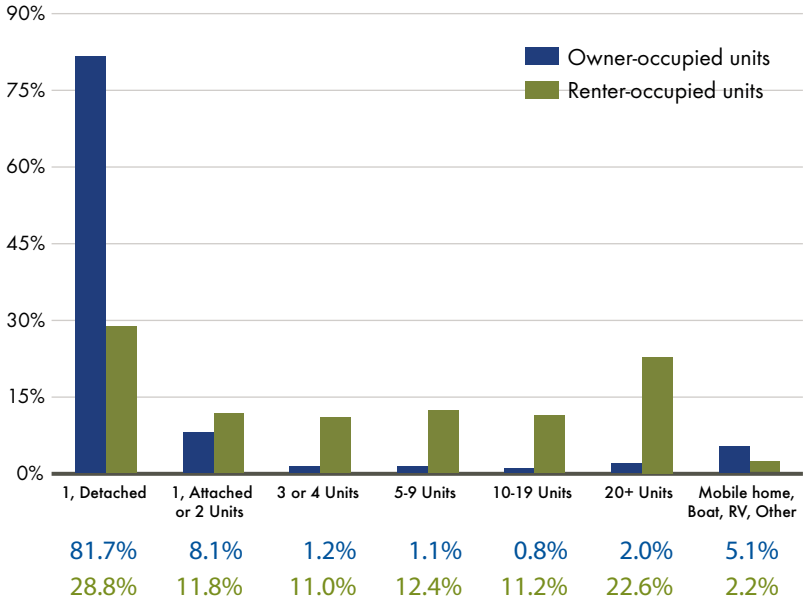
As previously described, whether or not a housing unit shares structural elements with other units in the same building can impact health outcomes for residents. Health outcomes can also be affected by whether a housing unit is rented or owned (tenure). The combined effects of these two housing characteristics (housing type and tenure) may factor into a resident's health status in some circumstances. Figure 1 shows substantial differences in the number of units in a building by tenure. The vast majority of owner-occupied homes are in single-unit structures (81.7%), while the number of units is much more variable for renter-occupied housing. Mobile homes, boats, RVs, and other housing types account for a higher percentage of owner-occupied units (5.1%) than renter-occupied units (2.2%).

Housing Cost Burden

Housing-related costs often account for a large proportion of residents' income, which may be especially burdensome for those with lower incomes.

The U.S. Department of Housing and Urban Development (HUD) describes housing affordability using the term "housing cost burden."[8] Households that spend more than 30% of their

FIGURE 1. Number of units per structure, by tenure, 2009



Data source: ACS 2009

Housing cost burden is a significant problem among lower income households in California, where 73% of lower income renters and 64% of lower income owners are cost burdened.

ACS/CHAS 2006-2008

monthly income on housing costs are referred to as "cost burdened." Households that spend more than 50% of their monthly income on housing costs are referred to as "severely cost burdened." For renters, housing costs consist of monthly rent, as well as any utilities and fuel costs for which the renter is responsible. For owners, housing costs include mortgage payments, real estate taxes, homeowners insurance, utilities, fuel costs, and condominium or homeowner association fees.[9,10]

While housing cost burden is calculable for households of all income levels, its relationship to affordability is most relevant for lower income households. Lower income households are defined here as those within 0-80% of the median family income in the area in which they live (this median family income is officially referred to as the HUD Area Median Family Income, or HAMFI).

In California, 41.8% of all housing units are occupied by lower income households (Table 4). Over a quarter of owners are lower income, and well over half of all renters are lower income.

Housing cost burden is a significant problem among lower income households. In California, 73% of lower income renters and 64% of lower income owners are cost burdened. Moreover, 41% of lower income renters and 44% of lower income owners are severely cost burdened (Figure 2).

While there are some disparities in housing cost burden for lower income renters compared to lower income owners (Figure 2), there is a substantial disparity when comparing hous-

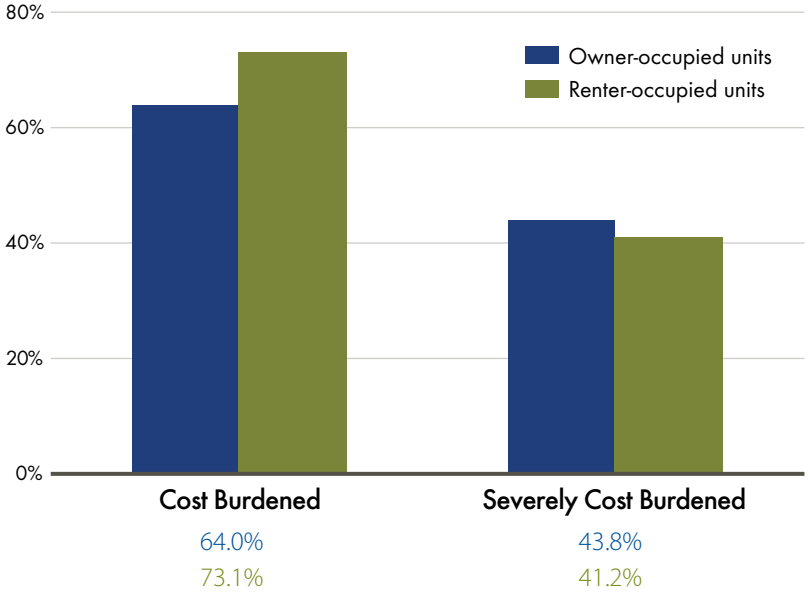
Table 4. Lower income* households among occupied housing units, by tenure, 2006–2008

Lower Income Households	Number	%
Among all occupied housing units	5,092,725	41.8
Among owner-occupied housing units	2,005,955	28.5
Among renter-occupied housing units	3,086,770	60.1

* Lower income households are defined as those with incomes 0-80% of the median family income (HAMFI) in the area in which they live.

Data source: ACS/CHAS 2006-2008

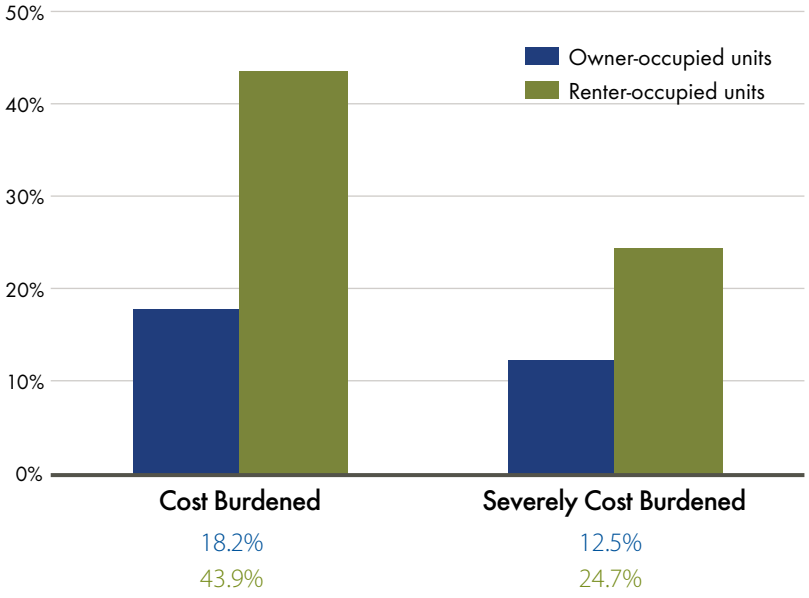
FIGURE 2. Housing cost burden among lower income* households, by tenure, 2006–2008



* Lower income households are defined as those with incomes 0-80% of the median family income (HAMFI) in the area in which they live.

Data source: ACS/CHAS 2006-2008

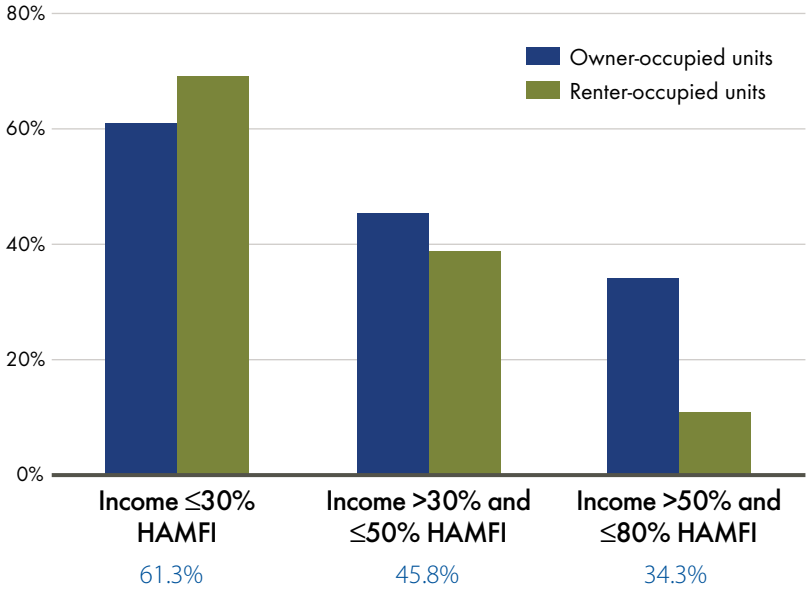
FIGURE 3. Lower income* households with housing cost burden among all households, by tenure, 2006–2008



*Lower income households are defined as those with incomes 0-80% of the median family income (HAMFI) in the area in which they live.

Data source: ACS/CHAS 2006-2008

FIGURE 4. Severe cost burden among lower income* households, by tenure and household income level, 2006–2008



*Lower income households are defined as those with incomes 0-80% of the median family income (HAMFI) in the area in which they live.

Data source: ACS/CHAS 2006-2008

ing cost burden for all renters and all owners. As shown in Table 4, the percentage of renters who are lower income (60%) is more than twice the percentage of owners who are lower income (29%). Accordingly, the percentage of renters who are both lower income and cost burdened (44%) is also more than twice the percentage of owners who are both lower income and cost burdened (18%) (Figure 3). The same holds true for severe cost burden, with 25% of all renters in the state and 13% of all owners in the state being both lower income and severely housing cost burdened.

Because the measure of cost burden includes household income in its calculation (as its denominator), the percentage of housing units that are severely cost burdened would be expected to decrease as household income increases. While this is the case for both lower income renters and owners, the rate at which this decrease occurs differs for the two groups. As shown in Figure 4, the decline in cost burden associated with increasing income is much steeper for renters (green bars) than for owners (blue bars).

Extremely low-income renters (≤30% HAMFI) are also more likely to suffer from a severe housing cost burden (69%) than both extremely low-income owners (61%) and renters in a somewhat higher income category (39%, for >30% and ≤50% HAMFI). Overall, there is less variability in the percentage of lower income owners suffering severe housing cost burden compared to lower income renters.

Section 2: Type I Indicators

Plumbing and Kitchen Facilities

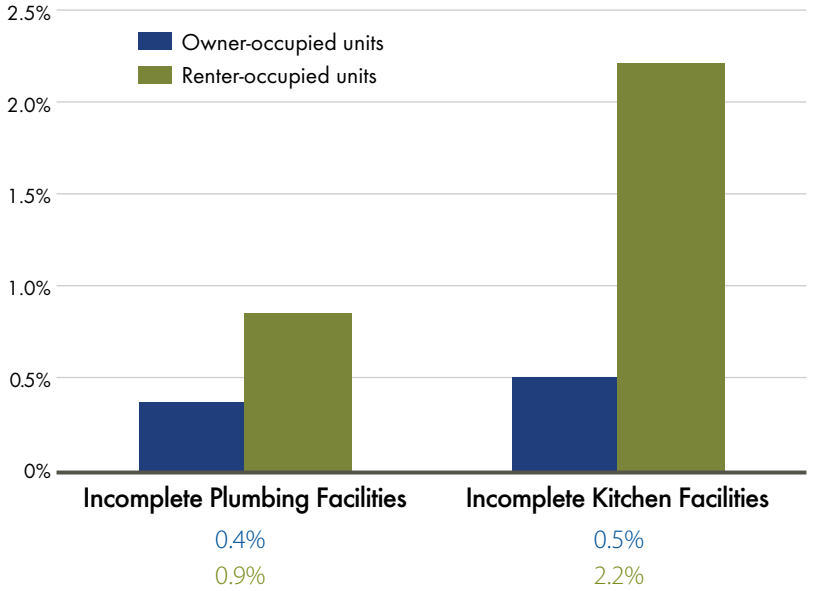
One of the criteria used by HUD to identify inadequate housing is the lack of complete plumbing or kitchen facilities.[11] Inadequate plumbing and kitchen facilities have also been linked to poor health outcomes.[12] Complete plumbing facilities are defined as including hot and cold piped water, a flush toilet, and a bathtub or shower. Complete kitchen facilities are defined as including a sink with piped water, a range or cook top, and a refrigerator. All bathroom fixtures and kitchen facilities must be located inside the unit. However, all bathroom fixtures do not need to be in the same room, nor do all kitchen facilities.[13] The American Community Survey (ACS) collects data on complete plumbing and kitchen facilities in California.[d,14,15]

In 2009, 0.6% of all occupied housing units lacked complete plumbing facilities and 1.2% of all occupied housing units lacked complete kitchen facilities.

ACS 2009

In 2009, 0.6% of all occupied housing units lacked complete plumbing facilities and 1.2% of all occupied housing units lacked complete kitchen facilities. Renters are more likely to live in units lacking complete plumbing or kitchen facilities than owners (Figure 5). This is especially true for kitchen facilities, where renters are over four times more likely to live without complete kitchen facilities than owners.

FIGURE 5. Incomplete plumbing and kitchen facilities in occupied housing units, by tenure, 2009



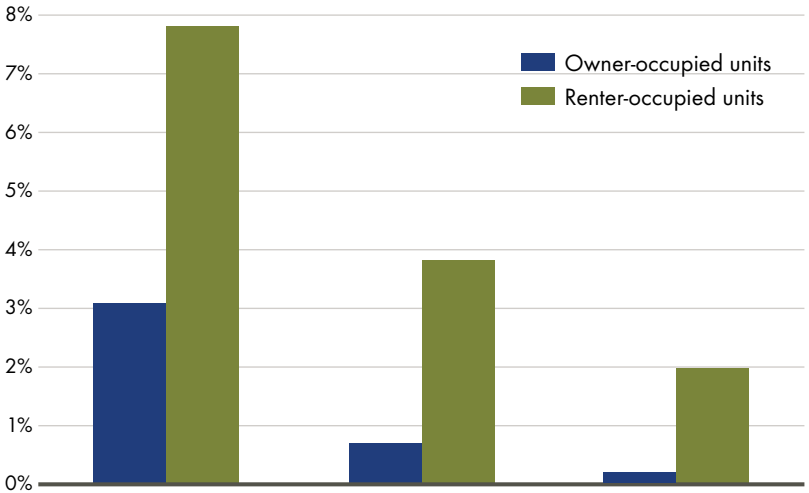
Data source: ACS 2009

Overcrowding

Overcrowded housing conditions have been associated with adverse physical and mental health outcomes for both children and adults.[16] It can be complicated to measure crowding, but the number of occupants per habitable room is often used as a standard. Overcrowded housing is defined as having more than one person per habitable room (not including closets or bathrooms). Severe overcrowding is defined as housing units with more than 1.5 persons per habitable room.[17]

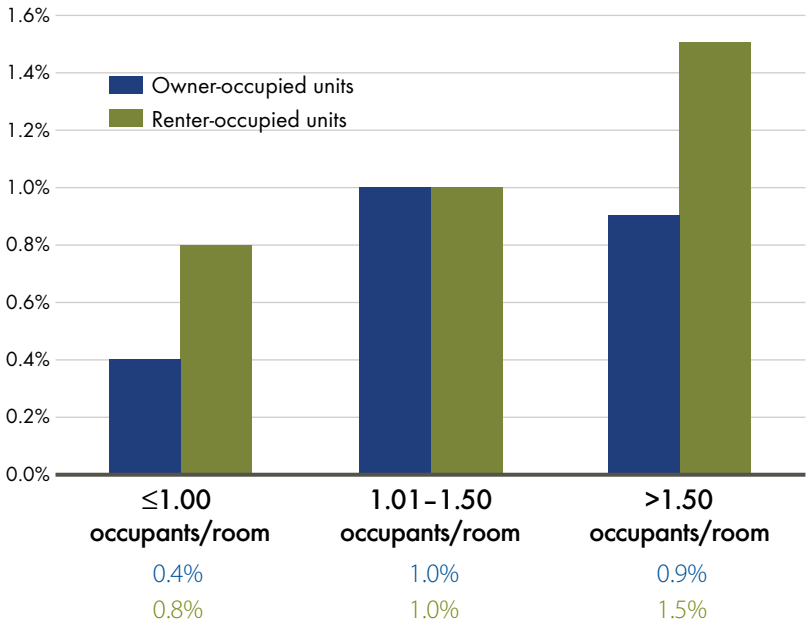
d It is not unusual in many California cities to find residents living either permanently or transiently in single room occupancy (SRO) housing or rooms lacking private bathrooms and/or kitchens. In most cases, SRO units meet the U.S. Census definition of a housing unit. As such, they are included in all ACS data presented in this report. Although SROs may lack complete plumbing or kitchen facilities, they are not necessarily inadequate based on this criteria. It is not currently possible to identify what proportion of units without complete plumbing or kitchen facilities are SROs.

FIGURE 6. Levels of overcrowding, by tenure, 2009



Data source: ACS 2009

FIGURE 7. Housing units with incomplete plumbing facilities, by crowding and tenure, 2009



Data source: ACS 2009

Overcrowding is much more common in renter-occupied units than in owner-occupied units (Figure 6). This disparity increases as units get more and more crowded: the renter-to-owner ratio of overcrowding prevalence approximately doubles with each increase of 0.5 occupants per room.

Overcrowding is associated with adverse health outcomes,[18] and health hazards of overcrowding can be exacerbated by inadequate sanitary facilities. Figure 7 shows data on housing units that lack complete plumbing facilities by both level of crowding and tenure. The data in this figure show that severely overcrowded, renter-occupied units are more likely to lack complete plumbing facilities compared to non-crowded, owner-occupied units.

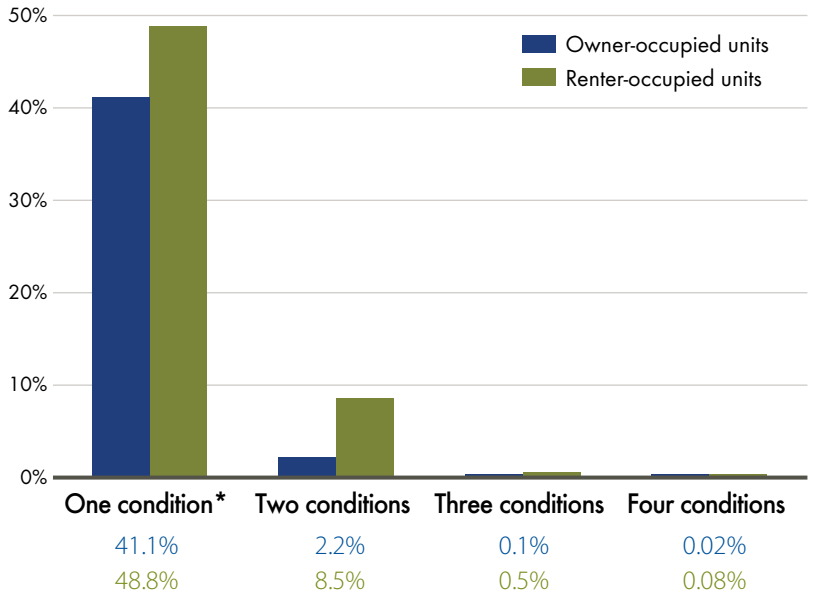
Concurrent Adverse Housing Conditions and Housing Cost Burden

Some residents live in units characterized by more than one of the following: (1) incomplete plumbing facilities; (2) incomplete kitchen facilities; (3) overcrowding (>1 occupant per room); and (4) housing cost burden (≥30% of monthly income is spent on housing).[e]

Figure 8 shows that renters are more likely to experience concurrent adverse housing conditions and housing cost burden than owners. Renters are about four times more likely than owners to experience two or more of these factors. Furthermore, there is a housing cost burden for both renters and owners in almost all housing units that are either overcrowd-

e Because of data limitations, housing cost burden is calculated for all California households in this section regardless of income level, while in previous sections it was calculated only for lower income households.

FIGURE 8. Concurrent adverse housing conditions and housing cost burden, by tenure, 2009



*In Figure 8, "condition" includes incomplete plumbing facilities, incomplete kitchen facilities, overcrowding, and housing cost burden.

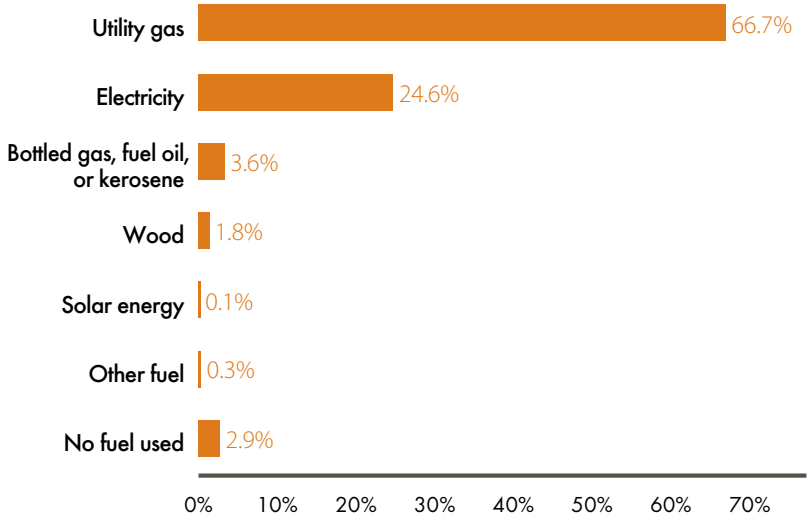
Data source: ACS 2009

ed, have incomplete plumbing facilities, or have incomplete kitchen facilities (data not shown). In other words, these residents are paying a significant proportion of modest household incomes in order to live in substandard conditions.

