

INTRODUCTION

Health and health problems result from a complex interplay of a number of forces. The most important forces that impact population health — the health outcomes of a group of individuals — are the social and economic environments in which we live, learn, work, and play. We refer to these factors collectively as the “social determinants of health.” This report, the second in a Department of Public Health series on the social determinants, follows our introductory release, “**How Social and Economic Factors Affect Health.**” Here, we explore the intersection of health and housing in Los Angeles County.

Characteristics of healthy and safe home environments include access to clean air and water; efficient transportation, including safe, walkable neighborhoods; affordable, healthy foods; violence-free places to be physically active; and affordable, secure, quality housing. Unfortunately, while tradition holds that home is a haven, where people are protected and nurtured, for many home is a health hazard where factors such as poverty, environmental contamination, and poor design combine to cause or exacerbate disease.¹ A lack of affordable, stable, and quality housing affects health in multiple ways. For example:

1. **Unaffordable housing** reduces the income that a household has available for other subsistence needs, such as nutritious food, necessary health care expenses, and transportation. Unaffordable housing also negatively impacts mental health, due to continuous stress. In addition, families that cannot afford their housing may have to move more frequently, which can lead to more psychological stress, and depression, particularly in children.² Low-income families, in particular, tend to move more often in their search for an affordable home.
2. The experiences of eviction, foreclosure, and living in others’ homes can all negatively impact mental health. Lacking a stable place to live increases levels of depression, anxiety, and hopelessness. **Housing instability** is associated with behavioral issues in children as well as increases in teen pregnancy, drug use, and depression in adolescents.^{3,4} When people become homeless, they experience physical and mental deprivation that can cause acute and chronic health problems.
3. **Housing quality**, assessed in terms of environmental exposure, also impacts health. Exposure to toxins such as lead, radon, molds, and extreme temperatures (due to lack of adequate heating and cooling systems) affects physical health, as do housing conditions that increase risk for falls or fires. Some environmental conditions, such as loud or continuous noise and inadequate lighting, affect sleep quality and mental health.⁵ Overcrowded housing has been recognized as a health risk since the 19th century, and is associated with increased risk for infectious disease, such as influenza and tuberculosis, along with chronic diseases like asthma, cardiovascular disease, and depression.^{6,7}

Housing affordability, stability, and quality are essential for health and well-being. Indeed, because housing is fundamental to maintaining an adequate standard of living, the United Nations Declaration of Human Rights codifies housing as a human right.⁸ In the absence of affordable, secure, quality housing, social inequities and health disparities are exacerbated. As part of the Los Angeles County Department of Public Health’s commitment to achieving health equity among County residents, we present this report as an introduction to the issue of housing in Los Angeles County from the public health perspective, providing a framework from which to advance our collective efforts to address this critical public health issue.



Housing Issues in Context: The Impact of the Great Recession

California was one of the states most severely impacted by the economic recession of 2007-2009, which affected millions of Los Angeles County residents. Between 2007 and 2011, incomes declined for all but the highest paid earners in the County. Low income households suffered the most, with earnings for the poorest fifth of County residents declining 12% between 2007 and 2011.⁹ Those most harmed by job loss were largely communities of color; historically disadvantaged groups experienced a disproportionate deterioration in economic conditions during the recession.¹⁰ To make matters worse, Southern California has recovered from the recession more slowly than other parts of the state.¹¹

The recession itself was triggered by a crisis in the housing market. Aggressive and sometimes predatory mortgage lending practices allowed and even encouraged borrowers to take on high-risk loans, and banks approved mortgages for customers who were unlikely to be able to make their payments. Growing evidence shows that financial institutions specifically targeted African American and Latino families for predatory and deceptive lending practices and subprime loans.^{12,13}

Many banks backed their financial securities on these problematic mortgages. When borrowers defaulted on their loans, foreclosures skyrocketed: in Los Angeles County in 2007, they increased by nearly 800% from the previous year, with African Americans and Latinos hit particularly hard.¹⁴ The nation's financial institutions fell into crisis, initiating a chain reaction, with banks putting a halt on lending, freezing credit critical to the functioning of entrepreneurs, businesses, and community agencies. The stock market plunged, home sales plummeted, construction stalled, fewer jobs were created, and with reduced consumer activity, businesses laid off employees. These losses continue to reverberate today.