Home Heating Method

Adverse respiratory outcomes have been documented from in-home exposure to combusted heating fuels, including natural gas, kerosene, coal, and wood, especially when heating devices are improperly vented.[19] Figure 9 shows that two-thirds of all housing units in California rely on gas for heating, and a small but still important proportion of housing units burn bottled gas, fuel oil, kerosene, or wood for home heating. Nearly 3% of all occupied housing units in California use no heating at all.

FIGURE 9. Heating method for occupied housing units, 2009



Data source: ACS 2009

Lead-based Paint

While the federal government banned lead-based paint in 1978, lead can still be found in the paint of older homes.[20] A 1995 national survey estimated that lead-based paint was present in 76% of housing units built between 1960 and 1979, 92% of housing units built between 1940 and 1959, and 88% of housing units built before 1940.[21] Lead-based paint becomes a major concern when it is chipping or peeling.[22] As shown in Table 5, results from a 2009 telephone survey (the California Behavioral Risk Factor Survey) indicate that an estimated 54% of California housing units were built before 1978[f] and, of those, an estimated 18% have peeling paint. In other words, of all California housing units, an estimated 7.1% were both built before 1978 and have peeling paint.

Improper renovation, repair, or painting of homes containing lead-based paint can create contaminated dust and paint chips, which can be harmful to human health when inhaled

f This estimate differs from results of the American Community Survey, which showed that an estimated 63% of California housing units were built before 1980 (Table 2). Despite the differing years and survey methodology, these figures have similar implications in terms of exposure to lead-based paint.

TABLE 5. Age of home and report of peeling paint, 2009

Age of Home and Report of Peeling Paint	%
All pre-1978 homes	53.6
Pre-1978 homes with peeling paint of all pre-1978 homes	18.0
Pre-1978 homes with peeling paint of all homes in CA	7.1

Data source: CABRFSS 2009

or swallowed.[23] In 1994, a California law went into effect requiring that all lead-related construction tradespeople be certified by the California Department of Public Health (CDPH).[24] Certification helps to ensure that construction activities are performed in a manner that reduces or eliminates existing lead hazards, and avoids creating new ones for occupants or workers.[25] The regulations were updated in 2008 and currently require certification for anyone doing lead hazard evaluations (inspections), lead clearance testing, lead abatement project design, or lead abatement work in residential and public buildings in California.[26] While no data are currently available on the total number of workers involved in these types of activities, it is worthwhile to track the total number of certifications issued to lead-related construction tradespeople. In 2010, a total of 7,857 lead-related construction certifications were issued by CDPH.

> In 2010, a total of 7,857 lead-related construction certifications were issued by CDPH.
>
> CDPH Childhood Lead Poisoning Prevention Branch – Certification Database

In 2008, the federal Environmental Protection Agency (EPA) issued the Renovation, Repair and Painting (RRP) rule. Beginning in April 2010, EPA "requires that firms performing renovation, repair, and painting projects that disturb lead-based paint in homes, child care facilities and preschools built before 1978 be certified by EPA and use certified renovators who are trained by EPA-approved training providers to follow lead-safe work practices."[27] Since the inception of the RRP training program, EPA has tracked the number of certified training providers and the number of firms and individuals who have been trained by RRP standards for each state. As of May 2011, approximately 34 training providers, 9,500 renovator firms, and 52,000 individual renovators in California had been certified by EPA under the RRP rule.

> As of May 2011, approximately 34 training providers, 9,500 renovator firms, and 52,000 individual renovators in California had been certified by EPA under RRP.
>
> Environmental Protection Agency – Renovation, Repair and Painting (RRP) Certification

Smoking and Exposure to Tobacco Smoke in the Home

Over the last 50 years, study after study has consistently demonstrated a wide range of adverse health effects from tobacco smoke. These include, but are not limited to, lung and other types of cancer, cardiovascular and pulmonary diseases, reproductive health issues, and impacts on child development. The Surgeon General has concluded that there is no safe level of exposure to cigarette smoke, either through direct inhalation or by exposure to secondhand smoke (SHS).[28,29]

In the United States, the home is the primary source of exposure to SHS.[30] In addition to exposure from smoking that occurs in the home, SHS can be distributed to other housing units

8.7% of all California households reported that smoking does actually occur inside their home.

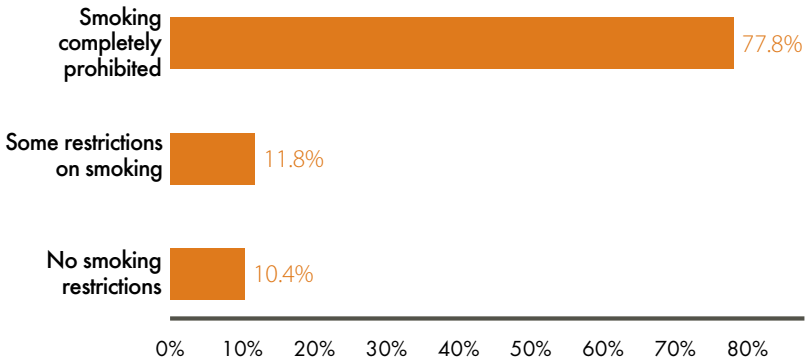
CABRFSS 2009

in the same building through shared heating, ventilation, and air conditioning systems.

Also of importance is "third hand smoke" (THS). This term was developed in recent years to describe residual tobacco toxins that become embedded in fabric and on surfaces. These toxins are then released into the air long after a cigarette has been extinguished.[31] Exposure to THS occurs through the inhalation, ingestion, or skin absorption of toxins from dust, surfaces, fabrics, or fumes.[32] THS remains on surfaces and in fabrics for long periods of time. It can result in exposure to current and future residents, including non-smokers who move into a unit previously occupied by smokers.

Completely eliminating smoking in a home is an important step that residents can take to reduce exposure to tobacco smoke (both SHS and THS). For those living in multi-unit buildings, banning smoking in the home can also reduce exposure to tobacco smoke for those in other units. In California, two data sources examine smoking in the home: the California Behavioral Risk Factor Surveillance System (CABRFSS) and the California Health Interview Survey (CHIS). These sources employ similar data collection methods (see **Appendix II** for technical details), but the wording of questions about smoking in the home differ slightly. Because of this, data from both sources are presented. Results from the two surveys are similar but not identical. Reasons for discrepancies in results likely stem from differences in the way questions were asked, ordering of questions on the surveys, and differences in the ways the surveys were designed and administered.

FIGURE 10. Smoking restrictions in the home, CABRFSS 2009

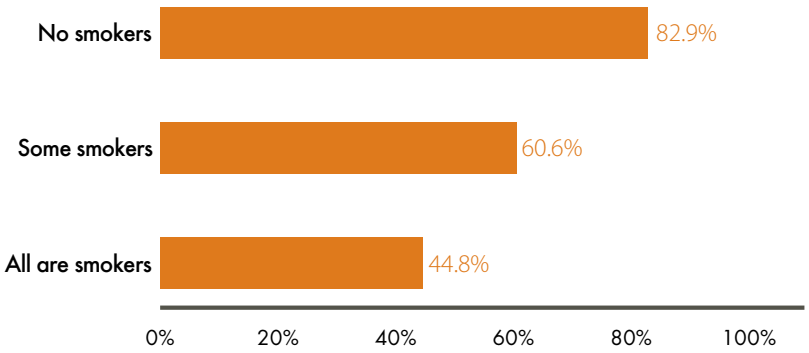


Data source: CABRFSS 2009

In CABRFSS, respondents were asked about the smoking rules or restrictions in their household. Possible responses were: complete prohibition; some restrictions (either a general prohibition with some exceptions or restrictions for some rooms but not others); or no restrictions at all. As shown in Figure 10, in 2009, 78% of Californians reported a complete smoking ban in their home, while 10% reported no restrictions. However, an absence of smoking restrictions does not necessarily mean that smoking occurs in the household. CABRFSS respondents were also asked whether anyone ever smokes inside their home, and 8.7% of all California households reported that smoking does actually occur inside their home.

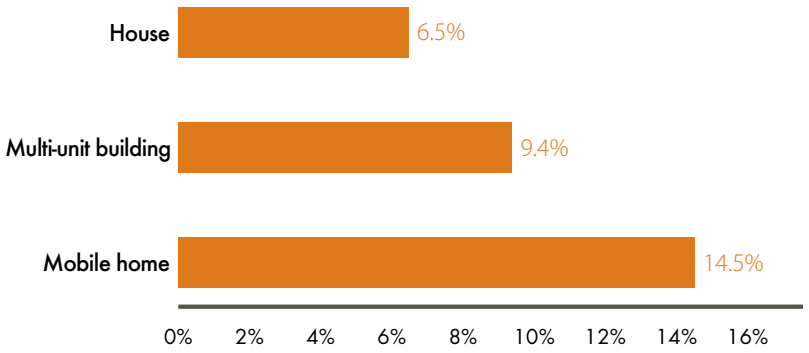
Smoking bans reported in CABRFSS differ depending on the number of smokers and non-smokers in the household. While 78% of all households report a smoking ban, Figure 11 shows that these bans are most common in homes with no smokers, less common in households where only some of the adults are smokers, and least common in homes where all adults are smokers.

FIGURE 11. Households with complete smoking bans, by smoker composition, CABRFSS 2009



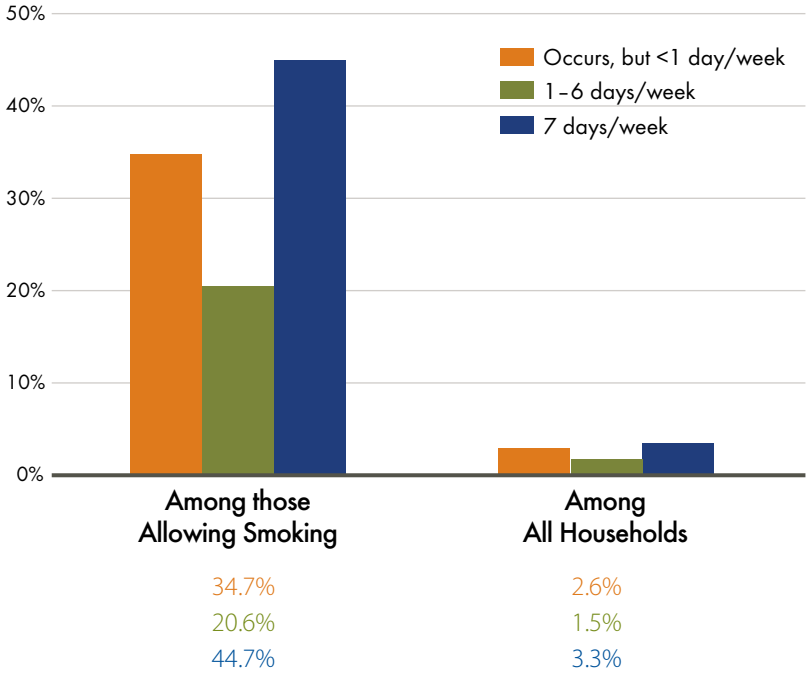
Data source: CABRFSS 2009

FIGURE 12. Homes where smoking is allowed, by housing type, CHIS 2009



Data source: CHIS 2009

FIGURE 13. Average days per week of smoking in the home, by smoking rules, CHIS 2009



Data source: CHIS 2009

In CHIS, respondents were asked about whether smoking was ever allowed in their home. In 2009, 7.5% of people reported that smoking was allowed in their home.[g] CHIS also asks respondents about the number of units in the building in which they live. Figure 12 shows that smoking is allowed most frequently in mobile homes, followed by multi-unit buildings. Smoking is allowed least frequently in single-unit dwellings.

In 2009, 7.5% of people reported that smoking was allowed in their home.

CHIS 2009

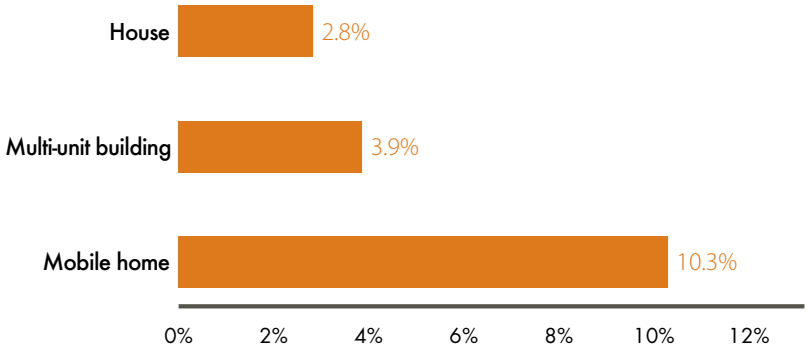
In addition to asking whether smoking is allowed in the home, CHIS also asks how many days per week, on average, smoking actually occurs inside the home. Figure 13 shows that smoking occurs less than one day per week in 35% of the homes where smoking is allowed, but occurs seven days a week in 45% of homes where smoking is allowed. This latter measure means that smoking occurs every day in over 3% of all homes in California.

As of November 2011, ten counties and forty-four cities in California restricted smoking in multi-unit housing. This represents 17.2% of California's 58 counties and 9.1% of the state's 481 incorporated cities.

CTPO Matrix of Smoke-Free Housing Policies

The potential for daily exposure to tobacco smoke in the home varies by housing type. Figure 14 shows that daily indoor smoking occurs in 3% of single-unit houses, 4% of units in multi-unit structures, and 10% of mobile homes.

FIGURE 14. Homes with daily indoor smoking, by housing type, CHIS 2009



Data source: CHIS 2009

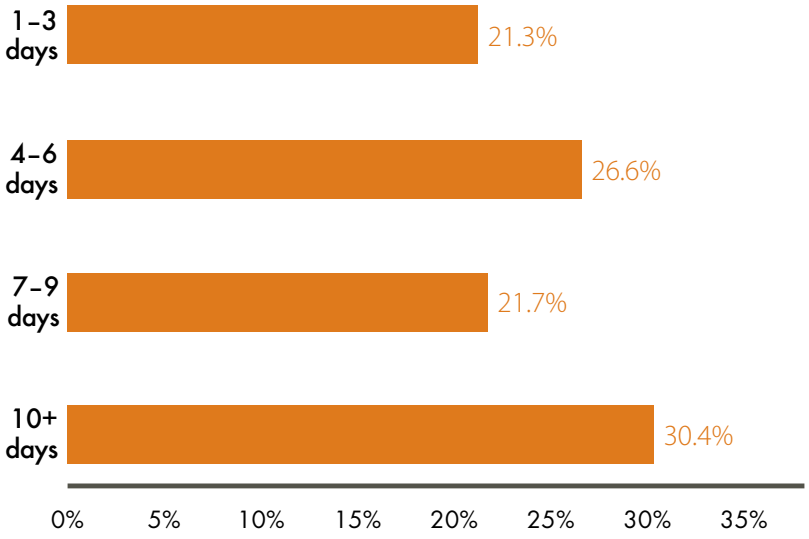
A more systematic way to prevent exposure to tobacco smoke in multi-unit housing structures is through policies that prohibit or limit smoking. Many cities and counties have enacted ordinances that restrict smoking in multi-unit housing structures in some way. As of November 2011, ten counties and forty-four cities in California restricted smoking in multi-unit housing.[h] This represents 17.2% of California's 58 counties and 9.1% of the state's 481 incorporated cities.

Individual property owners implement private policies in some cases as well. In 2011 the Governor signed a bill (SB332) explicitly authorizing landlords of residential buildings to prohibit smoking anywhere within their buildings or premises. The bill went into effect on January 1, 2012.[33,34] There is no

g This is slightly lower than the 10% of people reporting no smoking restrictions from CABRFSS (Figure 10). This discrepancy likely results from difference in question wording, questionnaire design, and overall survey methods.

h The counties and cities with these ordinances are: Alameda (City), Albany, Baldwin Park, Belmont, Burbank, Calabasas, Carpinteria, Compton, Contra Costa County, Dublin, Emeryville, Eureka, Fairfax, Glendale, Kern County, Laguna Woods, Larkspur, Loma Linda, Madera (City), Martinez, Menlo Park, Novato, Oakland, Oxnard, Pasadena, Paso Robles, Pinole, Pleasant Hill, Plumas County, Port Hueneme, Rancho Cordova, Rancho Mirage, Richmond, Rohnert Park, Sacramento (City), Sacramento County, San Bernardino County, San Diego County, San Joaquin County, San Leandro, San Luis Obispo (City), Santa Barbara (City), Santa Barbara County, Santa Clara County, Santa Monica, Sebastopol, Sonoma County, South Pasadena, Temecula, Thousand Oaks, Tiburon, Union City, Winters, and Woodland.

FIGURE 15. Days occupants could stay home after disaster without shopping for more supplies, CHIS 2009



Data source: CHIS 2009

data source that tracks how many property owners have implemented such policies.

Emergency Preparedness

In California, the persistent threat of earthquakes and wildfires elevates the importance of home preparedness. One of the most important indications of emergency preparedness is possessing adequate supplies in one's home to survive in the wake of such a disaster. The Federal Emergency Management Agency (FEMA) recommends storing at least a three-day supply (and preferably a two-week supply) of food and water for all household members.[35] In 2009, CHIS respondents were asked to estimate the number of days they would be able to remain in their home without shopping for any additional supplies in the event of an emergency. Figure 15 shows that 30% of Californians report having greater than nine days of emergency supplies, while 21% report having less than a four-day supply.

30% of Californians report having greater than nine days of emergency supplies. 21% report having less than a four day supply.

CHIS 2009

Section 3: Type II Indicators

In this report, Type II indicators either are not generalizable to the entire population or the underlying data are not considered as reliable as those for Type I indicators. In the section that follows, each indicator is accompanied by an explanation of why it was identified as Type II rather than Type I.

Kitchen and Bathroom Fan Use

The Asthma Call-Back Survey (ACBS) is a follow-up survey conducted by the California Behavioral Risk Factor Surveillance System (CABRFSS). Among other questions, the ACBS asks respondents with asthma about regular use of a fan in the kitchen and bathroom.

Unvented kitchen appliances such as stovetops and ovens can emit harmful levels of indoor air pollutants. These can include carbon monoxide (a chemical asphyxiant), nitrogen dioxide (a respiratory irritant), and particulate matter (which can cause respiratory and systemic inflammation and cardiovascular disease).[36]

Further, the use of kitchen and bathroom exhaust fans can reduce the moisture levels created by cooking, bathing, or showering. Excess moisture can lead to health and safety hazards,[37] including respiratory illness from dampness and mold,[38] lead poisoning from peeling paint, and injury hazards from structural deterioration.[39] In addition, moisture provides hospitable conditions for insects and rodents. It also degrades building materials, which in turn can create entryways for pests.[40,41]

While the ACBS assesses respondents' use of exhaust fans, the survey is administered only to adults who have been diagnosed with asthma. Therefore, indicators calculated from this survey are not generalizable to the entire California population.

TABLE 6. Regular kitchen and bathroom fan use among adults with asthma, 2009

Location and Report of Fan Use	%
Regular kitchen fan use	61.5
Regular bathroom fan use	58.1

Data source: Adult ACBS 2009

Rather, these indicators only apply to the home environments of California adults with asthma. It is impossible to say whether those with asthma would tend to have or use fans differently from the general population. Accordingly, these kitchen and bathroom fan use indicators fall into the Type II category.

In 2009, ACBS respondents were asked whether they regularly used exhaust fans that vent to the outside when cooking in the kitchen or when in the bathroom. As shown in Table 6, 62% reported regular kitchen fan use and 58% reported regular bathroom fan use.

Exposure to Asthma Triggers in the Home

The ACBS also asks respondents whether they have observed mold, cockroaches, or rodents in their home in the past month. Mold is a known trigger and possible cause of asthma, and a cause of other respiratory problems.[42] Cockroaches and rodents shed allergens known to trigger asthma symptoms.[43] The presence of such pests can also encourage the use of pesticides in the home. Many pesticides are associated with a broad range of adverse health outcomes, including neuro-developmental, reproductive, and respiratory conditions.[44,45]

TABLE 7. Adults with asthma reporting mold, cockroaches, or rodents in the home, 2009

Report of Asthma Triggers in the Home	%
Saw or smelled mold	9.8
Saw rodents (mice or rats)	8.8
Saw cockroaches	4.4
Observed at least one of these	19.0

Data source: Adult ACBS 2009

Since the population surveyed in the ACBS is limited to adults who have been diagnosed with asthma, the presence of mold, cockroaches or rodents in the home can only be assessed for this population. Therefore, exposures to these asthma triggers are considered Type II indicators.

As shown in Table 7, 10% of those with asthma reported seeing or smelling mold, 9% reported seeing rodents, 4% reported seeing a cockroach, and 19% reported having observed at least one of these environmental asthma triggers in their home in the preceding 30 days.

Renovation and Repair of Pre-1978 Homes

Lead-based paint is still often found in homes built before the product was banned in 1978.[46,47] Improper renovation, repair, or painting of such homes can create lead contamination in paint dust and chips, and pose a health hazard for residents.[48]

The 2009 CABRFSS telephone survey asked respondents living in homes built prior to 1978 to report any remodeling, repairs, or renovations made to their home during the previous 12 months. The objective of this question was to estimate how many people in California might be at risk for lead-based paint hazards during construction projects.

TABLE 8. Age of home and report of remodel, repair, or renovation the past 12 months, 2009

Age of Home and Report of Repair	%
All pre-1978 homes	53.6
Pre-1978 homes with recent repair of all pre-1978 homes	33.6
Pre-1978 homes with recent repair of all homes in CA	13.3

Data source: CABRFSS 2009

While construction projects in pre-1978 homes have the potential to expose residents to dangerous quantities of lead-based paint, such projects can be carried out in a way that eliminates or greatly reduces these risks. However, the CABRFSS does not ask respondents whether such precautions were taken. Data generated from these questions will most likely overestimate the percentage of respondents exposed to such hazards. Therefore, we have designated these indicators as Type II.