The U.S. Government Promotes Healthy Housing

In June 2010, President Obama signed an Executive Order creating the **National Prevention, Health Promotion, and Public Health Council**, bringing together 17 federal agencies and offices, including the Department of Housing and Urban Development (HUD). The Council formally recognizes that where we live, learn, work and play all have an impact on our health. In June 2011, the Council issued a National Prevention Strategy that identified "Healthy and Safe Community Environments" as one of its four strategic directions. Specifically, the document calls for the design and promotion of affordable, accessible, safe and healthy housing. By providing families with greater residential stability, affordable housing can reduce stress and related adverse health outcomes. Well-constructed and well-managed affordable housing developments can reduce health problems associated with poor quality housing by limiting exposure to allergens, neurotoxins, and other dangers.



National Prevention Council, National Prevention Strategy, Washington, DC:
U.S. Department of Health and Human Services, Office of the Surgeon General, 2011.

METHODS

Data contained in this report come from two sources:

1) The **Los Angeles County Health Survey (LACHS)** is a periodic, population-based random-digit-dial telephone survey that measures the health of County residents. The survey provides updates on key health indicators and identifies emerging public health issues among adults and children residing in the County's eight Service Planning Areas (SPAs) and 26 Health Districts. The survey also allows the Department of Public Health to track health issues over time. To properly address the root causes of poor health, the survey looks beyond risk factors for individual diseases to factors in the physical and social environment that influence health, such as safety, poverty, and educational attainment. The 2011 survey collected information on a random sample of 8,036 adults and 6,013 children.

The 2011 LACHS included the following questions to assess housing affordability, housing stability, and housing quality among adults (age 18+ years):

- ◆ During the past 2 years, was there any month when you/your family delayed paying or were not able to pay your mortgage or rent? (This is a measure of **affordable housing**.)
- ◆ Thinking back over the past 5 years, was there ever a time when you were homeless or did not have your own place to live or sleep? (This is a measure of **stable housing**.)
- ◆ Which of the following describes your current home or apartment? (This is a measure of **quality housing**.)
 - It has mold or growth that concerns you.
 - It has pests such as cockroaches or mice.
 - It was built before 1978 and has peeling or chipping paint.
 - It has heat or hot water when you need it.

For more information about LACHS methodology, please see:

www.publichealth.lacounty.gov/ha/hasurveyintro.htm.

2) The **American Community Survey (ACS)** is an ongoing version of the U.S. Census. Five-year estimates from the ACS provide more reliable data for smaller geographic regions, by combining 60 months of data into one estimate.

Five-year estimates (2008-2012) of the ACS provided the following data:

- ◆ Percent of people who spend 30% or more of their income on monthly housing costs, gross rent or mortgage. (This is a measure of **affordable housing**.)

For more information about the ACS methodology, please see: www.census.gov/acs/www/.

HOUSING AFFORDABILITY

What makes housing affordable? According to the United States Department of Housing and Urban Development, housing is considered affordable if the people living there pay less than 30% of their income on rent or mortgage payments. Households who pay over this amount are considered to have a high housing burden, as it is more likely they will not have enough money to meet other needs such as food and medical care. Housing burdens across the U.S. have increased during the previous decade, particularly for low-income people.¹⁵

Data from the 5-year estimates (2008-2012) of the ACS reveal that 52.1% of households in Los Angeles County had high housing burden.¹⁶ For home owners, 45.3% reported high housing burden, compared to 58.5% of renters. In Los Angeles County, a median income household can afford only about 24% of homes available for purchase.¹⁷ Based on this measure, Los Angeles County is the nation's third most expensive housing market. The County has the highest percentage of renters of the twenty largest metropolitan areas in the nation, with 52% of households renting.¹⁸

Affordable rental housing is out of reach for many families in the County. According to the National Low Income Housing Coalition, a worker in Los Angeles County needs to earn \$26.88 per hour to afford rent on a 2 bedroom apartment. Meanwhile, the average renter earns only \$18.53 per hour, while minimum wage workers make a mere \$9.00 per hour.¹⁹

The Los Angeles County Health Survey estimated housing affordability by asking adults, "During the past two years, was there any month when you or your family delayed paying or were not able to pay your mortgage or rent?"

- Overall, 17.2% (or an estimated 1.2 million people) reported they were unable to pay or delayed paying their mortgage or rent in the past 2 years (Table 1).
- Significantly more African Americans (26.2%) and Latinos (21.3%) reported this issue than Asians/Pacific Islanders (13.5%) or whites (10.9%).
- Households with lower incomes were significantly more impacted: 26.8% of those living below the federal poverty level (FPL) and 23.2% of those with household incomes of 100-199% FPL reported problems affording housing. Higher income households were also affected: 15.7% of those with incomes 200-299% FPL and 8.5% of those at or above 300% FPL also reported that housing affordability was an issue.
- Having at least a college degree appeared to provide some protection against housing unaffordability, with significantly fewer college graduates reporting problems than those with less formal education (9.4% compared to 20.1%).
- Nearly one-quarter (23.0%) of adults with a disability reported housing affordability was an issue, significantly more than the 15.8% of adults without a disability.
- A significantly higher percentage of unemployed respondents (24.9%) reported housing affordability was an issue compared to those who were employed (17.0%) or not in the labor force (those who were retired, students, homemakers, unemployed and not looking for work, or not working due to a disability) (13.8%).
- Housing unaffordability varied greatly across the County, with only 7.5% of residents in the West SPA reporting difficulty paying mortgage or rent, compared to 28.0% in the Antelope Valley SPA.

Table 1: Percent of Adults (18+ years old) Who Were Unable to Afford or Delayed Paying Their Mortgage or Rent in the Past Two Years, LACHS 2011.

	Percent (%)	95% CI	Estimated #
Los Angeles County	17.2	16.0 - 18.4	1,222,000
Gender			
Male	16.6	14.7 - 18.5	572,000
Female	17.7	16.2 - 19.3	650,000
Age Group			
18-24	13.9	10.5 - 17.3	134,000
25-29	17.0	12.7 - 21.3	125,000
30-39	23.1	19.9 - 26.4	323,000
40-49	19.9	17.2 - 22.6	274,000
50-59	20.1	17.2 - 23.0	239,000
60-64	13.0	9.6 - 16.4	57,000
65 or over	6.9	4.8 - 9.0	70,000
Race/Ethnicity			
Latino	21.3	19.2 - 23.3	659,000
White	10.9	9.2 - 12.5	245,000
African American	26.2	21.6 - 30.7	159,000
Asian/Pacific Islander	13.5	10.2 - 16.8	148,000
Education			
Less than high school	22.7	19.7 - 25.6	373,000
High school	18.4	15.6 - 21.3	290,000
Some college or trade school	19.2	16.8 - 21.6	380,000
College or post graduate degree	9.4	7.9 - 10.8	176,000
Household Income [§]			
0-99% FPL	26.8	23.7 - 29.9	454,000
100-199% FPL	23.2	20.3 - 26.1	381,000
200-299% FPL	15.7	12.5 - 18.8	147,000
300% FPL or above	8.5	7.2 - 9.8	241,000
Disability			
Yes	23.0	20.0 - 25.9	318,000
No	15.8	14.4 - 17.1	900,000
Service Planning Area			
Antelope Valley	28.0	21.8 - 34.3	71,000
San Fernando	16.3	13.7 - 18.8	255,000
San Gabriel	15.2	12.4 - 17.9	191,000
Metro	18.2	14.7 - 21.7	154,000
West	7.5	4.5 - 10.4	38,000
South	22.5	18.4 - 26.7	151,000
East	19.2	15.5 - 22.9	174,000
South Bay	17.1	13.8 - 20.5	189,000

[§] Based on U.S. Census Bureau, Housing and Household Economic Statistics Division, 2009 Federal Poverty Level (FPL) thresholds which for a family of four (2 adults, 2 dependents) correspond to annual incomes of \$20,444 (100% FPL), \$40,888 (200% FPL), and \$61,332 (300% FPL).