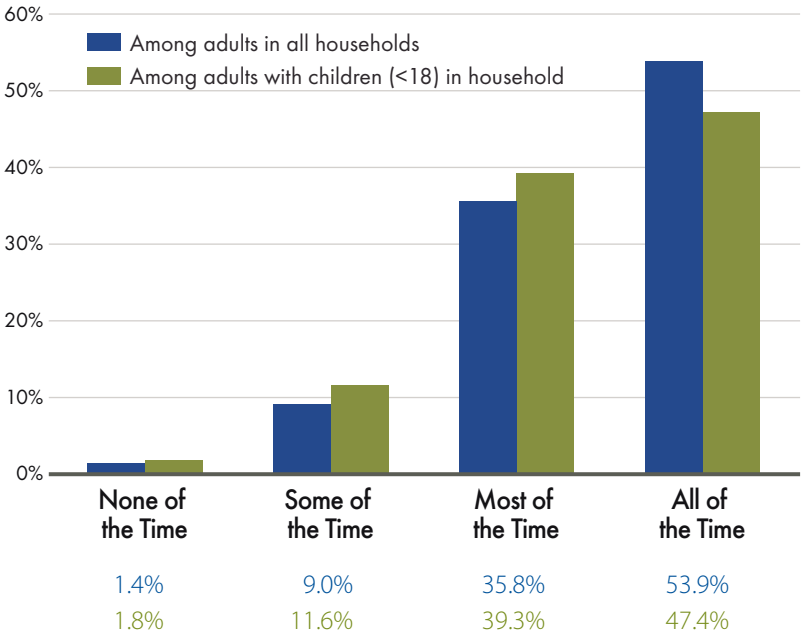
An estimated 54% of California housing units were built before 1978.[i] Of these, an estimated 34% had been recently remodeled, repaired, or renovated (Table 8). These data show that, of all California housing units, an estimated 13% were both built before 1978 and were recently remodeled, repaired, or renovated.

In California, individuals and organizations can request that specific properties be evaluated by a CDPH-certified inspector/assessor for the presence of lead. When such an inspection is performed, a Lead Hazard Evaluation Report is filed with the Childhood Lead Poisoning Prevention Branch at CDPH.[j] This report details whether or not lead hazards were detected. Possible sources of lead hazards include intact or deteriorated lead-based paint, and lead-contaminated dust or soil.

i As explained elsewhere, this estimate differs from the results of the American Community Survey, which showed that an estimated 63% of California housing units were built before 1980 (Table 2). However, overall these results suggest similar implications for lead-related health risks.

j See the CDPH Lead Hazard Evaluation Report (CDPH Form 8552), accessible at: www.cdph.ca.gov/programs/CLPPB/Documents/DPH8552-4.pdf

FIGURE 16. Frequency of feeling safe in one's neighborhood, by household type, 2009



Data source: CHIS 2009

These reports are completed only when someone requests an inspection. Therefore, it is unlikely that these data are representative of all properties in the state with lead hazards. Accordingly, the indicator assessing the proportion of inspected properties with lead hazards is classified as Type II.

From 2006 to 2010, 18,288 properties in California tested positive for some kind of lead hazard. This represents 45.3% of the properties that were inspected (40,389 total properties).

Perceptions of Neighborhood Safety

While other indicators presented in this report are directly related to the structure of or occupant activity in an individual building or housing unit, a measure on perceptions of neighborhood safety is also included. This measure may provide additional insight about the quality and adequacy of housing units in a neighborhood.

People may be less likely to leave windows in their home open when they perceive their neighborhood as unsafe. This can lead to poor air circulation and decreased air quality in the home. Keeping windows closed can also lead to elevated moisture levels and promote the growth of mold when humidity is too high inside the home. As previously discussed, excess moisture can lead to several other health and safety hazards, including pest infestation. Moreover, neighborhoods perceived to have higher crime rates might be used as a proxy measure for neighborhoods with high rates of deferred maintenance on residential properties. Deferred maintenance can lead to substandard housing that poses a threat to the health and safety of residents.

From 2006 to 2010, 18,288 properties in California tested positive for some kind of lead hazard. This represents 45.3% of the properties that were inspected (40,389 total properties).

CDPH Childhood Lead Poisoning Branch – Lead Evaluation and Abatement Database (LEAD)

How well homes are maintained is not always correlated with neighborhood safety. There are likely to be healthy homes in unsafe neighborhoods, as well as unhealthy homes in safe neighborhoods. For these reasons, the indicator on perceptions of neighborhood safety is classified as Type II.

While nearly 90% of California residents say they feel safe in their own neighborhood all or most of the time, 9% say they feel safe only some of the time and about 1.5% say they never feel safe (Figure 16). Adults from households with children

are less likely to report feeling safe all of the time (47%) than adults in the general population (54%).

Reasonable Accommodation and Modification

Under the California Fair Employment and Housing Act,[49] tenants with disabilities are permitted to request, and landlords are required to then provide, certain types of accommodation or modification in order to afford equal opportunity for tenants to use and enjoy a dwelling. Alleged violations of this Act are filed with the California Department of Fair Employment and Housing (DFEH).

Between July 2009 and June 2010, there were 280 complaints filed with DFEH for denied reasonable accommodation or modification.

DFEH – Alleged Acts in Violation of the Fair Employmnet and Housing Act

Data on claims of denied reasonable accommodation or modification can be useful in identifying cases in which the design of the physical housing environment is unfit for the tenants who live in it (e.g., denying a tenant in a wheelchair permission to build a ramp entrance to his or her unit). However, these claims can also relate to non-design issues (e.g., denying an exception to a building's no-pet policy for a visually impaired tenant who requires assistance from a service animal). Because details are not available on the nature of the claims filed, the indicator on reasonable accommodation and modifications is considered Type II.

In the context of this report, the term "reasonable accommodations" refers to accommodations in rules, policies, practices, or services that might be necessary to afford a disabled person equal opportunity to use and enjoy a dwelling. "Reasonable modifications" refer to modifications in the physical environment necessary for the disabled person to fully use and enjoy the premises. Between July 2009 and June 2010, there were 280 complaints filed with DFEH for denied reasonable accommodation or modification.

Unintentional Injuries

Unintentional injuries in the home consist mainly of falls, burns, poisonings, and drownings. The home is the second most common location for fatal unintentional injuries in the United States (following motor vehicles) and a significant location for non-fatal injuries.[50,51] There are many specific characteristics of the home environment that increase the likelihood of an injury, such as poorly maintained steps or stairs, lack of a working carbon monoxide (CO) detector, or water heaters set at too high a temperature.

When possible, data in this section are presented by age, as particular age groups are especially vulnerable to injuries or to more severe consequences from injuries. For example, very young children are more likely to be injured when there are not adequate safety barriers to stairways or on windows. Another example of age-related disparity is that adults over age 65 are more likely to be hospitalized from home injuries than those in other age groups.[52]

Data on unintentional injuries in California come from three sources that represent different levels of injury severity. Emergency Department (ED) and Patient Discharge (hospitalization) data are collected by the Office of Statewide Health Planning and Development (OSHPD) for tracking health care quality and costs at California EDs and hospitals. They include information about the nature and location of any injuries resulting in an ED visit or hospitalization. Death certificate data are collected by CDPH and provide information about the nature and location of all fatal injuries in the state.[k]

ED visit and hospitalization data are not directly comparable with death data because a different coding system is used for

k For hospitalization, ED and mortality data, rates based on fewer than 12 injuries are not calculated due to statistical instability. These cells are marked "-" in Figures 17–33.

the latter.[I] For some causes of injuries, the two coding systems are very similar, and data comparability is good. However, there are also causes of injury used for ED or hospitalization data that are either absent or subtly different for death data. In addition, ED visit and hospitalization data are presented per 100,000 population, while death data are presented per million population. For these reasons, comparisons of cause-specific death data with ED or hospitalization data should be made cautiously.

These data sources provide adequate information to assess the numbers of serious non-fatal and fatal unintentional injuries that occur in the home. However, there is no way to know the proportions of these injuries that are a direct result of problems with the physical environment versus personal circumstances, such as impaired vision or balance. Therefore, measures generated for unintentional injuries in the home will overestimate the number of residents exposed to injury-causing hazardous structural conditions in the home, and indicators on unintentional injuries are classified as Type II.

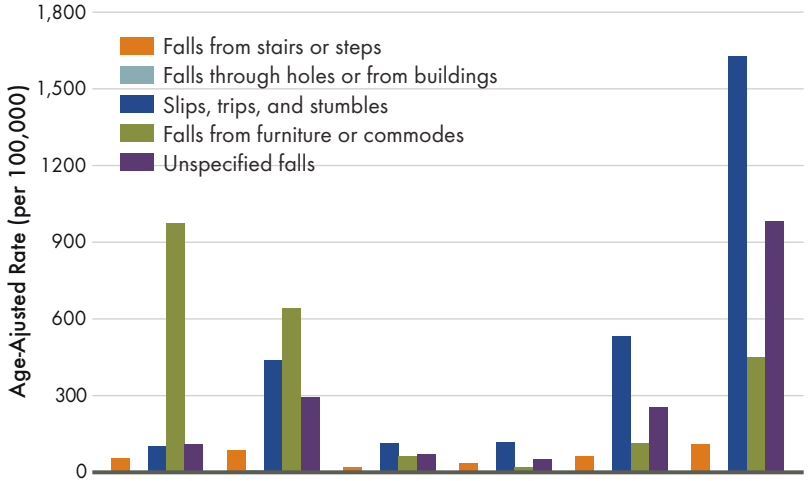
Falls

Falls are by far the most common cause of unintentional home injury, fatal or non-fatal.[53,54] As shown in Figure 17, rates of unintentional falls in the home that result in an ED visit are highest in young children (ages 0-4) and in older adults (ages 65+).

Falls are generally classified as being either from one level to another, or on the same level (such as from slipping, tripping or stumbling). A notable proportion of falls in all age groups appear in the data as "unspecified," which studies have generally shown to be uncaptured slips, trips, and stumbles.[55]

For children, home fall hazards include stairs that are not gated, windows above ground level, and slippery bathroom surfaces. Falls from furniture or the commode are also common among young children.[56]

FIGURE 17. ED visits for falls in the home, age-adjusted rates, by age group, 2009



	<1	1–4	5–17	18–64	65–84	85+
Falls from stairs or steps	57.9	88.1	19.3	36.0	63.0	109.9
Falls through holes or from buildings	–	8.4	3.2	3.6	1.8	–
Slips, trips, and stumbles	105.5	440.4	115.7	120.1	535.2	1,624.0
Falls from furniture or commodes	970.4	640.7	61.0	18.6	113.7	447.6
Unspecified falls	109.6	294.6	71.6	52.7	256.0	982.2

Data source: OSHPD 2009

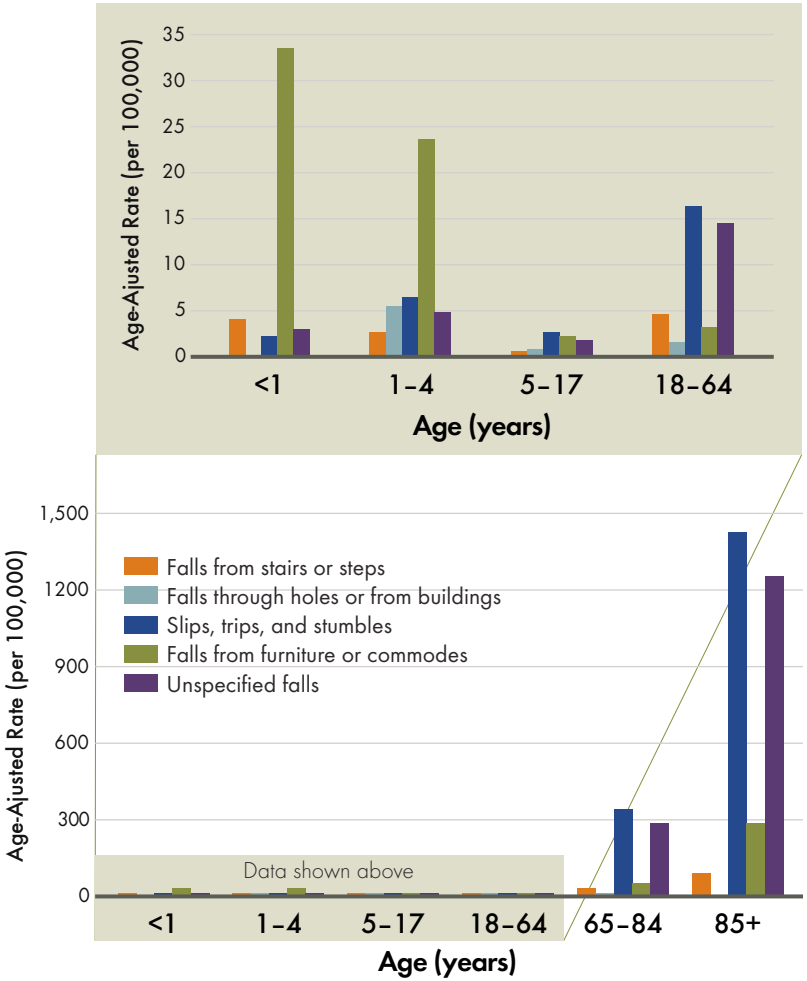
"–" denotes rates that are statistically unstable.

Slips, trips, and stumbles are common among older adults. Home hazards for older adults include lack of handrails and poor lighting in stairways, and lack of grab bars and non-slip surfaces in the bathroom.[57]

Figure 18 indicates that rates of unintentional falls in the home resulting in hospitalization are high in older adults (age 65+), with the highest rates seen among those age 85 and older. Rates of ED visits for falls are also highest among older adults. However, young children also have high rates of ED visits for falls. This

I ICD-9-CM is used for ED visits and hospitalization. ICD-10 is used for deaths. ICD stands for International Classification of Diseases, which is published by the World Health Organization as the international standard diagnostic classification for clinical, epidemiological, and health management purposes.

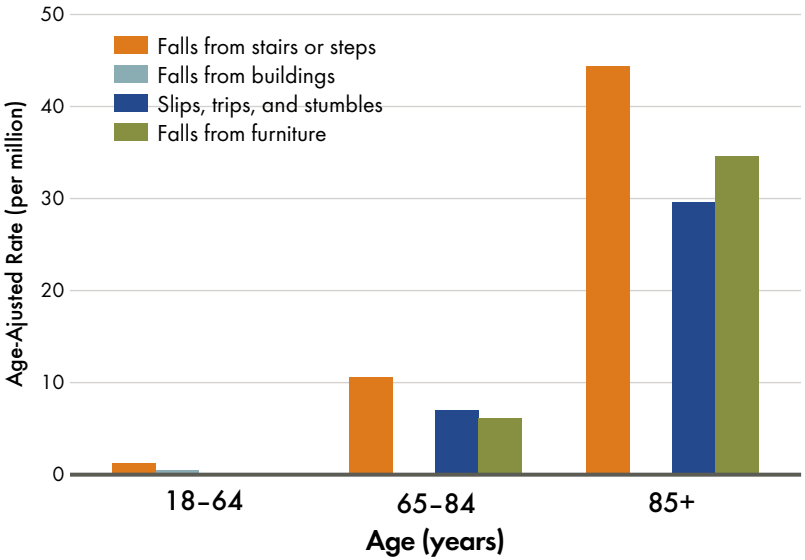
FIGURE 18. Hospitalizations for falls in the home, age-adjusted rates, by age group, 2009



<1	1–4	5–17	18–64	65–84	85+
4.1	2.6	0.6	4.6	37.8	97.6
–	5.4	0.8	1.4	1.7	–
2.1	6.4	2.6	16.4	337.9	1,437.4
33.6	23.7	2.3	3.0	59.3	274.4
2.9	4.7	1.8	14.5	279.1	1,262.5

Data source: OSHPD 2009
"–" denotes rates that are statistically unstable.

FIGURE 19. Deaths from falls in the home, age-adjusted rates, by age group, 2009



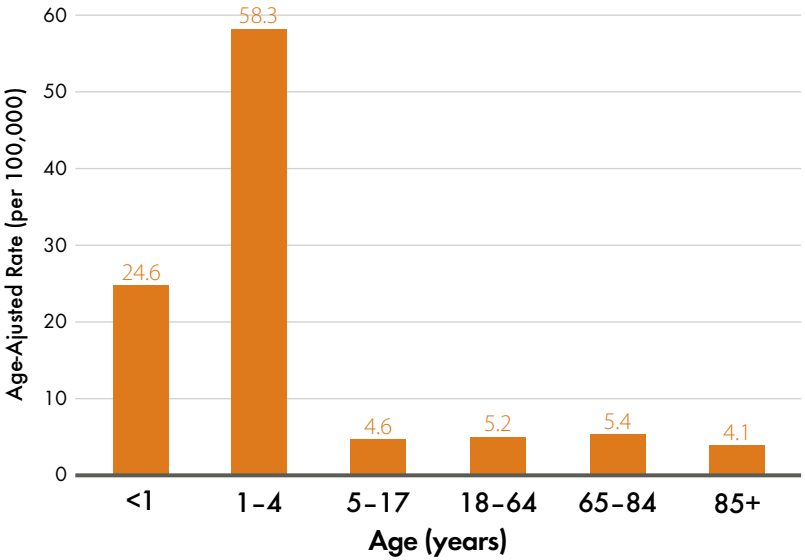
18–64	65–84	85+
1.2	10.5	44.4
0.5	–	–
–	6.9	29.6
–	6.2	34.5

Data source: DSMF 2009
Rates for those <18 years not calculated due to statistical instability.
"–" denotes rates that are statistically unstable.

suggests that the more serious fall injuries are suffered disparately by older adults, while less serious injuries may be more equally spread among these different age groups. Alternatively, falls of similar seriousness may lead to more severe complications among older adults due to underlying morbidities, and so may necessitate admission to the hospital more often.

Falls from steps or stairs are the most common type of fatal fall among all adults (Figure 19). Rates of unintentional falls in the home that result in death are greatest in older adults, with high rates among those age 65 and older, and the high-

FIGURE 20. ED visits for accidental poisonings* in the home, age-adjusted rates, by age group, 2009



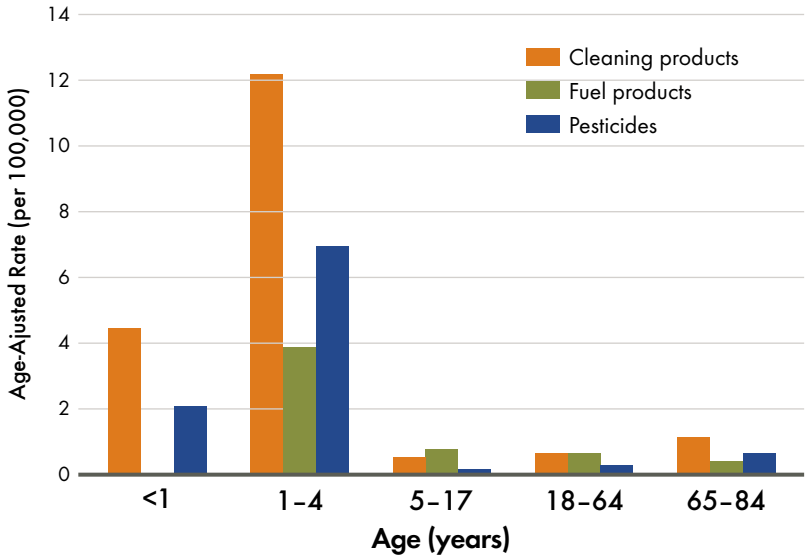
* Excluding poisoning by alcoholic beverages, prescription and nonprescription drugs, food/food products, CO, and secondhand tobacco smoke.

Data source: OSHPD 2009

est rates among those 85 and older. By comparison, very few deaths result from falls in the home among children. In fact, rates of fall deaths among children <18 years are not shown in Figure 19 because the numbers of such deaths were too low for stable rates to be calculated.

One possible explanation for this age-related disparity is that older adults tend to be more vulnerable to fatal complications from falls. Another explanation may be social, where those older adults vulnerable to falls and living alone may not have adequate assistance to get them to the ED when a potentially fatal fall occurs.

FIGURE 21. ED visits for accidental poisonings in the home, age-adjusted rates, by cause and age group, 2009



4.5	12.2	0.5	0.7	1.1
–	3.8	0.8	0.7	0.4
2.1	7.0	0.2	0.4	0.7

Data source: OSHPD 2009

Rates for those 85+ years not calculated due to statistical instability

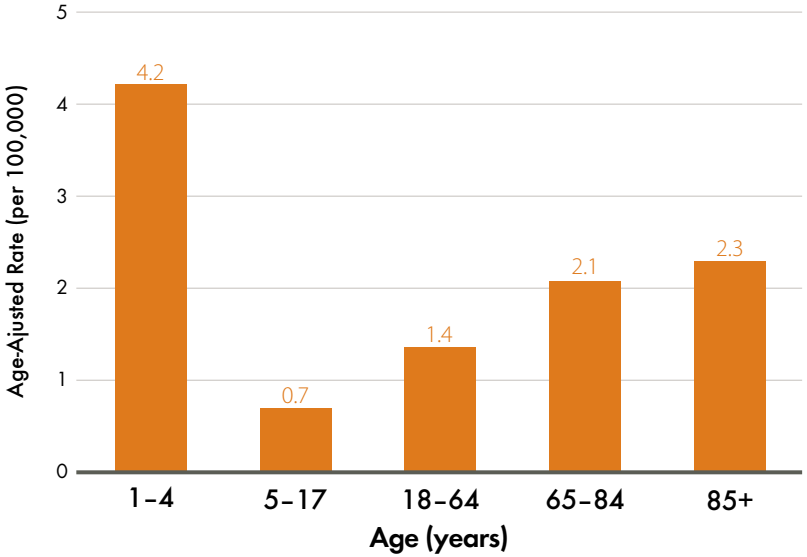
"–" denotes rates that are statistically unstable.