Competing Expenses

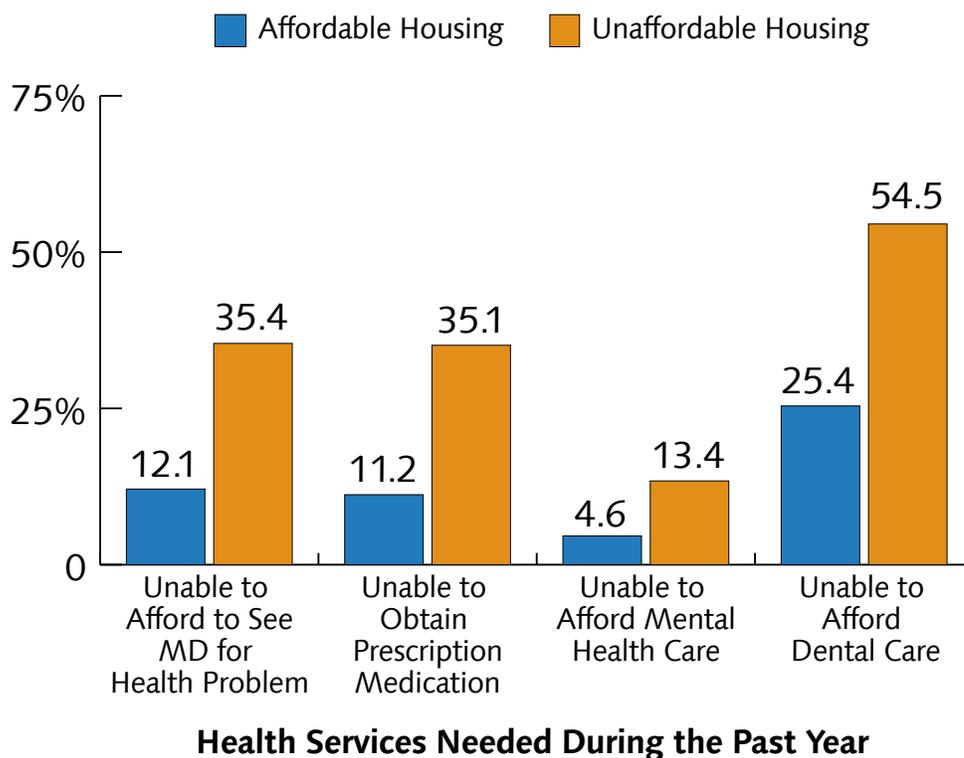
High housing costs may reduce an individual's or a family's capacity to meet other essential needs in their lives, including their ability to pay for health care expenses or purchase nutritious, quality food. Research demonstrates that these tradeoffs threaten the health of adults and children, resulting in poorer overall health status.²⁰

The LACHS examined the ability of Los Angeles County adults to meet their subsistence needs by inquiring about their ability to access health services including medical care, prescription drugs, mental health care, and dental care. The survey also measured the ability to access food through a series of questions that assess food security, which is defined by the U.S. government as the ability of people to access, at all times, enough food to live an active, healthy life.^{21,22}

◆ Health Care Affordability

- Compared to those who did not report difficulty paying mortgage or rent on time, adults who had difficulty paying for housing faced significantly increased difficulty affording health services.
- Compared to those who did not experience problems with housing unaffordability, approximately three times as many adults who reported a problem with housing affordability also were unable to afford to see a doctor for a health problem, purchase their prescription medication, or obtain mental health care. Over twice as many reported not being able to afford dental care, including check-ups (Figure 1).

Figure 1: Percent of Adults Who Were Unable to Afford Access to Various Health Services by Affordable Housing, LACHS 2011