Poisonings

According to data from all U.S. poison control centers, of the 2.5 million poisoning exposures in 2009 that led to a call to a poison control center, 82.4% were unintentional and 91.2% occurred in the victim's own home.[58]

Frequent poisoning exposures include cleaning products, personal care products, and pesticides. Young children can easily be poisoned by these substances when they gain access to hazardous products that have not been stored safely. As shown in Figure 20, rates of accidental poisonings in the home that result in

FIGURE 22. Hospitalizations for accidental poisonings* in the home, age-adjusted rates, by age group, 2009

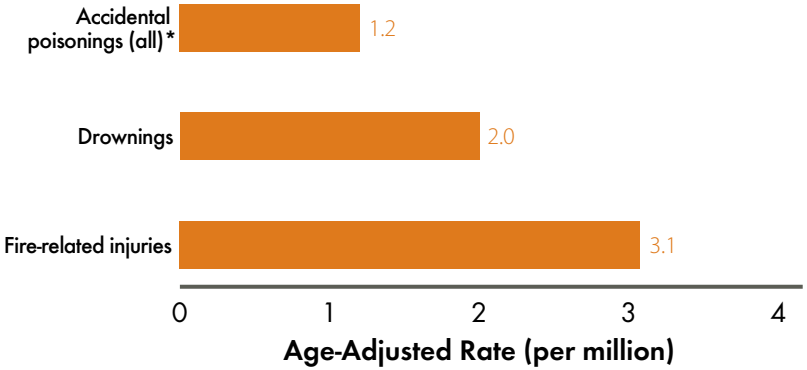


* Excluding poisoning by alcoholic beverages, prescription and nonprescription drugs, food/food products, CO, and secondhand tobacco smoke.

Data source: OSHPD 2009

Rates for those <1 year not calculated due to statistical instability.

FIGURE 23. Fatal non-fall unintentional injuries in the home, age-adjusted rates, 2009



* Excluding poisoning by alcoholic beverages, and prescription and nonprescription drugs.

Data source: DSMF 2009

an ED visit are highest among young children (ages 0-4). These data exclude poisoning from accidental exposure to prescription and non-prescription drugs, alcoholic beverages, food and food products, carbon monoxide, and what are described in the ICD-9-CM coding system as secondhand smoke poisonings.[m]

Figure 21 shows that ED rates for all types of accidental poisonings are highest among young children. These poisonings most commonly result from exposure to cleaning products, followed by pesticides.

Rates of accidental poisonings in the home that result in a hospitalization are highest among children ages 1-4 (Figure 22). Compared to young children, adults are about 90% less likely to visit the ED for an accidental poisoning in the home. However, they are only about 65% less likely to be hospitalized for an accidental poisoning.

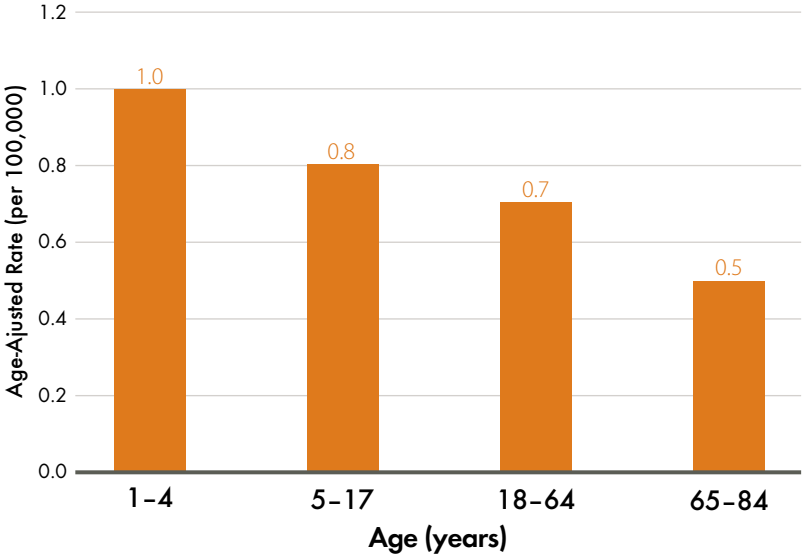
Figure 23 shows data on fatal unintentional injuries for causes other than falls, including poisonings. (Details on fatal non-fall injury rates can be found in **Appendix I, Table 33**.) The overall fatality rate for accidental poisonings is 1.2 per million. Fatal accidental poisonings are coded differently than non-fatal accidental poisonings. For example, fatal poisonings include deaths due to inhalation of carbon monoxide (CO) and ingestion of food and food products, whereas non-fatal poisonings exclude both of these categories. Likewise fatal poisonings exclude all deaths from alcohol, while non-fatal poisoning data only exclude poisoning from alcoholic beverages.

Carbon Monoxide Poisonings

Carbon monoxide (CO) is an odorless, colorless, and tasteless gas, which is produced by the incomplete combustion of fuels. CO poisoning can occur when occupants inhale combus-

m The term "secondhand smoke poisoning" is used to describe cases in which a non-smoker is exposed to secondhand tobacco smoke and this is documented by a health care provider as the cause of the specific illness or symptom for which the patient is seeking care. A fuller description of secondhand smoke poisoning can be found in the section on Secondhand Smoke Illness.

FIGURE 24. ED visits for CO poisonings in the home, age-adjusted rates, by age group, 2009



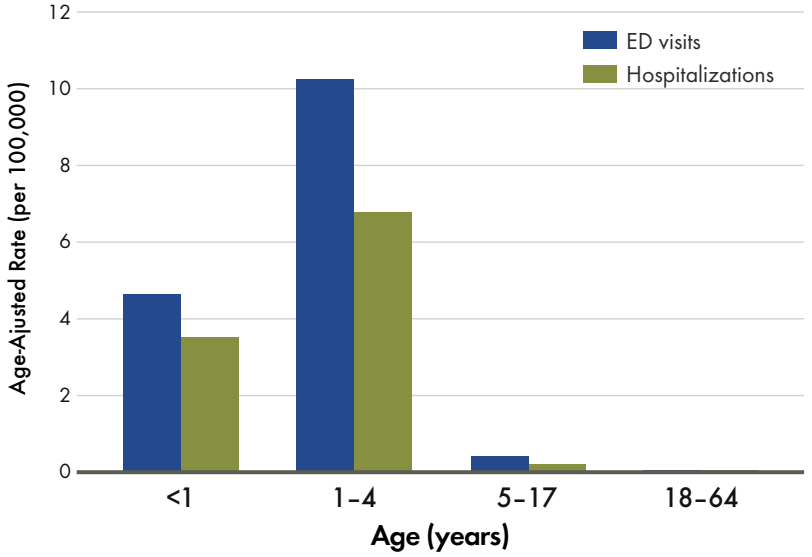
Data source: OSHPD 2009

Rates for those <1 year and 85+ years not calculated due to statistical instability.

tion fumes from gas stoves and ranges, furnaces, water heaters, gas dryers, portable generators, and wood-burning stoves and fireplaces.[59] In 2010, California Senate Bill 183 was signed into law requiring that all single-family homes with fossil fuel-burning appliances, fireplaces, or attached garages have CO detectors installed by July 2011, and that all other types of housing have CO detectors installed by January 2013.[60]

As shown in Figure 24, rates of ED visits for CO poisonings in the home are relatively constant across age groups, though there is a slight decrease in rates with increasing age. No data are shown for hospitalizations for CO poisonings in the home in 2009 due to statistical instability. See **Appendix I, Table 34**, for details.

FIGURE 25. ED visits and hospitalizations for drownings in the home, age-adjusted rates, by age group, 2009



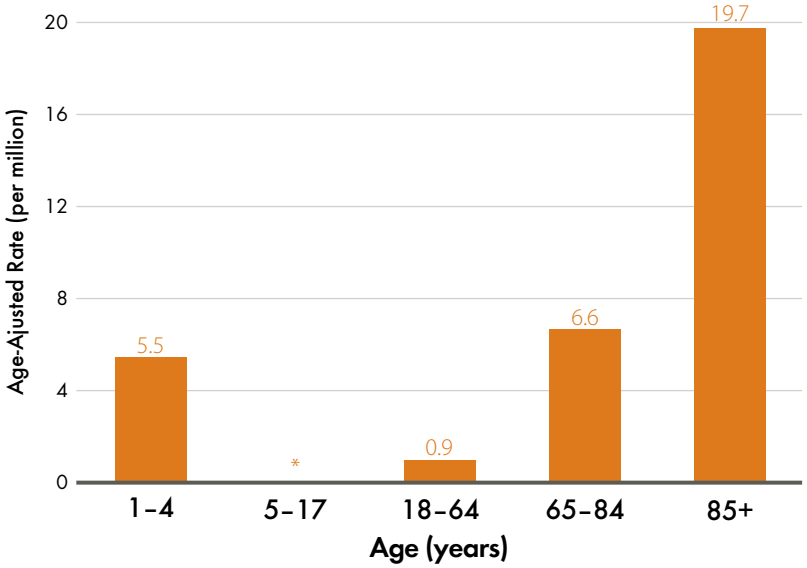
Data source: OSHPD 2009

Rates for those 65+ years not calculated due to statistical instability.

Drownings

Rates of ED visits and hospitalizations for drownings in the home are much higher among young children (ages 0-4) than any other age group (Figure 25). The setting where infants (age <1) tend to drown is in bathtubs (often while left unattended), while those slightly older (age 1-4) tend to drown in pools (because they are mobile but do not yet know how to swim).[61] Occurrences of non-fatal drownings among those 65 and older are so uncommon that the rates are unstable and not shown here.

FIGURE 26. Fatal drownings in the home, age-adjusted rates, by age group, 2009

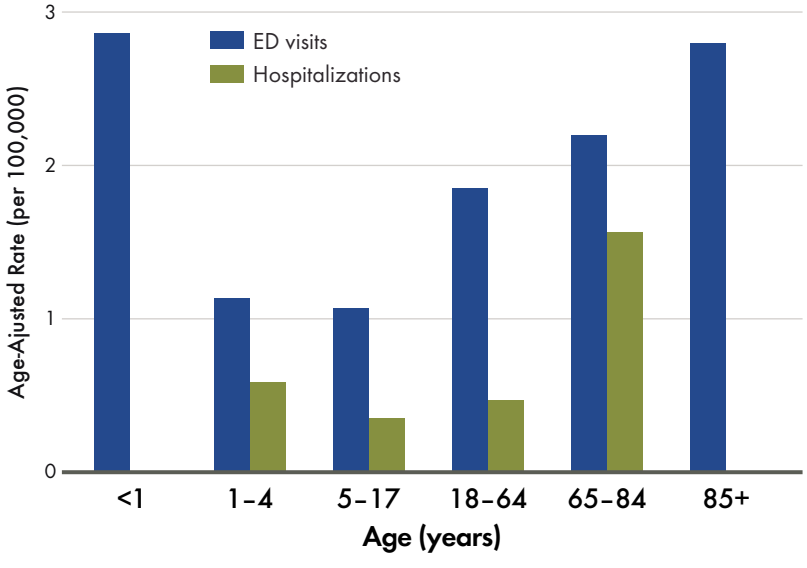


Data source: DSMF 2009

"*" denotes rates that are statistically unstable.

Rates for those <1 year not calculated due to statistical instability.

FIGURE 27. ED visits and hospitalizations for fire-related injuries in the home, age-adjusted rates, by age group, 2009



Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

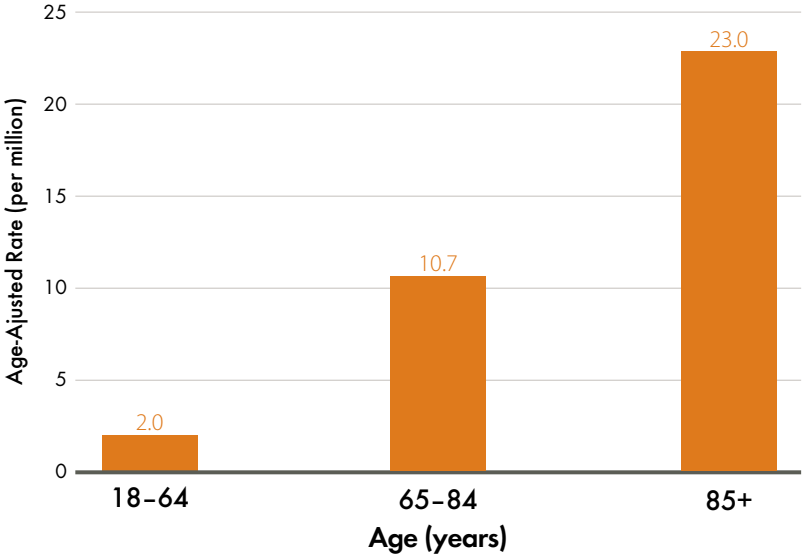
Figure 26 shows that rates of fatal drownings are dramatically highest among adults age 85 and older (19.7 per 100,000), followed by those ages 65-84 (6.6), and children ages 1-4 (5.5). The number of fatal drownings among those <1 year is so low that the rate was not calculated due to statistical instability. This fatal drowning pattern contrasts sharply with that in Figure 25 for non-fatal drownings. These differing patterns may reflect social circumstances, where young children are usually with adults who can rescue them from fatal drowning. In contrast, older adults may be isolated or may not have adequate assistance, and may drown before anyone is able to rescue them. It is also possible that underlying morbidities among older adults increase the chances that death will result from the drowning even if the person is rescued.

Fire-Related Injuries

Fire-related injuries include burns as well as inhalation of smoke and toxic fumes. Household risk factors for fire-related injuries or deaths include lack of a working smoke alarm and compromised emergency egress.[62,63] Results presented here are limited to uncontrolled fires in the home and exclude arson.

As shown in Figure 27, rates of ED visits for fire-related injuries are highest among those <1 year and ≥85 years of age.

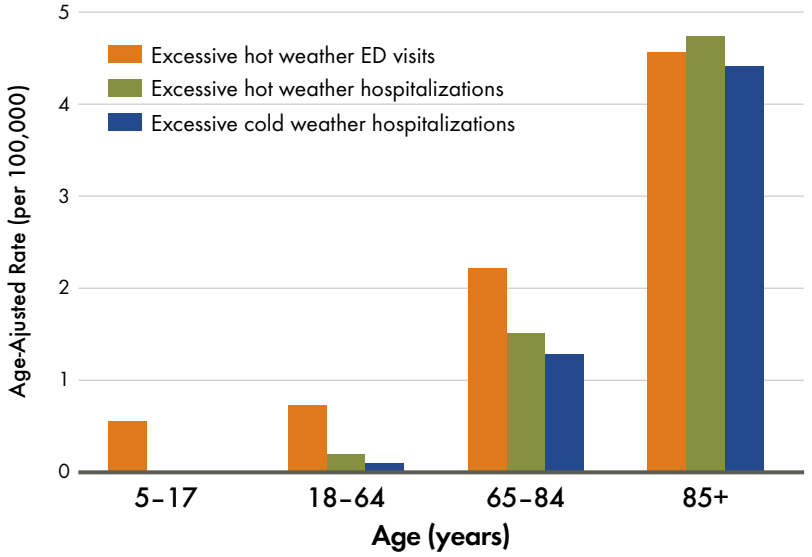
FIGURE 28. Fatal fire-related injuries in the home, age-adjusted rates, by age group, 2009



Data source: DSMF 2009

Rates for those <18 years not calculated due to statistical instability.

FIGURE 29. ED visits and hospitalizations for thermal stress in the home, age-adjusted rates, by age group, 2009



Data source: OSHPD 2009

Rates for those <5 years not calculated due to statistical instability.

"–" denotes rates that are statistically unstable.

Rates of hospitalizations for fire-related injuries in the home are highest among those 65–84 years of age.

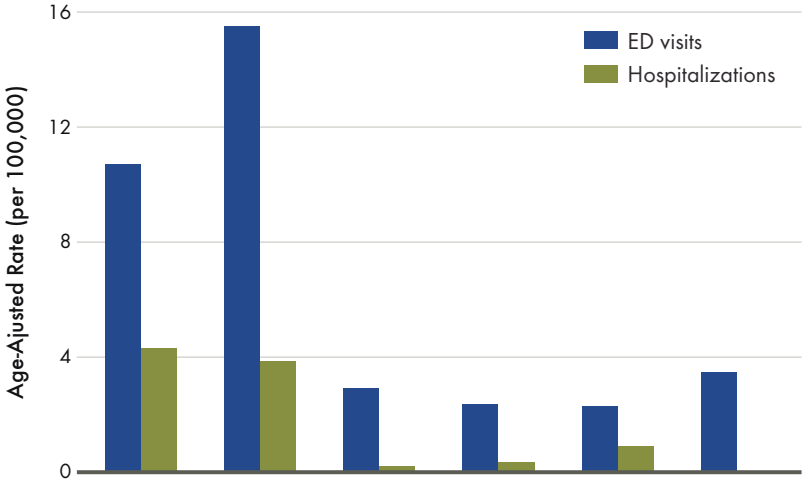
As shown in Figure 28, rates of fatal fire-related injuries among adults increase with age and are the highest among those age 85 and older.

Extreme Heat and Cold Injuries (Thermal Stress)

In this report, thermal stress is defined as stress on the body due to extreme weather temperatures. Cold stress includes central nervous system depression, heart arrhythmias, and renal failure from hypothermia. Heat stress includes heat cramps, heat exhaustion, heat syncope, and heat stroke from hyperthermia.[64,65] Lack of heating and air-conditioning can be risk factors for thermal stress. Broken, non-functioning, or improperly used windows may be factors as well, along with poorly maintained structures that create damp or very drafty conditions in cold weather.

ED visits and hospitalizations for thermal stress in the home increase with age (Figure 29). Older adults are often more vulnerable to the effects of thermal stress due to underlying health conditions. Impaired mobility can also make it more difficult for older adults to leave the home when it is too cold or too hot. While deaths from thermal stress in the home do

FIGURE 30. ED visits and hospitalizations for hot tap water injuries in the home, age-adjusted rates, by age group, 2009



Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

occur, the frequency of deaths in which thermal stress is identified as the underlying cause of death is low enough for rates to be unstable, so data are not shown here. It is important to note, however, that examining only the underlying cause of death provided on death certificates will likely substantially underestimate the true burden of heat-related deaths where heat is a contributing factor.[66,67] Limited additional data on thermal stress can be seen in **Appendix I, Table 33**.

Hot Tap Water Injuries

Adult skin will typically burn within two seconds in 150°F degree water, six seconds in 140°F water, and 30 seconds in 130°F water. A prolonged exposure (five minutes) to 120°F water can also result in burns.[68] The skin of children is more sensitive and will burn more quickly. A five-minute exposure of a young child to 116°F water can result in a burn.[69] Scalds in the home often occur when the maximum water temperature is set too high at the water heater.

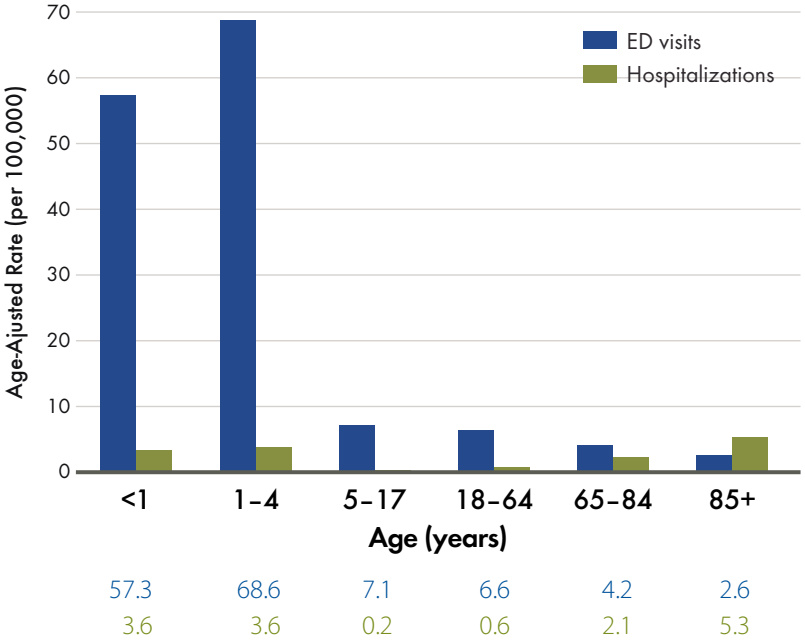
Figure 30 shows that rates of ED visits and hospitalizations for hot tap water injuries in the home are highest among young children (ages 0–4). In addition to having more sensitive skin, young children may be placed into the bath or shower by an adult who has not tested the water temperature or may turn on hot tap water themselves while unsupervised by an adult. Although deaths from hot tap water injuries in the home occur, they are sufficiently rare that stable rates cannot be calculated. Limited mortality data on hot tap water injuries can be found in **Appendix I, Table 33**.

Injuries from Other Hot Objects

Young children are especially vulnerable to severe burns from hot objects in the home.[70] Severe contact burns can occur from open access to hot objects such as heating appliances, radiators, hot pipes, ovens, fireplace screens, or other household appliances.[71,72]

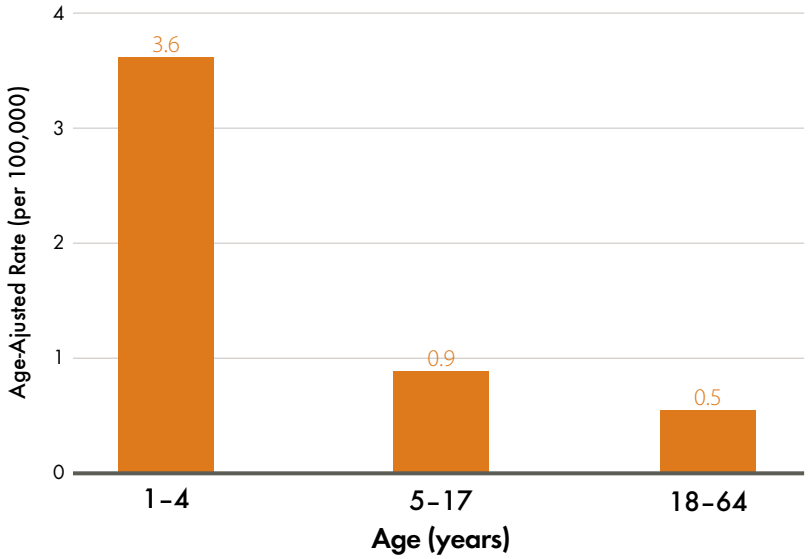
Rates of ED visits for hot object injuries in the home are much higher among young children (ages 0–4) than any other age group (Figure 31). Young children are least likely to understand not to touch a hot object. Rates of hospitalization for hot object injuries in the home are also higher for young children than for age groups other than adults age 85 and older, who have the highest rate. It may be that burns suffered by those age 85+ tend to be more severe than those of other age groups, and require hospitalization. Another reason for this disparity may be that health care providers are more likely to admit these patients because of a greater likelihood of complications. Deaths from hot objects in the home occur but are sufficiently rare that stable rates cannot be calculated. Limited

FIGURE 31. ED visits and hospitalizations for hot object injuries in the home, age-adjusted rates, by age group, 2009



Data source: OSHPD 2009

FIGURE 32. ED visits for injuries from exposure to electrical current in wiring and appliances in the home, age-adjusted rates, by age group, 2009



Data source: OSHPD 2009

Rates for those <1 year and 65+ years not calculated due to statistical instability.

mortality data on injuries from hot objects can be found in Appendix I, Table 33.

Injuries from Electrical Current in Wiring and Appliances

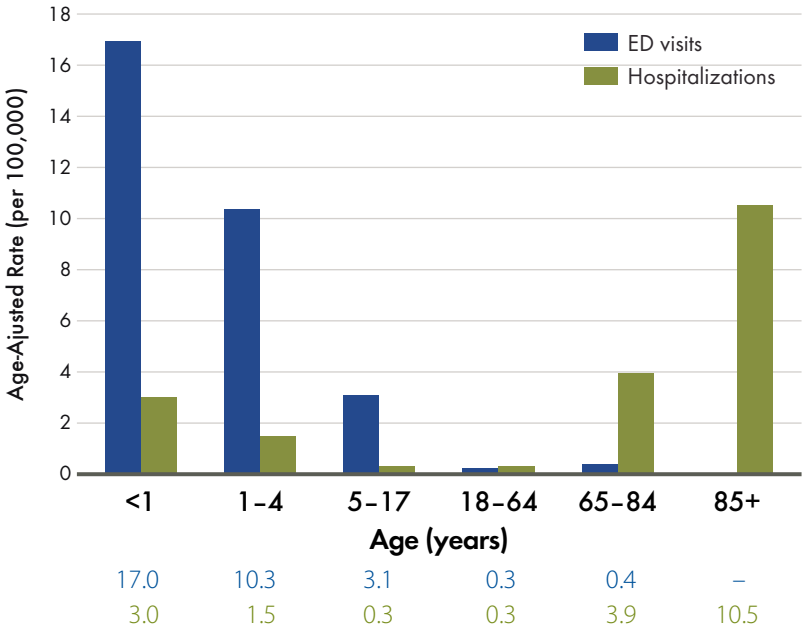
Injuries involving electrical current in the home occur from contact with items such as electrical outlets and cords, exposed wires, and plug-in appliances.[73] The types of injuries sustained from exposure to electric current can include burns, electrical shock, and electrocution.

As shown in Figure 32, rates of ED visits for injuries from electrical current in wiring and appliances in the home are highest for young children (ages 1-4). Children of this age are mobile, low to the ground, and prone to placing a finger in an outlet or biting an electrical cord. Although hospitalizations and deaths from exposure to electrical current in wiring and appliances also occur, hospitalizations are sufficiently rare that rates are not stable, and deaths cannot be separated from total deaths involving electrical current. Therefore, these data are not presented.

Secondhand Smoke Illness

ED visits or hospitalizations can be attributed to "accidental poisoning by secondhand tobacco smoke."[74] This term is used to describe cases in which a non-smoker is exposed to secondhand tobacco smoke and this is documented by a health care provider as the cause of the specific illness or symptom for which the patient is seeking care.[75] The primary diagnosis

FIGURE 33. ED visits and hospitalizations for secondhand smoke illness in the home, age-adjusted rates, by age group, 2009



Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

accompanying this description varies between the ED and the inpatient hospital setting. In 2009, the top 3 diagnoses associated with secondhand smoke illness in the ED were asthma (19%), acute upper respiratory infections other than flu or strep throat (15%), and ear infection (9%). The top three diagnoses associated with secondhand smoke illness in the inpatient hospital setting were asthma (21%), pneumonia (10%), and chronic obstructive pulmonary disease or COPD (10%).

Figure 33 shows that ED visits for secondhand smoke illness in the home generally decrease with age. However, rates of hospitalizations for secondhand smoke illness in the home are highest in older adults, especially those 85 years and older. These age patterns are most likely linked with the diseases associated with secondhand smoke. Respiratory infections, asthma, and ear infections are all common in young children and may not require hospitalization, while pneumonia and COPD are common diseases in older adults and are more likely to result in hospitalization.

Section 4: Example Type III Indicators

As suggested in the introduction of this report, there are several indicators that would be very useful in describing the status of housing in California as it relates to health, but for which data: (1) are not currently available, (2) are not updated regularly, or (3) require additional analyses for which resources are not available. These are characterized as Type III indicators. Below are a few examples of Type III indicators which, if made available at the statewide level, would shed light on important aspects of California's residential properties and the health of occupants.

Inadequate Housing as Defined by the American Housing Survey

The American Housing Survey (AHS) is conducted by the U.S. Census Bureau on behalf of the Department of Housing and Urban Development (HUD). AHS collects data on U.S. housing units, including occupant demographics, housing and neighborhood quality, and housing costs. While no state-level data are collected in the AHS, national data are collected in odd numbered years, and data for each of 47 specific Metropolitan Areas are collected about every six years on a staggered basis. AHS data are collected both by telephone and by personal visit. Many physical characteristics of a housing unit can be objectively assessed from this source.[76]

All housing units are assigned to one of three categories: severely inadequate, moderately inadequate, or adequate. Data for these categories have been collected since 1997.[n] There are many healthy housing concerns that are not addressed by AHS measures. However, such an index would go far in describing the general adequacy of housing in California if it were available at a statewide or local level, in a consistent manner, and on a more regular basis.

Local Housing Conditions and Use of Parcel Data

Parcel data provide the geographic locations and footprints of all properties in an area. These data are collected by county governments for taxation purposes. These data could be used by local jurisdictions in conjunction with other information to learn more about the healthfulness of residential properties. Examples of other information that could be used in conjunction with parcel data include code enforcement violations, vector control cases, or building permits issued. Code enforcement data might supply useful information on properties with water damage, those lacking functional smoke or CO alarms, or those with faulty structural elements. Vector control data would supply information on complaints regarding certain pests, including disease-carrying vectors such as mosquitoes and rodents. Building permit data would provide information on seismic upgrades, new roofs, or major upgrades to internal building systems (e.g., plumbing, electrical, ventilation).

Gathering and compiling parcel and other local data at a statewide level to calculate these types of indicators is not feasible given both the wide variation in reporting systems throughout the state, and time and resource constraints. Accordingly, this type of indicator is considered Type III. However, there are currently statewide efforts underway to make all county-level parcel data available for use in a Geographic Information System (GIS).[77] This will ultimately allow local jurisdictions to combine parcel data with other information to

n As of 2007, some adjustments were made to what is included in each of the three categories. Refer to endnote 76 for details.

create rich indicators valid for local use as well as for comparison with other jurisdictions.

Housing Near Busy Roadways

Large numbers of scientific studies have firmly established that pulmonary, cardiovascular, and other adverse health outcomes are associated with exposure to traffic-related air pollutants.[78,79,80]

In its 2005 Air Quality and Land Use Handbook, the California Air Resources Board (CARB) recommends against siting new development of schools, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities near busy roadways. CARB recommends a distance of at least 500 feet between such development and any freeway, any urban roadway with ≥100,000 vehicles per day, or any rural roadway with ≥50,000 vehicles per day.[81] CARB's recommendation was based on an extensive review of epidemiological and air pollution studies, which show exposures to traffic-related pollution diminishing with distance from busy roadways. For instance, an estimated 70% reduction in particulate pollution levels was found 500 feet from a freeway.[82]

Many residences are already located within 500 feet of busy roadways. Currently, there is an effort to meet increasing residential needs through infill and transit-oriented development. The purpose of this approach is to increase population density and access to community services while protecting surrounding green spaces, resources, and agricultural lands. In so doing, mass transit and active transportation options increase and the number of motor vehicle trips, along with vehicle miles traveled, will decrease. The expectation is improved regional air quality. However, local jurisdictions and developers sometimes have limited options for siting new residential development and have to balance potential local pollution exposures against regional pollution reduction and the other anticipated benefits of building housing in densely populated areas.

Understanding the extent to which proposed and current residential developments are near busy roadways could help health officials and local stakeholders identify and quantify risks for communities. Mitigation measures might be implemented or policies refined based on reliable geographic information.

An indicator examining the percent of proposed residential developments near busy roadways might be calculated using traffic data and parcel development data from city and/or county planning departments. The percent of the population currently living near busy roadways has previously been calculated by the California Environmental Health Tracking Program at CDPH using 2004 traffic data from CalTrans and 2000 population data from the U.S. Census Bureau.[o,83]

As with other desirable Type III indicators, gathering and analyzing the data to update indicators on housing near busy roadways on a regular basis would require substantial resources. Seeking opportunities for funding may be a worthwhile endeavor for agencies or individuals wishing to better understand this and other important aspects of healthy housing.

o The California Environmental Health Tracking Program calculated this as the percent of each county's population living within 300 meters of a roadway with >10,000 vehicles per day.

Conclusions

This report represents a significant step in the ongoing development and tracking of healthy housing indicators for the state of California. These indicators are intended to support and inform healthy housing activities around the state, including program development, intervention activities, and advocacy.

Everyone in California deserves to live in a safe, affordable, and healthy home. Although significant progress has been made toward achieving this goal in some arenas, this report highlights many areas where work still needs to be done. Hopefully, when tracked over time, the data will reflect continuing progress toward the availability of more healthful housing for California's diverse population.

Acronyms

ACBS Asthma Call-Back Survey

ACS American Community Survey

AHS American Housing Survey

BRFS/BRFSS Behavioral Risk Factor Survey/Behavioral Risk Factor Surveillance System

CA California

CABRFSS California Behavioral Risk Factor Surveillance System

CAPI Computer-Assisted Personal Interview

CARB California Air Resources Board

CASRO Council of American Survey Research Organizations

CATI Computer-Assisted Telephone Interview

CDC Centers for Disease Control and Prevention

CDPH California Department of Public Health

CHAS Comprehensive Housing Affordability Strategy data

CHIS California Health Interview Survey

CHPR Center for Health Policy Research

CO Carbon Monoxide

CTPO Center for Tobacco Policy and Organizing

DFEH Department of Fair Employment and Housing

DSMF Death Statistical Master File

DSS Disproportionate Stratified Sampling

Ecode External Cause of Injury Code

ED Emergency Department

EPA (U.S) Environmental Protection Agency

FEMA Federal Emergency Management Agency

FMR Fair Market Rent

FY Fiscal Year

GIS Geographic Information System

GQ Group Quarters

HAMFI HUD Area Median Family Income

HU Housing Unit

HUD (U.S. Department of) Housing and Urban Development

ICD International Classification of Diseases

MCD Minor Civil Division

MSA Metropolitan Statistical Area

NCHH National Center for Healthy Housing

OSHPD Office of Statewide Health Planning and Development

PUMA Public Use Microdata Area

PUMS Public Use Microdata Sample

RRP Renovation, Repair and Painting

RV Recreational Vehicle

SB Senate Bill

SHS Secondhand Smoke

SRG Survey Research Group

SRO Single Room Occupancy

THS Third Hand Smoke

UCLA University of California Los Angeles

U.S. United States

WC Workers' Compensation

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Appendix I: Expanded Data Tables

TABLE 1 (for Table 2). Year of construction and units per structure of housing units in CA, 2009

Housing Characteristic	Number	%	95% CI
Total	13,434,537		
Year housing structure built			
≤1949	2,202,686	16.4	16.2–16.6
1950–1979	6,276,012	46.7	46.4–47.0
1980–2004	4,422,721	32.9	32.7–33.2
≥2005	533,118	4.0	3.9–4.1
Number of Units per Structure			
1, detached	7,794,203	58.0	57.8–58.2
1, attached OR 2 units	1,302,995	9.7	9.5–9.9
3 or 4	756,255	5.6	5.5–5.8
5 to 9	823,752	6.1	6.0–6.2
10 to 19	729,288	5.4	5.3–5.6
20 or more	1,493,278	11.1	10.9–11.3
Mobile home, boat, RV, other	534,766	4.0	3.9–4.1

Data source: ACS 2009

TABLE 2 (for Table 3). Occupancy characteristics of housing units in CA, 2009

Occupancy Characteristic	Number	%	95% CI
Occupied housing units	12,214,891	90.9	90.7–91.1
Occupied units by tenure			
Owner-occupied housing units	6,910,054	56.6	56.3–56.8
Renter-occupied housing units	5,304,837	43.4	43.2–43.7
Occupied units with children	4,566,138	37.4	37.2–37.6

Data source: ACS 2009

Table 3 (for Figure 1). Number of units per structure, by tenure, CA, 2009

Number of Units per Structure	Number	%	95% CI
Owner-Occupied Housing Units			
1, detached	5,643,535	81.7	81.4–81.9
1, attached OR 2 units	558,110	8.1	7.9–8.2
3 or 4	83,857	1.2	1.1–1.3
5 to 9	78,826	1.1	1.1–1.2
10 to 19	55,547	0.8	0.7–0.9
20 or more	140,061	2.0	1.9–2.1
Mobile home, boat, RV, other	350,118	5.1	5.0–5.2
Renter-Occupied Housing Units			
1, detached	1,527,141	28.8	28.3–29.2
1, attached OR 2 units	624,525	11.8	11.5–12.1
3 or 4	584,710	11.0	10.7–11.3
5 to 9	658,785	12.4	12.2–12.7
10 to 19	593,211	11.2	10.9–11.5
20 or more	1,201,048	22.6	22.3–23.0
Mobile home, boat, RV, other	115,417	2.2	2.0–2.3

Data source: ACS 2009

TABLE 4 (for Table 4). Lower income* households among occupied housing units, by tenure, CA, 2006–2008

Lower Income Households	Number	%	95% CI
Among all occupied housing units	5,092,725	41.8	41.7–41.9
Among owner-occupied housing units	2,005,955	28.5	28.4–28.6
Among renter-occupied housing units	3,086,770	60.1	59.9–60.2

*Lower income households are defined as those with incomes 0-80% of the median family income (HAMFI) in the area in which they live.

Data source: ACS/CHAS 2006-2008

TABLE 5 (for Figures 2 and 3). Housing units that are cost burdened, by tenure and household income*, CA, 2006–2008

	Cost Burdened			Severely Cost Burdened		
Tenure and Income Status of Housing Unit	Number	%	95% CI	Number	%	95% CI
Owner-Occupied Housing Units						
Of all owner-occupied housing units	1,283,775	18.2	18.2–18.3	879,590	12.5	81.4–81.9
Of lower income owner-occupied housing units	1,283,775	64.0	63.8–64.2	879,590	43.8	7.9–8.2
Renter-Occupied Housing Units						
Of all renter-occupied housing units	2,257,660	43.9	43.8–44.1	1,271,670	24.7	28.3–29.2
Of lower income renter-occupied housing units	2,257,660	73.1	73.0–73.3	1,271,670	41.2	11.5–12.1

*Lower income households are defined as those with incomes 0-80% of the median family income (HAMFI) in the area in which they live.

Data source: ACS/CHAS 2006-2008

TABLE 6 (for Figure 4). Cost burden among lower income* households, by tenure and household income level, CA, 2006-2008

Household Income Level	Owner-Occupied Housing Units			Renter-Occupied Housing Units		
	Number	%	95% CI	Number	%	95% CI
Cost Burdened						
Household income ≤30% of HAMFI	344,770	74.7	74.3–75.1	950,670	81.6	81.4–81.9
Household income >30% and ≤50% of HAMFI	371,525	64.0	63.7–64.3	751,820	82.0	81.7–82.2
Household income >50% and ≤80% of HAMFI	567,480	58.9	58.6–59.2	555,170	55.2	54.9–55.6
Severely Cost Burdened						
Household income ≤30% of HAMFI	282,850	61.3	60.9–61.7	807,250	69.3	69.1–69.6
Household income >30% and ≤50% of HAMFI	265,845	45.8	45.4–46.1	354,315	38.6	38.3–39.1
Household income >50% and ≤80% of HAMFI	330,895	34.3	34.0–34.6	110,105	11.0	10.7–11.2

* Lower income households are defined as those with incomes 0-80% of the median family income (HAMFI) in the area in which they live.

Data source: ACS/CHAS 2006-2008

TABLE 7. Complete* facilities in housing units, by occupancy status, CA, 2009

Facility Type	Number	%	95% CI
Complete Plumbing Facilities			
Complete plumbing facilities in all units	13,294,794	99.0	98.9–99.0
Complete plumbing facilities in occupied units	12,142,742	99.4	99.4–99.4
Complete Kitchen Facilities			
Complete kitchen facilities in all units	13,001,957	96.8	96.7–96.9
Complete kitchen facilities in occupied units	12,065,028	98.8	98.7–98.8

* Data presented in the body of the report show the percent of housing units with incomplete facilities, whereas this table shows the inverse (the percent with complete facilities). Confidence intervals are valid for the percent of complete facilities, as shown here.

Data source: ACS 2009

TABLE 8 (for Figure 5): Complete* plumbing and kitchen facilities in occupied housing units, by tenure, CA, 2009

Facility Type	Number	%	95% CI
Complete Plumbing Facilities			
Owner-occupied housing units	6,884,007	99.6	99.0–100.0
Renter-occupied housing units	5,258,735	99.1	98.3–100.0
Complete Kitchen Facilities			
Owner-occupied housing units	6,878,726	99.5	99.5–99.6
Renter-occupied housing units	5,186,302	97.8	97.6–97.9

* Data presented in the body of the report show the percent of housing units with incomplete facilities, whereas this table shows the inverse (the percent with complete facilities). Confidence intervals are valid for the percent of complete facilities, as shown here.

Data source: ACS 2009

TABLE 9 (for Figure 6). Levels of crowding, by tenure, CA, 2009

Level of Crowding	Number	%	95% CI
Owner-Occupied Housing Units			
≤1.00 occupants/room	6,631,611	96.0	95.6–96.3
1.01–1.50 occupants/room	213,753	3.1	3.0–3.2
>1.50 occupants per room	64,690	0.9	0.9–1.0
1.51–2.00 occupants/room	49,747	0.7	0.7–0.8
>2.00 occupants/room	14,943	0.2	0.2–0.2
Renter-Occupied Housing Units			
≤1.00 occupants/room	4,577,727	86.3	85.8–86.8
1.01–1.50 occupants/room	624,525	7.9	7.6–8.1
>1.50 occupants per room	584,710	5.8	5.6–6.1
1.51–2.00 occupants/room	658,785	3.9	3.7–4.0
>2.00 occupants/room	593,211	2.0	1.9–2.1

Data source: ACS 2009

TABLE 10 (for Figure 7). Housing units with complete* plumbing facilities, by crowding and tenure, CA, 2009

Level of Crowding in Housing Units with Complete Plumbing Facilities	Number	%	95% CI
Owner-Occupied Housing Units			
≤1.00 occupants/room	6,608,359	99.6%	98.9-100.0
1.01-1.50 occupants/room	211,569	99.0%	92.9-100.0
>1.50 occupants/room	64,079	99.1%	97.0-100.0
Renter-Occupied Housing Units			
≤1.00 occupants/room	4,540,214	99.2%	98.1-100.0
1.01-1.50 occupants/room	412,989	99.0%	98.8-99.3
>1.50 occupants/room	305,532	98.5%	97.7-99.3

* Data presented in the body of the report show the percent of housing units with incomplete facilities, whereas this table shows the inverse (the percent with complete facilities). Confidence intervals are valid for the percent of complete facilities, as shown here.

Data source: ACS 2009

TABLE 11 (for Figure 8). Concurrent adverse housing conditions and housing cost burden, by tenure, CA, 2009

Number of Adverse Conditions*	Number	%	95% CI
Owner-occupied units			
No selected conditions	3,906,719	56.5	56.2–56.9
With one selected condition	2,843,005	41.1	40.8–41.5
With two selected conditions	149,605	2.2	2.0–2.3
With three selected conditions	9,596	0.1	0.1–0.2
With four selected conditions	1,129	0.02	0.01–0.03
Renter-occupied units			
No selected conditions	2,236,201	42.2	41.8–42.6
With one selected condition	2,586,947	48.8	48.3–49.2
With two selected conditions	451,984	8.5	8.3–8.8
With three selected conditions	25,460	0.5	0.4–0.5
With four selected conditions	4,245	0.08	0.05–0.11

*In Table 11, "condition" includes incomplete plumbing facilities, incomplete kitchen facilities, overcrowding, and housing cost burden.