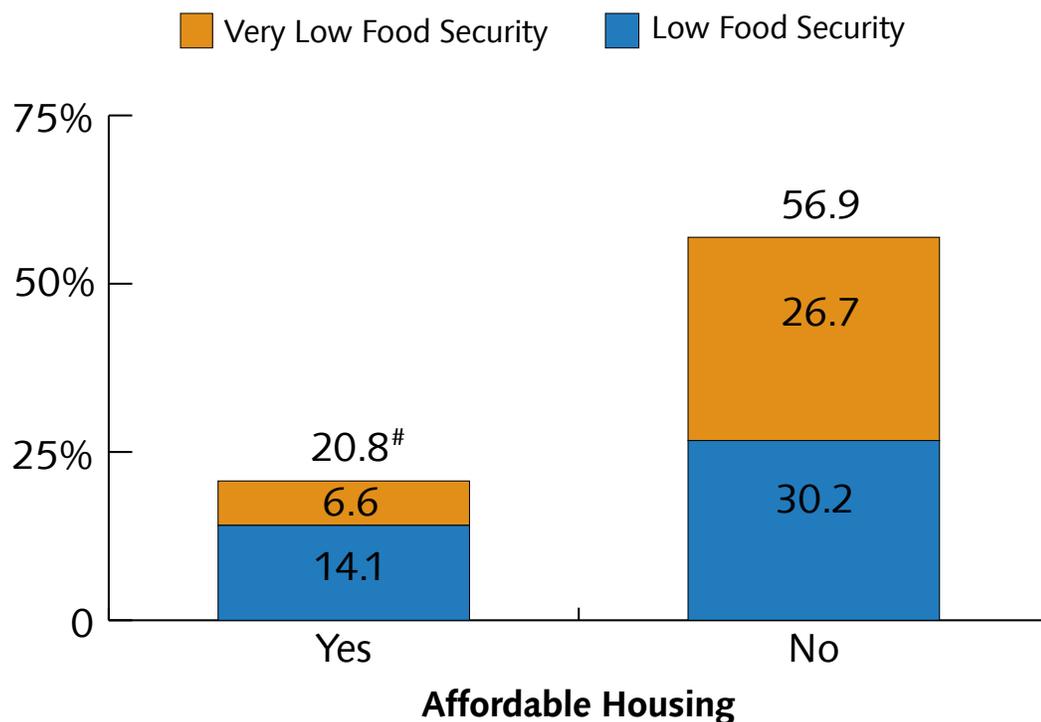


◆ Food Insecurity

Food Insecurity refers to the inability to purchase enough food for adequate nutrition, and is reported here only for adults with household incomes <300% FPL. Food insecurity consists of low food security, defined as reduced quality, variety, or desirability of diet, and very low food security, which involves disrupted eating patterns and reduced food intake.^{21,22}

- Compared to those who did not experience housing unaffordability, adults with incomes <300% FPL who reported trouble paying their mortgage or rent during the last two years were over two and a half times more likely to be food insecure (56.9% vs. 20.8%) (Figure 2).
- Furthermore, adults with incomes <300% FPL who reported difficulty affording housing were over twice as likely to have low food security (30.2% vs. 14.1%) and over four times as likely to have very low food insecurity (26.7% vs. 6.6%) compared to those who did not report difficulties paying their mortgage or rent.

Figure 2: Percent of Adults <300% FPL with Food Insecurity (Low and Very Low) by Affordable Housing, LACHS 2011



[#] Total prevalence is not additive due to rounding.

Best Practice: Tenant-Based Rental Assistance

The **Community Preventive Services Task Force** recommends **tenant-based rental assistance programs** as an intervention that expands affordable housing options to low-income families. These programs are supported by public housing funds and subsidize the cost of housing by allotting rental vouchers to low-income households. Such subsidies allow participants a greater range of rental options, reducing the likelihood of living in high-poverty neighborhoods. Tenant-based rental assistance programs have demonstrated reductions in violent victimization of household members and improved neighborhood safety.

HOUSING INSTABILITY AND HOMELESSNESS

Poor health is a major cause of homelessness, and homelessness itself leads to poor health. Acute and chronic mental health problems, other chronic illnesses, and disability can lead to homelessness when stable housing becomes too difficult to maintain without assistance.²³ Homelessness can exacerbate chronic physical and mental health conditions or contribute to debilitating substance abuse problems.²⁴ Environmental exposures, communicable disease exposures, lack of access to preventive care and medical treatment, and lack of access to proper nutrition and sleep all contribute to high rates of poor health among homeless persons. Strikingly, the average life expectancy of homeless people is estimated to be almost 30 years shorter than the general population.²⁵

In 2013, the Los Angeles County Homeless Services Authority (LAHSA) biannual count of homeless people estimated that 57,737 people were homeless in the County.²⁶ While the Los Angeles County Health Survey cannot directly count homeless people as LAHSA does, we assessed the burden of homelessness Countywide by asking respondents if there was ever a time during the previous 5 years when they were homeless or did not have their own place to live or sleep. This method allows for the inclusion of the “hidden homeless,” those who reside not on the street or in shelters during periods of housing instability, but with family, friends, or in hotels/motels.