Data source: ACS 2009

TABLE 12 (for Figure 9). Heating method for occupied housing units, CA, 2009

Heating Method	Number	%	95% CI
Utility gas	8,148,678	66.7	66.6–66.9
Electricity	3,008,533	24.6	24.4–24.9
Bottled gas, fuel oil, or kerosene	437,212	3.6	3.5–3.7
Wood	219,809	1.8	1.7–1.9
Solar energy	7,525	0.1	0.1–0.1
Other fuel	38,026	0.3	0.3–0.3
No fuel used	355,108	2.9	2.8–3.0

Data source: ACS 2009

TABLE 13 (for Table 5). Age of home and report of peeling paint, CA, 2009

Age of Home and Report of Peeling Paint	%	95% CI
Homes built <1978	53.6	51.5–55.7
Pre-1978 homes with peeling paint of all homes built pre-1978	18.0	15.4–20.5
Pre-1978 homes with peeling paint of all homes in CA	7.1	6.0–8.2

Data source: CABRFSS 2009

TABLE 14 (for Figure 10). Smoking restrictions in the home, CA, CABRFSS 2009

Smoking Restrictions	%	95% CI
Smoking completely prohibited	77.8	76.8–78.8
Some restrictions on smoking	11.8	11.0–12.6
No smoking restrictions	10.4	9.7–11.1

Data source: CABRFSS 2009

TABLE 15. Report of smoking in the home, CA, CABRFSS 2009

Smoking Occurs in the Home	%	95% CI
Yes	8.7	7.4–9.9
No	91.3	90.1–92.6

Data source: CABRFSS 2009

TABLE 16 (for Figure 11). Households with complete smoking bans, by smoker composition, CA, CABRFSS 2009

Smoker Composition	%	95% CI
No smokers	82.9	81.9–83.9
Some smokers	60.6	57.6–63.5
All are smokers	44.8	38.1–51.4

Data source: CABRFSS 2009

TABLE 17. Smoking ever allowed in the home, CA, CHIS 2009

Smoking Allowed in the Home	%	95% CI
Yes	7.5	6.9–8.0
No	92.5	92.0–93.1

Data source: CHIS 2009

Table 18 (for Figure 12). Homes where smoking is allowed, by housing type, CA, CHIS 2009

Housing Type	%	95% CI
House	6.5	5.9–7.0
Multi-unit building	9.4	8.0–10.8
Mobile home	14.5	11.1–18.0

Data source: CHIS 2009

TABLE 19 (for Figure 13). Average days per week of smoking in the home, by smoking rules, CA, CHIS 2009

Average Days per Week of Smoking	%	95% CI
Among those Allowing Smoking		
Occurs, but <1 day per week	34.7	31.3–38.2
1-6 days per week	20.6	16.6–24.6
7 days per week	44.7	41.0–48.5
Among All Households		
Occurs, but <1 day per week	2.6	2.3–2.9
1-6 days per week	1.5	1.2–1.9
7 days per week	3.3	3.0–3.7

Data source: CHIS 2009

TABLE 20 (for Figure 14). Homes with daily indoor smoking, by housing type, CA, CHIS 2009

Housing Type	%	95% CI
House	2.8	2.5–3.2
Multi-unit building	3.9	3.0–4.8
Mobile home	10.3	7.1–13.5

Data source: CHIS 2009

TABLE 21. Local government agencies with ordinances restricting smoking in multi-unit housing, CA, November 2011

Jurisdiction Type	Total Number of Jurisdictions	Jurisdictions with Ordinances	
		Number	%
Counties	58	10	17.2
Incorporated Cities	481	44	9.1

Data source: CTPO 2011

TABLE 22 (for Figure 15). Days occupants could stay home after disaster without shopping for more supplies, CA, CHIS 2009

Number of Days	%	95% CI
1-3 days	21.3	20.3–22.2
4-6 days	26.6	25.7–27.5
7-9 days	21.7	20.9–22.6
10 or more days	30.4	29.5–31.3

Data source: CHIS 2009

TABLE 23 (for Table 6). Regular kitchen and bathroom fan use among adults with asthma, CA, 2009

Location and Report of Fan Use	%	95% CI
Regular kitchen fan use	61.5	55.4–67.6
Regular bathroom fan use	58.1	52.0–64.1

Data source: Adult ACBS 2009

TABLE 24 (for Table 7) Adults with asthma reporting mold, cockroaches, or rodents in the home, CA, 2009

Report of Asthma Triggers in the Home	%	95% CI
Saw or smelled mold	9.8	6.5–13.1
Saw rodents (mice or rats)	8.8	5.1–12.4
Saw cockroaches	4.4	2.1–6.7
Observed at least one of these	19.0	14.4–23.6

Data source: Adult ACBS 2009

TABLE 25 (for Table 8). Age of home and report of remodel, repair, or renovation in the past 12 months, CA, 2009

Age of Home and Report of Repair	%	95% CI
All pre-1978 homes	53.6	51.5–55.7
Pre-1978 homes with recent repair among homes built pre-1978	33.6	30.5–36.7
Pre-1978 homes with recent repair among all homes in CA	13.3	11.9–14.8

Data source: CABRFSS 2009

TABLE 26 (for Figure 16). Frequency of feeling safe in one's neighborhood, by household type, CA, 2009

Frequency of Feeling Safe	%	95% CI
Among Adults in All Households		
None of the time	1.4	1.1–1.7
Some of the time	9.0	8.4–9.6
Most of the time	35.8	34.9–36.7
All of the time	53.9	52.9–54.9
Among Adults with Children (<18 years) in the Household		
None of the time	1.8	1.2–2.3
Some of the time	11.6	10.7–12.5
Most of the time	39.3	38.0–40.6
All of the time	47.4	46.1–48.7

Data source: CHIS 2009

TABLE 27. Alleged acts of denied reasonable modification/accommodation filed with the CaliforniaDepartment of Fair Employment and Housing (DFEH), FY 2009/2010

Alleged Act	Number of Claims Filed
Denied Reasonable Modification/Accommodation	280

Data source: DFEH—Alleged Acts in Violation of the Fair Employment and Housing Act

TABLE 28 (for Figure 17). ED visits for falls in the home, counts and age-adjusted rates, by age group, CA, 2009

	Falls from Stairs or Steps		Falls thru Holes or from Buildings		Slips, Trips, and Stumbles		Falls from Furniture or Commode		Unspecified Falls	
Age Group	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)
All ages	15,455	40.2	1,369	3.5	77,784	206.1	35,283	91.3	40,628	107.4
<1	324	57.9	1–4	–	591	105.5	5,435	970.4	614	109.6
1–4	1,925	88.1	184	8.4	9,625	440.4	14,005	640.7	6,439	294.6
5–17	1,408	19.3	234	3.2	8,288	115.7	4,346	61.0	5,128	71.6
18–64	8,825	36.0	871	3.6	30,021	120.1	4,667	18.6	13,210	52.7
65–84	2,304	63.0	67	1.8	19,376	535.2	4,106	113.7	9,260	256.0
85+	669	109.9	9–11	–	9,883	1,624.0	2,724	447.6	5,977	982.2

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

TABLE 29 (for Figure 18). Hospitalizations for falls in the home, counts and age-adjusted rates, by age group, CA, 2009

	Falls from Stairs or Steps		Falls thru Holes or from Buildings		Slips, Trips, and Stumbles		Falls from Furniture or Commode		Unspecified Falls	
Age Group	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)
All ages	3,278	8.9	595	1.5	25,592	70.7	5,479	14.9	21,809	60.1
<1	23	4.1	5	–	12	2.1	188	33.6	16	2.9
1–4	57	2.6	118	5.4	139	6.4	519	23.7	103	4.7
5–17	43	0.6	55	0.8	183	2.6	162	2.3	128	1.8
18–64	1,195	4.6	347	1.4	4,359	16.4	806	3.0	3,848	14.5
65–84	1,366	37.8	64	1.7	12,152	337.9	2,134	59.3	10,031	279.1
85+	594	97.6	6	–	8,747	1,437.4	1,670	274.4	7,683	1,262.5

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

TABLE 30 (for Figure 19). Deaths from falls in the home, counts and age-adjusted rates, by age group, CA, 2009

	Falls from Stairs or Steps		Falls out of Buildings		Slips, Trips, and Stumbles		Falls from Furniture	
Age Group	Count	Age Adj. Rate (per million)	Count	Age Adj. Rate (per million)	Count	Age Adj. Rate (per million)	Count	Age Adj. Rate (per million)
All ages	97	2.6	27	0.7	48	1.3	51	1.4
<1	0	–	0	–	0	–	0	–
1–4	0	–	0	–	1	–	2	–
5–17	0	–	0	–	0	–	1	–
18–64	32	1.2	13	0.5	4	–	5	–
65–84	38	10.5	10	–	25	6.9	22	6.2
85+	27	44.4	4	–	18	29.6	21	34.5

Data source: DSMF 2009

"–" denotes rates that are statistically unstable.

TABLE 31 (for Figures 20 and 21). ED visits for accidental poisonings in the home, counts and age-adjusted rates, by age group, CA, 2009

	Accidental Poisonings (all)*		Cleaning Product Poisonings		Paint and Varnish Poisonings		Fuel Product Poisonings		Pesticide Poisonings	
Age Group	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)
All ages	3,232	8.3	535	1.4	39	0.1	326	0.8	295	0.8
<1	138	24.6	25	4.5	5	–	3–6	–	12-13	2.1
1–4	1,274	58.3	266	12.2	18	0.8	84	3.8	152	7.0
5–17	334	4.6	37	0.5	1–4	–	57	0.8	16	0.2
18–64	1,262	5.2	158	0.7	10	–	162	0.7	88	0.4
65–84	199	5.4	41	1.1	1–4	–	16	0.4	25	0.7
85+	25	4.1	8	–	0	–	1–4	–	1–4	–

* Excluding poisoning by alcoholic beverages, prescription and nonprescription drugs, food/food products, CO, and secondhand tobacco smoke.

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

TABLE 32 (for Figure 22). Hospitalizations for accidental poisonings in the home, counts and age-adjusted rates, by age group, CA, 2009

	Accidental Poisonings (All)*		Cleaning Product Poisonings		Paint and Varnish Poisonings		Fuel Product Poisonings		Pesticide Poisonings	
Age Group	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)	Count	Age Adj. Rate (per 100,000)
All ages	579	1.5	46	0.1	0	–	65	0.2	22	0.1
<1	10	–	1–4	–	0	–	1–4	–	0	–
1–4	92	4.2	17	0.8	0	–	21	1.0	1–4	–
5–17	52	0.7	1–4	–	0	–	1–4	–	1–4	–
18–64	336	1.4	13	0.1	0	–	26	0.1	15	0.1
65–84	75	2.1	10	–	0	–	10	–	5	–
85+	14	2.3	1–4	–	0	–	1–4	–	0	–

* Excluding poisoning by alcoholic beverages, prescription and nonprescription drugs, food/food products, CO, and secondhand tobacco smoke.

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

TABLE 33 (for Figures 23, 26, and 28). Fatal non-fall unintentional injuries in the home, counts and age-adjusted rates, by cause and age group, CA, 2009

Age Group	Accidental Poisonings (all)*		Drownings		Fire-Related Injuries		Excessive Hot Weather Injuries		Excessive Cold Weather Injuries		Hot Tap Water Injuries		Injuries From Other Hot Objects	
	#	Age Adj. Rate (per million)	#	Age Adj. Rate (per million)	#	Age Adj. Rate (per million)	#	Age Adj. Rate (per million)	#	Age Adj. Rate (per million)	#	Age Adj. Rate (per million)	#	Age Adj. Rate (per million)
All ages	46	1.2	73	2.0	117	3.1	6	–	7	–	1	–	4	–
<1	0	–	0	–	0	–	0	–	1	–	0	–	0	–
1–4	1	–	12	5.5	5	–	0	–	1	–	1	–	0	–
5–17	4	–	3	–	7	–	0	–	0	–	0	–	0	–
18–64	31	1.3	23	0.9	51	2.0	1	–	2	–	0	–	1	–
65–84	8	–	23	6.6	40	10.7	2	–	3	–	0	–	3	–
85+	2	–	12	19.7	14	23.0	3	–	0	–	0	–	0	–

* Excluding poisoning by alcoholic beverages, and prescription and nonprescription drugs.

Data source: DSMF 2009

"–" denotes rates that are statistically unstable.

TABLE 34 (for Figure 24). ED visits and hospitalizations for CO poisonings in the home, counts and age-adjusted rates, by age group, CA, 2009

Age Group	ED Visits		Hospitalizations	
	Count	Age Adjusted Rate (per 100,000)	Count	Age Adjusted Rate (per 100,000)
All ages	281	0.7	48	0.1
<1	5–7	–	1–4	–
1–4	21	1.0	1–4	–
5–17	56	0.8	1–4	–
18–64	176	0.7	31	0.1
65–84	20	0.5	8	–
85+	1–4	–	1–4	–

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

TABLE 35 (for Figure 25). ED visits and hospitalizations for drownings in the home, counts and age-adjusted rates, by age group, CA, 2009

Age Group	ED Visits		Hospitalizations	
	Count	Age Adjusted Rate (per 100,000)	Count	Age Adjusted Rate (per 100,000)
All ages	308	0.8	226	0.6
<1	26	4.6	20	3.6
1–4	224	10.3	148	6.8
5–17	35	0.5	23	0.3
18–64	14	0.1	24	0.1
65–84	5–8	–	6	–
85+	1–4	–	5	–

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

TABLE 36 (for Figure 27). ED visits and hospitalizations for fire-related injuries in the home, counts and age-adjusted rates, by age group, CA, 2009

Age Group	ED Visits		Hospitalizations	
	Count	Age Adjusted Rate (per 100,000)	Count	Age Adjusted Rate (per 100,000)
All ages	671	1.7	227	0.6
<1	16	2.9	1–4	–
1–4	25	1.1	13	0.6
5–17	77	1.1	25	0.4
18–64	455	1.9	118	0.5
65–84	81	2.2	57	1.6
85+	17	2.8	10–11	–

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

TABLE 37 (for Figure 29). ED visits and hospitalizations for thermal stress in the home, counts and age-adjusted rates, by age group, CA, 2009

Age Group	Excessive Hot Weather Injuries				Excessive Cold Weather Injuries			
	ED Visits		Hospitalizations		ED Visits		Hospitalizations	
	Count	Age Adjusted Rate (per 100,000)	Count	Age Adjusted Rate (per 100,000)	Count	Age Adjusted Rate (per 100,000)	Count	Age Adjusted Rate (per 100,000)
All ages	342	0.9	135	0.4	32	0.1	104	0.3
<1	1–4	–	0	–	0	–	1–4	–
1–4	7–10	–	0	–	1–4	–	0	–
5–17	41	0.6	1–4	–	1–4	–	0	–
18–64	180	0.7	50	0.2	11	–	28	0.1
65–84	82	2.2	55	1.5	9	–	48	1.3
85+	28	4.6	26–29	4.8	8	–	24–27	4.4

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

TABLE 38 (for Figure 30). ED visits and hospitalizations for hot tap water injuries in the home, counts and age-adjusted rates, by age group, CA, 2009

Age Group	ED Visits		Hospitalizations	
	Count	Age Adjusted Rate (per 100,000)	Count	Age Adjusted Rate (per 100,000)
All ages	1,292	3.3	248	0.6
<1	60	10.7	24	4.3
1–4	339	15.5	84	3.8
5–17	208	2.9	14	0.2
18–64	579	2.4	85	0.3
65–84	85	2.3	34	0.9
85+	21	3.5	7	–

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable..

TABLE 39 (for Figure 31). ED visits and hospitalizations for hot object injuries in the home, counts and age-adjusted rates, by age group, CA, 2009

Age Group	ED Visits		Hospitalizations	
	Count	Age Adjusted Rate (per 100,000)	Count	Age Adjusted Rate (per 100,000)
All ages	4,096	10.5	387	1.0
<1	321	57.3	20	3.6
1–4	1,500	68.6	79	3.6
5–17	511	7.1	17	0.2
18–64	1,592	6.6	162	0.6
65–84	156	4.2	77	2.1
85+	16	2.6	32	5.3

Data source: OSHPD 2009

TABLE 40 (for Figure 32). ED visits and hospitalizations for injuries from exposure to electrical current in wiring and appliances in the home, counts and age-adjusted rates, by age group, CA, 2009

Age Group	ED Visits		Hospitalizations	
	Count	Age Adjusted Rate (per 100,000)	Count	Age Adjusted Rate (per 100,000)
All ages	286	0.7	33	0.1
<1	5–6	–	0	–
1–4	79	3.6	10	–
5–17	63	0.9	6	–
18–64	131	0.5	12	0.1
65–84	5–6	–	5	–
85+	1–4	–	0	–

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

TABLE 41 (for Figure 33). ED visits and hospitalizations for secondhand smoke illness in the home, counts and age-adjusted rates, by age group, CA, 2009

Age Group	ED Visits		Hospitalizations	
	Count	Age Adjusted Rate (per 100,000)	Count	Age Adjusted Rate (per 100,000)
All ages	614	1.6	351	1.0
<1	95	17.0	17	3.0
1–4	226	10.3	32	1.5
5–17	218	3.1	20	0.3
18–64	61	0.3	75	0.3
65–84	12–13	0.4	143	3.9
85+	1–4	–	64	10.5

Data source: OSHPD 2009

"–" denotes rates that are statistically unstable.

Appendix II: Data Sets, Variable Specifications, and Limitations

Core Data Sets

Additional Data Sets

American Community Survey (ACS)

Overall Description

The ACS is a survey conducted by the U.S. Census Bureau, and is designed to understand the characteristics of the U.S. population, replacing the decennial census long-form sample. The ACS is a population-based survey of the non-homeless U.S. population conducted every year; its first year of full implementation was 2005. ACS provides information on the demographic, social, economic, and housing characteristics of communities in the U.S.

The ACS sample is selected from all counties and county-equivalents in the U.S. The Census Bureau uses its Master Address File, which contains addresses for about 95% of all mailable residences in the U.S., to draw two separate samples for the ACS: housing unit (HU) addresses and addresses for persons in group quarters (GQ) facilities (military barracks, college dormitories, nursing homes, and correctional facilities). GQ data collection began in 2006. No housing data are collected for GQs.

Each year, approximately 3 million HU addresses in the U.S. are selected for the ACS sample, representing approximately 2.5% of the U.S. HUs. There are two phases of HU address sampling, and sampling occurs throughout the year with 12 independent monthly samples. In the first phase, paper questionnaires are mailed out to selected addresses; if no response is received from the mailing, a Computer-Assisted Telephone Interview (CATI) is attempted. In the second phase of sampling, a sample of addresses for which neither a mail questionnaire nor a telephone interview has been completed are selected for Computer-Assisted Personal Interviewing (CAPI). In 2007, 47% of attempted surveys were completed by mail, 10% were completed by CATI, 41% were completed by CAPI and only 2% of attempted surveys were not completed.

ACS data are weighted to reflect the U.S. resident population using a ratio estimation procedure that assigns two sets of weights: a weight to each sample person record and a weight to each sample housing unit record. Missing data are imputed utilizing either an assignment approach (when possible) or a hot deck allocation approach.

The ACS attempts to survey all people residing in U.S. housing units or group quarters, regardless of legal status or citizenship. The paper questionnaire is available in English and Spanish, and the Language Assistance Program of the ACS allows for translation and other forms of assistance for the CATI and CAPI survey modes in the following languages: English, Spanish, Portuguese, Chinese, Russian, French, Polish, Korean, Vietnamese, German, Japanese, Arabic, Haitian Creole, Italian, Navajo, Tagalog, Greek, and Urdu.

Relevant Variables

Thirteen ACS variables were utilized in this report. All thirteen reflect housing unit or household level values.

1. **Number of Housing Units:** A housing unit (HU) may be a house, an apartment, a mobile home or trailer, a group of rooms, or a single room that is occupied (or, if vacant, intended for occupancy) as separate living quarters. Separate living quarters are those in which the occupants live separately from any other individuals in the building and which have direct access from outside the building or through a common hall. Boats, recreational vehicles (RVs), vans, tents, railroad cars, and the like are included only if they are occupied as someone's current place of residence. The data presented in the report are derived from table B25001.
2. **Number of Occupied Housing Units:** All HUs are assigned a status of either occupied or vacant. An HU is classified as occupied if it is the current place of residence of the person or group of people living in it at the time of interview, or if the occupants are only temporarily absent from the residence for two months or less, that is, away on vacation or a business trip. If all the people staying in the unit at the time of the interview are staying there for two months or less and have a more permanent residence elsewhere, the unit is considered to be temporarily occupied, but is still classified as "vacant." New units not yet occupied are classified as vacant HUs if construction has reached a point where all exterior windows and doors are installed and final usable floors are in place. Vacant units are excluded from the housing inventory if they are open to the elements, that is, the roof, walls, windows, and/or doors no longer protect the interior from the elements. Also, excluded are vacant units with a sign that they are condemned or they are to be demolished. The data presented in the report are derived from table B25002.
3. **Households with People Under 18 Years:** By using the household roster (a list of all current residents of the household) and age/date of birth information, data are collected on the numbers of related and non-related people under 18 years living in the household. The data presented in the report are derived from table B11005.

Relevant Variables (Continued)

4. **Year Structure Built:** This question determines when the building in which the household is located was first constructed, not when it was remodeled, added to, or converted. For mobile homes, houseboats, and recreational vehicles, the manufacturer's model year is taken as the year the unit was built. The data for the year in which the structure was built were obtained from Housing Question 2, which asks, "About when was this building first built?" The possible response categories are: "1939 or earlier," "1940 to 1949," "1950 to 1959," "1960 to 1969," "1970 to 1979," "1980 to 1989," "1990 to 1999," and "2000 or later – specify year". In determining the year a structure was built, all HUs, both occupied and vacant, are counted. The data presented in the report are derived from table B25034.
5. **Units in Structure:** This question determines the number of HUs in a structure. A structure is a separate building that either has open spaces on all sides, or is separated from other structures by dividing walls that extend from ground to roof. The data for the number of units in the structure were obtained from Housing Question 1, which asks of the resident's building, "Which best describes this building?" The possible response categories are: "A mobile home," "A one-family house detached from any other house," "A one-family house attached to one or more houses," "A building with 2 apartments," "A building with 3 or 4 apartments," "A building with 5 to 9 apartments," "A building with 10 to 19 apartments," "A building with 20 to 49 apartments," "A building with 50 or more apartments," and "Boat, RV, van, etc.".
6. **Tenure:** All occupied HUs are divided into two categories—owner-occupied or renter-occupied. An HU is owner-occupied if the owner or co-owner lives in the unit, even if it is mortgaged or not fully paid for. All occupied HUs that are not owner-occupied, whether they are rented for cash rent or occupied without payment of rent, are classified as renter-occupied. The data on tenure were obtained from Housing Question 14, which asks, "Is this house, apartment, or mobile home—" The possible response categories are: "Owned by you or someone in this household with a mortgage or loan? Include home equity loans," "Owned by you or someone in this household free and clear (without a mortgage or a loan)?," "Rented?," and "Occupied without payment of rent?" In determining tenure, only occupied units are counted. The data presented in the report are derived from tables B25003, B25032, B25106, B25049, B25016, B25053, B25123 and B25014.

Relevant Variables (Continued)

7. **Household Income:** Household income is the sum, across all household members, of the amounts reported in the past 12 months for wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income, or income from estates and trusts; social security or railroad retirement income; Supplemental Security Income; public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income. The estimates are inflation-adjusted using the Consumer Price Index. Household income is used in conjunction with variables on housing costs (gross rent or owner costs, below) to generate housing cost burden measures (housing costs as a percentage of household income). The data presented in the report are derived from tables B25106 and B25123.
8. **Gross Rent:** Gross rent is the contract rent (the monthly rent regardless of any furnishings, utilities, fees, meals, or services that may be included) plus the estimated average monthly cost of utilities and fuels, if these are paid by the renter. Gross rent is used in conjunction with household income (above) to generate housing cost burden measures for renters (gross rent as a percentage of household income). The data presented in the report are derived from tables B25106 and B25123.
9. **Selected Monthly Owner Costs:** Selected monthly owner costs are the sum of payments for mortgages, deeds of trust, contracts to purchase, or similar debts on the property; real estate taxes; fire, hazard, and flood insurance; utilities (electric, gas, water, and sewer); and fuels (such as oil, coal, kerosene, or wood). These costs also encompass monthly condominium fees or mobile home costs. Selected monthly owner costs are used in conjunction with household income (above) to generate housing cost burden measures for owners (selected monthly owner costs as a percentage of household income). The data presented in the report are derived from tables B25106 and B25123.
10. **Complete Plumbing Facilities:** Complete plumbing facilities include: (a) hot and cold running water, (b) a flush toilet, and (c) a bathtub or shower. All three facilities must be located inside the house, apartment, or mobile home, but not necessarily in the same room. HUs are classified as lacking complete plumbing facilities when any of the three facilities is not present. The data for complete plumbing facilities were obtained from Housing Questions 8 a–c. In determining complete plumbing facilities, all HUs, both occupied and vacant, are counted. The data presented in the report are derived from tables B25047, B25048, B25049, B25016 and B25123.

Relevant Variables (Continued)

11. **Complete Kitchen Facilities:** Complete kitchen facilities include: (a) a sink with a faucet, (b) a stove or range, and (c) a refrigerator. All kitchen facilities must be located in the house, apartment, or mobile home, but not necessarily in the same room. HUs are classified as lacking complete kitchen facilities when any of the three facilities is not present. An HU having only a microwave or portable heating equipment such as a hot plate or camping stove should not be considered as having complete kitchen facilities. An icebox is not considered to be a refrigerator. The data for complete kitchen facilities were obtained from Housing Questions 8 d–f. In determining complete kitchen facilities, all HUs, both occupied and vacant, are counted. The data presented in the report are derived from tables B25051, B25052, B25053 and B25123.
12. **Occupants per Room:** By using the household roster (a list of all current residents of the household) and the number of rooms in the HU, information is calculated on the number of occupants per room. For this calculation, rooms are defined as those that are used for living purposes; living rooms, dining rooms, kitchens, bedrooms, finished recreation rooms, enclosed porches suitable for year-round use, and lodger's rooms are included. Excluded are strip or Pullman kitchens, bathrooms, closets, open porches, balconies, halls or foyers, half rooms, utility rooms, unfinished attics or basements, or other unfinished spaces used for storage. A partially divided room is considered a separate room only if there is a partition from floor to ceiling, but not if the partition consists solely of shelves or cabinets. The data for the number of rooms were obtained from Housing Questions 7 a and b. In determining occupants per room, only occupied units are counted. The data presented in the report are derived from tables B25014, B25016 and B25123.
13. **House Heating Fuel:** Data on house heating fuel show the type of fuel used to heat the HU. The data on house heating fuel were obtained from Housing Question 10, which asks, "Which FUEL is used MOST for heating this house, apartment, or mobile home?" The possible response categories are: "Gas: from underground pipes serving the neighborhood," "Gas: bottled, tank, or LP," "Electricity," "Fuel oil, kerosene, etc.," "Coal or coke," "Wood," "Solar energy," "Other fuel" and "No fuel used." In determining house heating fuel, only occupied units are counted. The data presented in the report are derived from tables B25040.

Potential Covariates	Note: not all covariates below are available to be crossed with all variables listed above. Race/ethnicity, poverty status, educational attainment, ages of householders, household type, grandparents living with own grandchildren, responsibility for own grandchildren, age of grandparents, geographical mobility, year householder moved into unit, mortgage status, dollar value of owner-occupied units, telephone service available, vehicle ownership, meals included in rent.
Years Available for Analysis	2005–2011
Frequency of Collection	Annual
Future Years Expected	All
Geographies Available	This is a national data source. Single-year estimates are available for all geographic entities with populations of at least 65,000 (including all states); single-year estimates are based on data collected during the 12 months of the most recent calendar year. Three-year estimates are available for all geographic entities with populations of at least 20,000 (including all states); 3-year estimates are based on data collected during the 36 months of the 3 most recent calendar years. Five-year estimates are available for all statistical, legal, and administrative entities, including states, counties, census tracts, block groups, zip codes, and small incorporated places, such as cities and towns; 5-year estimates are based on data collected during the 60 months of the 5 most recent calendar years.
Limitations	All responses are based on self-report, and are therefore subject to recall bias and social-desirability bias. The multi-mode nature of the survey (mail, CATI and CAPI) allows for the possibility that there are systematic differences in the way a respondent would answer the same questions if responding by a different mode. No housing data are collected for group quarters, so persons living in group quarters are not included in the data presented in this report (results may not be representative of their housing conditions). Multi-year estimates cover a long period of time and represent the average characteristic being measured over the entire period; comparisons across geographies must be made across identical time periods, and when examining trends, users should attempt to compare multi-year estimates with non-overlapping time periods (e.g., 2005–2007 and 2008–2010).

Limitations (continued)	Analysts are restricted in the analyses they can conduct because the full ACS data set is not available for download to the public for analysis with statistical software. Instead, analysts can take one of two approaches: (1) use American Fact Finder (http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml) to generate pre-selected data tables (generated using the full data set), which can be further manipulated (as was done in this report), or (2) download the Public Use Microdata Sample (PUMS), which gives users access to raw data for a 1% sample of the ACS sample population. PUMS can only generate estimates at the state level and the Public Use Microdata Area (PUMA) level, which consists of county subsections for high-population counties and multiple counties combined for low-population counties. Data generated from PUMS will also have wider confidence intervals. The only alternative to these two approaches is to request custom tabulations from the U.S. Census Bureau; these custom tabulations start at a cost of $3000 and take at least 8 weeks to process.

California Health Interview Survey (CHIS)

Overall Description

CHIS is conducted by the UCLA Center for Health Policy Research (CHPR) in collaboration with the California Department of Public Health, the Department of Health Care Services, and the Public Health Institute. CHIS is a population-based survey of California's non-institutionalized population conducted every other year since 2001. CHIS is the largest health survey conducted in any state and one of the largest health surveys in the nation. The sample is designed to provide estimates for large and medium-sized counties in the state and for groups of the smallest counties (based on population size), as well as to provide statewide estimates for California's overall population, its major racial and ethnic groups, and several ethnic subgroups.

The 2009 CHIS was a population-based telephone survey using random-digit-dial samples of landline and cellphone numbers. All data were collected using a Computer-Assisted Telephone Interview (CATI) system. CHPR works with Westat to administer CHIS in five languages: English, Spanish, Chinese (Mandarin and Cantonese dialects), Vietnamese, and Korean (2000 Census data identify these as the languages that cover the largest number of California residents that either do not speak English or do not speak English well enough to otherwise participate). Adults (18+) and adolescents (12–17) are interviewed directly; for children (<12), the adult most knowledgeable about the child's health is interviewed as a proxy.

CHIS data are weighted by CHPR and Westat to reflect the non-institutionalized population of California, and each sampling stratum and missing data are imputed utilizing a hot deck imputation methodology.

The sample size and response rate vary annually—in 2009, the sample sizes were 47,600 adults, 3,400 adolescents, and 9,000 children. The response rate was 19.7% for the landline portion of the survey and was 11.1% for the cellphone portion of the survey.

A multi-stage stratified sampling design is used to generate a sample of telephone numbers from one of several sampling frames. The primary sampling frame is all California households with land-line telephones, but additional sampling frames in 2009 included all California cell-phone-only and "mainly cellphone" households, households associated with surnames likely to be Korean or Vietnamese, and all households with landline telephones in San Diego, Marin, and Humboldt counties (where over-sampling was performed).

Relevant Variables	Five CHIS variables were utilized in this report. All five were asked of adults only; therefore, none of the CHIS data in the report are generalizable to children or adolescents (although some variables are household-level variables). In addition to the choices listed below, "Don't know" and "Refused" are also possible response categories for all five questions. 1. **Smoking allowed in home [AC17]:** This variable has been collected since 2003. The variable is based on the question "Is smoking ever allowed inside your home?" The possible response categories are "Yes" and "No." 2. **Number of days with smoking in home [AD34]:** This variable has been collected since 2003. The variable is based on the question "On average, about how many days per week is there smoking inside your home?" and is only asked of respondents who answer "yes" to AC17. The possible response categories are the integers 0–7; if a respondent reports that there is rarely smoking or smoking <1 day/week, the response is coded as 0. 3. **Units in structure [AK23]:** This variable has been collected since 2003. The variable is based on the question "Do you live in a house, a duplex, a building with 3 or more units, or in a mobile home?" The possible response categories are "House," "Duplex," "Building with 3 or More Units" and "Mobile Home". 4. **Days of preparedness supplies [EM5]:** This variable was collected in 2009 for the first time. The variable is based on the question "For the next few questions, imagine that a major disaster, such as an earthquake, flood, or terrorist attack were to occur in your county. Think about what you have in your home right now. For how many days would you be able to stay in your home, without anyone shopping for additional supplies — 1 to 3 days, 4 to 6 days, 7 to 9 days, or 10 days or more?" The possible response categories are "1 to 3 days," "4 to 6 days," "7 to 9 days," or "10 days or more". 5. **Perceptions of neighborhood safety [AK28]:** This variable has been collected since 2005. The variable is based on the question "Do you feel safe in your neighborhood all of the time, most of the time, some of the time or none of the time?" The possible response categories are "All of the time," "Most of the time," "Some of the time," and "None of the time".
Potential Covariates	Age, gender, race, ethnicity, education, income/poverty, employment, language, marital status, sexual orientation, disability status, insurance coverage, physical and mental health conditions, health behaviors, home tenure, household size, family type.

Years Available for Analysis	2001, 2003, 2005, 2007, 2009
Frequency of Collection	Biennially
Future Years Expected	All (biennially)
Geographies Available	This data source is California-specific. These data are available for the state and all California counties (though low-population counties are grouped).
Limitations	All responses are based on self-report, and are therefore subject to recall bias and social-desirability bias. Also, low response rates generate the possibility of non-response bias. Institutionalized persons, including college students living in dormitories, and persons who do not speak English, Spanish, Chinese, Vietnamese, or Korean are not included in the sample, and results may not be representative of these populations. Uncertainty about future survey content makes it difficult to assure that variables will be collected in a consistent manner over time.

California Behavioral Risk Factor Surveillance System (CABRFSS)

Overall Description

The California BRFSS (CABRFSS) is administered by the Survey Research Group (SRG) within the California Department of Public Health. SRG administers CABRFSS as a statewide, population-based, random-digit-dial survey utilizing a Computer-Assisted Telephone Interview (CATI) system. The survey is offered in English, Spanish, Mandarin, and Cantonese to non-institutionalized adults in the state, and the data are weighted by SRG to reflect the adult population in California. The sample size and response rate vary annually (with a trending increase in sample size and decrease in response rate) — in 2009, the sample size was 17,539 adults and the CASRO response rate was 43%. A disproportionate stratified sampling (DSS) design is used to generate a sample of telephone numbers from the sampling frame, which is all California households with landline telephones. Beginning with the 2008 survey, SRG has administered surveys to a sample of cellphone only households, but these data are part of a pilot project and are not yet included in the overall dataset. The Behavioral Risk Factor Survey (BRFS) is administered in all states in the U.S., but the survey content differs somewhat among the states — the survey consists of a core, which is administered in all states, and also of optional modules and state-added questions, which are administered only in some states. The 2009 CABRFSS consisted of three sub-surveys, or tracks – some questions (including all core questions) are asked on all 3 tracks (i.e., to all survey respondents), whereas other questions are asked only on 1 track (i.e., to approximately one-third of survey respondents).

Relevant Variables

Eleven CABRFSS variables were used in this report. All eleven were asked of adults only; therefore, none of the CABRFSS data in the report are generalizable to children or adolescents (although some variables are household-level variables). In addition to the choices listed below, "Don't know" and "Refused" are also possible response categories for all eleven questions.

1. **Household smoking rules [HHRULES2]:** This variable has been collected since 1996. The variable is based on the state-added question "What are the smoking rules or restrictions in your household, if any? Would you say smoking is completely prohibited, smoking is generally prohibited with few exceptions, smoking is allowed in some rooms only, or there are no restrictions on smoking?" The possible response categories are "Smoking is completely prohibited," "Smoking is generally prohibited with few exceptions," "Smoking is allowed in some rooms only," "There are no restrictions on smoking," and "Other, specify". This question was asked on all three survey tracks.

Relevant Variables (Continued)

2. **Smoking inside the home [HHEVER]:** This variable was collected in 2000–2004, and then again in 2009. The variable is based on the state-added question "Does anyone ever smoke in your home?" The possible response categories are "Yes" and "No". In 2009, this question was asked only on Track III, which had 5,526 respondents.
3. **Ever smoker [SMOKE100]:** This variable has been collected since 1984. The variable is based on the core question "Have you smoked at least 100 cigarettes in your entire life?" The possible response categories are "Yes" and "No". This question was asked on all three survey tracks.
4. **Current smoking status [SMKEVDA2, or SMOKDAY2 in national data]:** This variable has been collected since 1996. The variable is based on the core question "Do you now smoke cigarettes every day, some days or not at all?" and is only asked of respondents who answer "Yes" to SMOKE100. The possible response categories are "Every day," "Some days," and "Not at all". Respondents reporting "Every day" or "Some days" are categorized as Current Smokers, while those reporting "Not at all" are categorized as Former Smokers. This question was also asked on all three survey tracks.
5. **Others in the household smoke [SMKELSE2]:** This variable has been collected since 1998. The variable is based on the state-added question "Does anyone else living in the household smoke cigarettes now?" The possible response categories are "Yes" and "No". This question was asked on all three survey tracks.
6. **Number of other smokers in the household [SMKELSEN]:** This variable has been collected since 1992. The variable is based on the state-added question "How many other household members currently smoke?" and since 1998, is only asked of respondents who answer "Yes" to SMKELSE2. The possible response categories are positive integers beginning at 1. This question was also asked on all three survey tracks.

Relevant Variables (Continued)

7. **Number of adults in the household [NUMADULT]:** This variable has been collected since 1995. The variable is based on the core question "How many members of your household, including yourself, are 18 years of age or older?" The possible response categories are positive integers beginning at 1. This question was asked on all three survey tracks. This variable is used in conjunction with current smoking status, others in the household smoke, and number of other smokers in the household to determine household smoker composition using the following definitions: No smokers [SMKEVDA2 = "No" and SMKELSE2 = "No"]; Some smokers [SMKEVDA2 = "Yes" and SMKELSE2 = "No" OR SMKEVDA2 = "No" and SMKELSE2 = "Yes" OR SMKEVDA2 = "No" and SMKELSEN < (NUMADULT - 1)]; and All smokers [SMKEVDA2 = "No" and SMKELSEN ≥ (NUMADULT - 1)]. While these definitions do not take into account that some of the reported smokers in the household may be children, it should provide a close approximation.
8. **Type of structure [HOUSTYPE]:** This is a variable collected for the first time in 2009. The variable is based on the state-added question "Which best describes the building you live in?" The possible response categories are "A mobile home," "A house that is not attached to any other house," "A house that is attached to one or more houses," "An apartment or condominium in a complex with 15 or fewer units," "An apartment or condominium in a complex with 16 or more units," and "An RV, Boat or other". This question was asked only on Track III, which had 5,526 respondents.
9. **Live in a pre-1978 home [LEAD1]:** This variable was collected once in 2001 and has also been collected since 2005. The variable is based on the state-added question "Thinking about the house or building you live in. Was it built before 1978?" The possible response categories are "Yes" and "No". In 2009, this question was asked only on Track II, which had 6,030 respondents.
10. **Peeling paint in a pre-1978 home [LEADCHIP]:** This variable was collected in 2005–2007, and then again in 2009. The variable is based on the state-added question "Does your home have peeling or chipped paint?" and is only asked of respondents who answer "Yes" to LEAD1. The possible response categories are "Yes" and "No". This question was also asked only on Track II in 2009.
11. **Recent construction in a pre-1978 home [LEADRENO]:** This variable has been collected since 2008, though a slight change in wording will take place beginning with the 2010 survey. The variable is based on the state-added question "In the past 12 months, has your home been remodeled, repaired or renovated?" and is only asked of respondents who answer "Yes" to LEAD1. The possible response categories are "Yes" and "No". This question was also asked only on Track II in 2009

Potential Covariates	Age, gender, race, ethnicity, education, income/poverty, employment, language, marital status, sexual orientation, disability status, insurance coverage, physical and mental health conditions, health behaviors, home tenure, children in the household, household size, lead poisoning prevention knowledge and education.
Years Available for Analysis	1984–2011
Frequency of Collection	Annually
Future Years Expected	All
Geographies Available	This data source is California-specific, although core questions are asked in all 50 states. The data are available for the state and high-population counties.
Limitations	All responses are self-reported and are subject to recall bias and social-desirability bias. All currently available datasets sample landline telephones only, so cellphone only and no-phone households, which may systematically differ from households with landline phones, introduce the possibility of bias (as noted previously, SRG does administer surveys to a sample of cellphone only households, but these are not yet included in the main data set). Response rates are low and falling, generating the possibility of non-response bias. Institutionalized adults, including college students living in dormitories and adults living in nursing homes, and adults who do not speak English, Spanish, Mandarin, or Cantonese are not included in the sample, and results may not be representative of these adults. Sample size constraints limit analysis by geographic and demographic subgroup.

BRFSS Adult Asthma Call-Back Survey (Adult ABCS)

Overall Description

Beginning in 2006, SRG began to administer the Adult ACBS. The Adult ACBS is a follow-up survey to BRFS allowing states to examine socioeconomic, environmental, and behavioral associations with asthma prevalence and control and to better understand the health care experiences of persons with asthma. All BRFS respondents reporting lifetime asthma were asked to participate in the Adult ACBS, and those who consented were called back within approximately two weeks and asked a wide range of additional questions pertaining to asthma. The 2009 Adult ACBS sample size was 707, and the CASRO response rate was 40.2%. Although Adult ACBS respondents do not themselves represent a sample, this population does derive from the DSS design of the CABRFSS where the sampling frame is all California households with landline telephones.

Relevant Variables

Five Adult ACBS variables were utilized in this report. All five were asked of adults only; therefore, none of the Adult ACBS data in the report are generalizable to children or adolescents (although these variables are household-level variables). In addition to the choices listed below, "Don't know" and "Refused" are also possible response categories for all five questions.

1. **Kitchen fan use [KITC_FAN]:** This variable has been collected since 2006. The variable is based on the question "Is an exhaust fan that vents to the outside used regularly when cooking in your kitchen?" The possible response categories are "Yes" and "No."
2. **Bathroom fan use [BATH_FAN]:** This variable has been collected since 2006. The variable is based on the question "In your bathroom, do you regularly use an exhaust fan that vents to the outside?" The possible response categories are "Yes" and "No or 'No Fan.'"
3. **Mold in the home [ENV_MOLD]:** This variable has been collected since 2006. The variable is based on the question "In the past 30 days, has anyone seen or smelled mold or a musty odor inside your home? Do not include mold on food." The possible response categories are "Yes" and "No."
4. **Cockroaches in the home [C_ROACH]:** This variable has been collected since 2006. The variable is based on the question "In the past 30 days, has anyone seen a cockroach inside your home?" The possible response categories are "Yes" and "No."
5. **Rodents in the home [C_RODENT]:** This variable has been collected since 2006. The variable is based on the question "In the past 30 days, has anyone seen mice or rats inside your home? Do not include mice or rats kept as pets." The possible response categories are "Yes" and "No."

Potential Covariates	Specific to asthma: symptom and health care utilization history, activity limitations, age of diagnosis, medication use, self-management knowledge, home environmental quality, barriers to care. Because the Adult ACBS can be linked to the CABRFSS, all potential covariates available in the CABRFSS can also be examined for the Adult ACBS population.
Years Available for Analysis	2006–2010
Frequency of Collection	Annually
Future Years Expected	2011–2013. 2014 and beyond is uncertain.
Geographies Available	As of 2009, this data source is collected in approximately 37 states (including California). These data are available at the state level only.
Limitations	All limitations of the CABRFSS described above also apply to the Adult ACBS. In addition, those CABRFSS respondents who go on to participate in the Adult ACBS may differ systematically from non-participants with respect to demographic characteristics and asthma experiences, introducing potential bias in the survey results. An important limitation of this dataset is the small annual sample size (~700). While stable estimates can be generated on a variety of measures for the population as a whole, stratified analyses of these data will require multiple years of Adult ACBS data to be combined in order to produce stable estimates. A major limitation when examining the estimates produced using the Adult ACBS is that results are only generalizable to the California population of adults who have ever been diagnosed with asthma, not to the California adult population in general. Those with asthma may differ systematically from those without asthma with regard to demographics and home environmental exposures.

Emergency Department (ED) Visits and Patient Discharge Database (PDD)

Overall Description

All non-federal hospitals in California are required to submit ED data on a quarterly basis and PPD semiannually to the Office of Statewide Health Planning and Development (OSHPD). These computerized records are compiled and include all records of ED visits and hospital discharges in California, except those from federal facilities, with an estimated coverage of 98%. The 2009 ED file contains approximately 9.9 million ED visit records. The 2009 PDD contains approximately 4 million inpatient hospitalization records. All ED visits and discharges are assigned ICD-9-CM codes to reflect the principal and up to 24 other diagnoses. Also available are Ecodes, or external cause of injury codes. The principal Ecode field indicates the nature of the injury, and any other the four supplementary Ecode fields indicate other circumstances surrounding the injury, including its place of occurrence. The Ecode E894.0 indicates that injury occurred at home (this code is not valid as a principal Ecode). Another variable available in the ED data set is expected payer for the visits, including Workers' Compensation.

Relevant Variables

Twenty ED/PDD variables (or combination variables) were utilized in this report. For all 20 (except age), the following criteria had to be met for inclusion in the report: (1) E849.0 (injury at home) had to be listed in one of the four supplementary Ecode fields, and (2) 'WC' (workers' compensation) could not be listed under the field "payer" or "pay_cat" (expected source of payment) in order to avoid counting injuries to contractors occurring in homes they were working in.

ED and hospitalization rates were calculated using the age-specific estimated population in the state (based on calculations made by the California Department of Finance) as the denominator. All rates were age-adjusted to the 2000 U.S. standard population using 19 age groups.

1. **Accidental poisonings:** these poisonings fall under the ICD-9-CM category of "Accidental Poisonings by Other Solid and Liquid Substances, Gases, and Vapors," corresponding to Ecodes E860–E869. However, within this range, several Ecodes were excluded: alcoholic beverages (E860.0 & E860.1), food and food products (E865.0–E865.3 and E865.5–E865.9), and carbon monoxide (E868.3–E868.9), as well as what are described in the ICD-9-CM coding system as secondhand smoke poisonings (E869.4). Also excluded are all Accidental Poisonings by Drugs, Medicinal Substances, and Biologicals" (E850–E858).
2. **Accidental cleaning product poisonings:** includes poisoning by detergents and shampoos, soap products, polishes, scouring powders, and disinfectants (E861.0–E861.4).

Relevant Variables (Continued)

3. **Accidental poisonings by paints and varnishes:** includes poisoning by lead paints, lacquers, oil colors, other paints, and white washes (E861.5 & E861.6).
4. **Accidental poisonings by fuel and fuel-related products:** includes poisoning by petroleum solvents, petroleum fuels and cleaners, gas distributed by pipeline, liquefied petroleum gas, other utility gas, carbon monoxide from incomplete combustion of domestic fuels, and carbon monoxide poisoning from other combustion sources (E862.0, E862.1, E867–E868.1, E868.3 and E868.8).
5. **Accidental poisonings by pesticides:** includes agricultural and horticultural chemical and pharmaceutical preparations (E863–E863.9), but excludes plant food and fertilizers.
6. **Accidental poisonings by carbon monoxide:** includes all types of carbon monoxide poisonings (E868.3–E868.9) as well as a principal diagnosis of toxic effects of carbon monoxide (986).
7. **Accidental poisonings by secondhand smoke:** includes illnesses in which it has been documented by a health care provider that secondhand tobacco smoke is the cause of the illness listed as the principal diagnosis and the patient is a non-smoker (E869.4).
8. **Falls on or from steps or stairs:** includes all falls on or from steps or stairs (E880.9) but excludes falls on an escalator or from a sidewalk curb.
9. **Falls out of building or into an opening in a surface:** includes falls from balconies, window, or building, and falls into holes in the floor (E882 & E883), but excludes falls resulting from collapse of a building or structure.
10. **Slips, trips and stumbles:** includes all falls on the same level from slips, trips or stumbles (E885).
11. **Falls from furniture:** includes falls from chairs, beds, other furniture, commodes, and toilets onto another level (E884.2, E884.4–E884.6).
12. **Other unspecified fall:** includes all accidental falls of an unspecified nature (E888).
13. **Accidents caused by conflagration in a private dwelling:** includes asphyxia or poisoning due to conflagration and burns due to uncontrolled fires in private dwellings (E890–E890.9).
14. **Accidents due to excessively hot weather conditions:** includes heat cramps, heat exhaustion, heat syncope, and heat stroke caused by excessively hot weather conditions (E900.0).
15. **Accidents due to excessively cold weather conditions:** includes frostbite, central nervous system depression, heart arrhythmias, and renal failure from hypothermia caused by excessively cold weather conditions (E901.0).

Relevant Variables (Continued)	16. **Accidental drowning in the home:** includes drowning and submersion in a bathtub, swimming pool, or quenching tank (E910.8), but excludes drowning while engaged in sport or other recreational activity, such as swimming or playing in the water. 17. **Accidents caused by hot tap water:** includes burns and scalds from hot or boiling water that flows directly from the tap (E924.2), but excludes water that has been boiled on a stove or other heating device. 18. **Accidents caused by other hot object:** includes burns from heating appliances, light bulbs, and steam pipes (E924.8), but excludes burns and scalds from hot liquids or vapors and from caustic or corrosive substances. 19. **Accidents caused by domestic wiring and appliances:** includes accidents caused by electrical current from domestic wiring and appliances (E925.0). 20. **Age:** in order to calculate age-specific rates, the age of patient at service in the ED or hospital was utilized.
Potential Covariates	Sex, race/ethnicity, unique identifying record number and date of visit. Length of stay and charge in PDD only.
Years Available for Analysis	2005–2011 (ED), 1990–2011 (PDD)
Frequency of Collection	Annually
Future Years Expected	All
Geographies Available	This data source is California-specific, although many other states have equivalent databases (variables may differ). These data are available at the following geographic levels: state, county, zip code.
Limitations	Federal hospitals are not included. Race/ethnicity data have not been validated. Records are visit-based, not person-based and require a "de-duplication" process to generate person-based counts and rates. Data are abstracted from health care provider notes for billing purposes; therefore there is the potential for incorrect diagnoses and inconsistent coding.

Death Statistical Master File (DSMF)

Overall Description

The DSMF data file contains data from all the death certificates registered in California and data from all death certificates for California residents who died out-of-state. DSMF data is collected centrally by the Office of Health Information and Research at the California Department of Public Health. Coverage is theoretically 100%. The 2009 DSMF contains approximately 235,000 death records. All deaths after 1999 have been assigned ICD-10 codes to reflect the Underlying Cause of Death (while deaths prior to 1999 have been assigned ICD-9 codes). Injuries can be listed as the Underlying Cause of Death. For all injury deaths, an environmental location of injury code is provided; in California, a code of "0" in this field indicates that the injury occurred at home.

Relevant Variables

Thirteen DSMF variables (or combination variables) were utilized in this report. For all 13 (except age), the following criterion had to be met for inclusion in the report: "0" (injury death at home) had to be listed as the environmental location of injury.

Mortality rates were calculated using the age-specific estimated population in the state (based on calculations made by the California Department of Finance) as the denominator. All rates were age-adjusted to the 2000 U.S. standard population using 19 age groups.

1. **Accidental poisonings:** these poisonings correspond to codes X46–X49 and include poisoning by any of the following: organic solvents and halogenated hydrocarbons and their vapors, other gases and vapors (including carbon monoxide, tear gas, sulfur dioxide and utility gas), pesticides, and other unspecified chemicals (including metal fumes and vapors, paints and dyes, soaps and detergents, poisonous food and plants, plant food and fertilizers, and glues and adhesives). Excluded from this category are poisoning by: all types of alcohols (X45) and legal or illegal drugs, medicaments, or biological substances (X40–X44).
2. **Accidental poisonings by pesticides:** includes fumigants, fungicides, herbicides, insecticides, rodenticides, and wood preservatives (X48), but excludes plant food and fertilizers.
3. **Falls on or from steps or stairs:** includes all falls on or from steps or stairs, including falls on an escalator, ramp, or other incline (W10).
4. **Falls out of building:** includes falls from balconies, window or roof, and falls through the floor (W13), but excludes falls from collapse of a building or structure.
5. **Slips, trips, and stumbles:** includes all falls on the same level from slips, trips, or stumbles (W01), but excludes falls involving ice or snow.

Relevant Variables (Continued)	6. **Falls from furniture:** includes falls from chairs, beds, and other furniture (W06–W08). 7. **Accidents caused by uncontrolled fires in a building:** includes burns and adverse effects of smoke inhalation due to an uncontrolled fire in a building (X00). 8. **Accidents due to excessively hot weather conditions:** includes adverse effects caused by excessive natural heat (X30). 9. **Accidents due to excessively cold weather conditions:** includes adverse effects caused by excessive natural cold (X31). 10. **Accidental drowning in the home:** includes drowning and submersion while in a bathtub or following a fall into a swimming pool (W65 & W68), but excludes drowning following a fall into a bathtub and drowning while in a swimming pool. 11. **Accidents caused by hot tap water:** includes burns and scalds from hot or boiling water that flows directly from the tap (X11), but excludes water that has been boiled on a stove or other heating device. 12. **Accidents caused by other hot object:** includes burns from hot household appliances or hot heating appliances, radiators, and pipes (X15 & X16), but excludes burns and scalds from hot liquids, vapors, or metals and from contact with hot engines or machinery. 13. **Age:** in order to calculate age-specific rates, the age of patient on the date of death was utilized.
Potential Covariates	Sex, age, detailed race/ethnicity, county of death, county of residence, education level, marital status, days between injury and death.
Years Available for Analysis	1960–2010
Frequency of Collection	Annually
Future Years Expected	All
Geographies Available	This data source is California-specific, although all states have equivalent databases (variables may differ). These data are available at the following geographic levels: state and county.

Limitations	Data availability has 12–20 month time lag. Because of changes in ICD death coding in 1999, caution must be taken when assessing mortality trends across 1999. There is potential for incorrect coding on the death certificate for cause of death and other demographic variables that could lead to inaccurate counts of deaths overall and by demographic group.

ACS/Comprehensive Housing Affordability Strategy (CHAS) Data	
Overall Description	The U.S. Department of Housing and Urban Development (HUD) periodically requests and purchases "custom tabulations" of American Community Survey (ACS) data from the U.S. Census Bureau (prior to the 2005-2007 CHAS release, CHAS data were obtained using Decennial Census, rather than ACS, data). These custom tabulations reflect data that are generally not available through standard Census products. These data are known as "CHAS" data and serve to demonstrate the extent of housing problems and housing needs, particularly for lower income households. Within CHAS data, households are considered to have incomes low enough to qualify for HUD's programs if their income is less than or equal to 30, 50, or 80 percent of the median income of the area in which they live (this median income is referred to as the HUD Area Median Family Income, or HAMFI). The "areas" used for HAMFI calculations are either Metropolitan Statistical Areas (MSAs), HUD Metro Fair Market Rent (FMR) Areas, or nonmetropolitan counties. CHAS data are available for download at: www.huduser.org/portal/datasets/cp.html.
Measure of Interest	Housing cost burden is calculated as housing costs as a percentage of household income (see ACS data description in this appendix for variable definitions). Households spending more than 30% of household income on housing costs are defined as cost burdened, while households spending more than 50% of household income on housing costs are defined as severely cost burdened. The data presented in the report are derived from CHAS table S10708.
Most Recent Available Data	2008–2010
First Date of Data Collection	Following the 1990 Census
Frequency of Collection	Ongoing
Future Years Expected	All
Geographies Available	This is a national data source. Data are available for all states, as well as most counties, Census Places, Minor Civil Divisions (MCD), and sub-county remainders. For U.S. Census Bureau definitions of these geographies, refer to: www.census.gov/geo/www/2010census/GTC_10.pdf.

Limitations	Because all CHAS data are derived from ACS data, all data limitations described for ACS data (earlier in this appendix) also apply to CHAS data. In order to generate reliable estimates for specific geographic areas, at this time, all CHAS data represent 3-year aggregate ACS data sets. Because CHAS data must be requested, processed, and posted online by HUD, data availability may not always reflect the most recent 3-year ACS data set (e.g., although a 2009–2011 ACS data set is currently available, the most recently available CHAS data are for 2008–2010).

Childhood Lead Poisoning Prevention Branch — Certification Database	
Overall Description	In California, all lead-related construction tradespeople are legally required to be certified by the California Department of Public Health to ensure that construction activities involving lead are performed in a manner that reduces or eliminates existing lead hazards and avoids creating new lead poisoning hazards. The California Lead Poisoning Prevention Branch maintains a database of all certified workers.
Measure of Interest	The number of lead-related construction certifications issued
Most Recent Available Data	2010
First Date of Data Collection	1994
Frequency of Collection	Ongoing
Future Years Expected	All
Geographies Available	State
Limitations	Not all workers engaged in construction activities involving lead are certified as required by law, and these workers are missing from this enumeration. No numbers are available on the numbers of workers engaged in these types of activities, so no rates of compliance can be calculated.

Childhood Lead Poisoning Prevention Branch — Lead Evaluation and Abatement Database (LEAD)	
Overall Description	In California, individuals or organizations can request that specific properties be evaluated by a certified inspector/assessor for the presence of lead. When such an inspection is performed, a Lead Hazard Evaluation Report is filed with the Childhood Lead Poisoning Prevention Branch at CDPH. This report details whether or not lead hazards were detected. Possible sources of lead hazards include intact or deteriorated lead-based paint, lead-contaminated dust, or lead-contaminated soil.
Measure of Interest	Percent of inspections performed with lead hazards detected
Most Recent Available Data	2006-2010 aggregated
First Date of Data Collection	1999
Frequency of Collection	Ongoing
Future Years Expected	All
Geographies Available	State, county
Limitations	Because these reports are completed only when someone requests that a property be inspected, the percentage of properties inspected that contain lead hazards is not representative of properties in the state as a whole. The Lead Hazard Evaluation Report does contain the following fields that provide additional information about the property under inspection: children living in the structure, multi-unit vs. single family building, year of building construction, and type of lead hazard detected (e.g., intact paint, deteriorated paint, soil or dust). However, these fields are not completed in a reliable fashion, and therefore further breakdown of the main measure of interest is not possible.

Environmental Protection Agency — Renovation, Repair and Painting (RRP) Certification	
Overall Description	Under the Environmental Protection Agency's (EPA) Renovation, Repair and Painting (RRP) rule, "firms performing renovation, repair, and painting projects that disturb lead-based paint in homes, child care facilities and schools built before 1978 [must] be certified by EPA and [must] use certified renovators who are trained by EPA-approved training providers to follow lead-safe work practices." EPA tracks the number of certified training providers and the number of firms and individuals who have been trained by RRP standards.
Measures of Interest	Number of EPA RRP certifications for California: 1) Training providers; 2) Renovator firms; 3) Individual renovators.
Most Recent Available Data	May 2011
First Date of Data Collection	2010
Frequency of Collection	Ongoing
Future Years Expected	All
Geographies Available	These data are collected nationally and are calculable for the country as a whole, as well as at the state level. Data are also available for each of the twelve federal EPA regions (California falls under Region IX).
Limitations	Not all firms engaged in renovation, repair, and painting projects that disturb lead-based paint in pre-1978 homes are certified as required by law, and these firms are missing from this enumeration. No numbers are available on the numbers of firms engaged in these types of activities, so no rates of compliance can be calculated.

The Center For Tobacco Policy and Organizing — Matrix of Local Smoke-Free Housing Policies	
Overall Description	Communities throughout California can elect to adopt ordinances, policies, or resolutions that in some way promote smokefree housing and address the issue of drifting secondhand smoke from neighboring units. The Center for Tobacco Policy and Organizing (CTPO) keeps track of the numbers of communities that adopt such policies. The three types of policies tracked by CTPO are: (1) City/County Ordinances that require a certain percentage of units to be declared nonsmoking, that require landlords to disclose information about smoking policies and the location of smoking and nonsmoking units, and/or that declare secondhand smoke exposure a nuisance; (2) Housing Authority/Affordable Housing Policies that require the creation of non-smoking units in low-income, senior, or other types of affordable housing; and (3) City/County Resolutions that encourage landlords to designate a certain percentage of units as nonsmoking. A recently published summary described the policies enacted by California communities can be found at: www.center4tobaccopolicy.org/CTPO/_files/_file/Matrix%20of%20Local%20Smokefree%20Housing%20Policies %20November%202011.pdf.
Measure of Interest	Number of California communities that have adopted policies restricting secondhand smoke in multi-unit housing
Most Recent Available Data	November 2011
First Date of Data Collection	June 2007
Frequency of Collection	Ongoing
Future Years Expected	All
Geographies Available	These data are collected at a community-specific level for the state of California; therefore, numbers could be generated for the state, a county, groups of counties, specific cities, or groups of cities.
Limitations	Policies enacted in different communities may differ significantly from one another in scope and application.

Department of Fair Employment and Housing — Alleged Acts in Violation of the Fair Employment and Housing Act	
Overall Description	Under the California Fair Employment and Housing Act, tenants with disabilities are permitted to request and landlords are required to then provide certain types of reasonable accommodation or modification in order to provide equal opportunity to use and enjoy a dwelling. Complaints alleging violation of these rights are filed with California Department of Fair Employment and Housing (DFEH). Complaint data are entered by DFEH staff at the time the complaint is filed, and final statistics are calculated using only those complaints that are deemed jurisdictional (within the legal purview of DFEH).
Measure of Interest	Counts of alleged acts of denied reasonable modification/accommodation
Most Recent Available Data	2009-2010
First Date of Data Collection	1980, but only 10 most recent data years are available
Frequency of Collection	Annual
Future Years Expected	All
Geographies Available	State
Limitations	Inquiries might be received by DFEH that include allegations of denied reasonable accommodation or modification, which, for case-specific reasons, are not included in the final enumeration (e.g., the allegations may be deemed non-jurisdictional or the complainant may decide not to pursue the complaint).

Appendix III: Healthy Housing Indicator Matrix

Fitting Healthy Housing Indicators into Expanded Frameworks of the U.S. Surgeon General's *Call to Action to Promote Healthy Homes* and the National Center for Healthy Housing's Seven Principles of Healthy Housing

			U.S. Surgeon General s Call to Action								National Center for Healthy Housing								
Type	Page(s)	Indicator	Background	Sited	Designed	Built	Renovated	Maintained	Policy	Occupant Activity	Background	Dry	Clean	Ventilated	Pest-Free	Contaminant-Free	Safe	Maintained	Prepared
B	7, 8	# of housing units (occupied and vacant)	•								•								
B	8	# and % units by rent/own (tenure)	•								•								
B	7, 8	# units in structure	•			•					•								
B	7	Age of building	•								•					•	•		
B	8	Children living in the home	•								•								
B	8, 9, 10, 13	Cost burden	•								•								
II	26–28	Drownings			•			•	•	•							•	•	
II	31	Electrical injuries — wiring or appliances				•	•	•		•							•	•	
I	17, 18	Emergency preparedness								•									•
II	23–25	Falls			•	•	•	•	•	•							•	•	
II	26, 28, 29	Fire-related injuries			•	•	•	•	•	•						•	•	•	
I	13	Heating method	•			•	•	•	•	•	•			•		•	•	•	
II	30, 31	Hot object injuries				•		•		•							•	•	
II	30, 31	Hot tap water injuries						•	•	•							•	•	
II	19	Kitchen and bathroom fan use			•	•	•	•	•	•		•		•	•	•			
I	13, 14	Lead — peeling paint in pre-1978 homes					•	•	•	•						•		•	
II	20	Lead — remodel in pre-1978 homes					•	•	•	•						•		•	

Note: For indicator type, B=background

Type	Page(s)	Indicator	U.S. Surgeon General's Call to Action								National Center for Healthy Housing								
			Background	Sited	Designed	Built	Renovated	Maintained	Policy	Occupant Activity	Background	Dry	Clean	Ventilated	Pest-Free	Contaminant-Free	Safe	Maintained	Prepared
I	14	Lead — RRP certifications issued (U.S. EPA)					•	•	•							•		•	
II	20, 21	Lead inspections performed					•	•	•							•		•	
I	14	Lead-related construction certifications issued (CDPH)					•	•	•							•		•	
II	21, 22	Neighborhood safety — perception		•			•	•	•	•				•	•	•	•	•	
I	11–13	Overcrowding	•					•	•	•	•	•	•	•	•	•	•	•	
II	19, 20	Pests and mold in the home		•	•	•	•	•	•	•		•	•	•	•	•	•	•	
II	22	Physical accessibility — reasonable modification/accommodation			•	•	•	•	•	•							•	•	
I	11–13	Plumbing and kitchen facilities	•		•	•	•	•	•		•		•		•		•	•	
II	26, 27	Poisonings — CO				•	•	•	•	•				•		•	•	•	
II	25, 26	Poisonings (general)					•	•	•	•				•	•	•	•	•	
I	14–17	Smoking and restrictions in the home							•	•				•		•			
II	31, 32	Smoking — ED and hosp. for SHS-related illnesses							•							•			
I	16, 17	Smoking — local SHS ordinances							•	•						•			
II	29, 30	Weather-related stress (heat/cold)			•	•	•	•	•	•				•			•	•	

Note: For indicator type, B=background


CALIFORNIA
BREATHING