Single Adult Model

The Single Adult Model (SAM) is the basis for a multi-departmental collaborative among the **Los Angeles County Departments of Public Health (DPH), Health Services (DHS), Mental Health (DMH), and Public Social Services (DPSS)**, and the **Los Angeles County Community Development Commission** to create a County infrastructure to reduce homelessness among single adults in the County. The goal is to permanently house and provide supportive services to homeless single adults who have physical and/or mental health conditions, and who may also have a co-occurring substance use disorder. SAM participants will be identified through DPSS General Relief participation or by multidisciplinary integrated teams that conduct street and shelter-based outreach and engagement.

Table 2: Percent of Adults (18+ years old) Who Reported Being Homeless or Not Having Their Own Place to Live or Sleep in the Past 5 Years, LACHS 2011

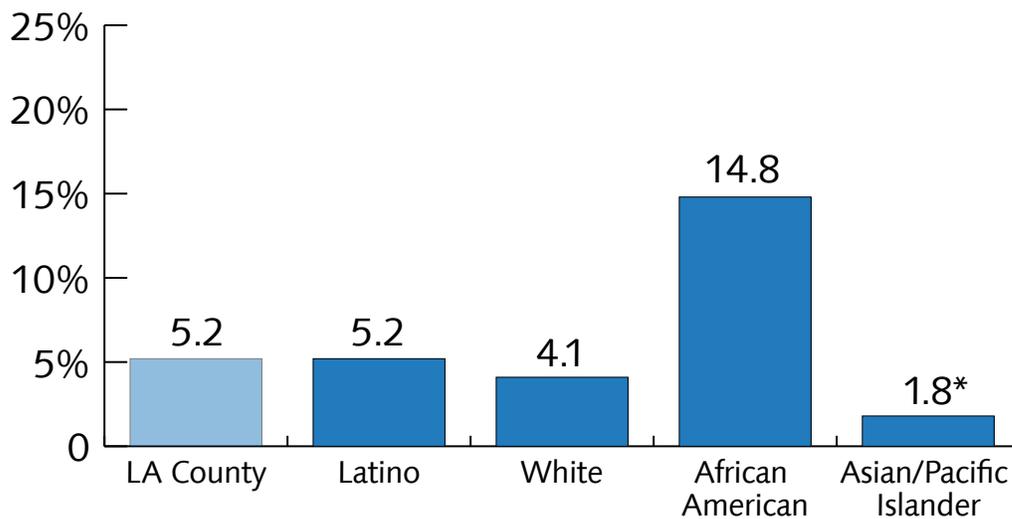
	Percent (%)	95% CI	Estimated #
Los Angeles County	5.2	4.4 - 5.9	373,000
Gender			
Male	5.3	4.1 - 6.5	186,000
Female	5.0	4.1 - 6.0	187,000
Age Group			
18-24	6.4	3.9 - 8.8	63,000
25-29	8.4	5.0 - 11.7	62,000
30-39	7.5	5.4 - 9.6	106,000
40-49	4.7	3.2 - 6.2	66,000
50-59	5.1	3.5 - 6.7	61,000
60-64	1.8*	0.6 - 3.0	8,000
65 or over	0.7*	0.2 - 1.2	7,000
Race/Ethnicity			
Latino	5.2	4.1 - 6.4	164,000
White	4.1	2.9 - 5.3	94,000
African American	14.8	10.8 - 18.9	91,000
Asian/Pacific Islander	1.8*	0.4 - 3.2	20,000
Education			
Less than high school	5.8	4.2 - 7.5	97,000
High school	5.5	3.7 - 7.2	88,000
Some college or trade school	7.4	5.6 - 9.1	147,000
College or post graduate degree	2.1	1.3 - 2.8	39,000
Household Income [§]			
0-99% FPL	9.5	7.4 - 11.6	163,000
100-199% FPL	7.2	5.4 - 9.0	120,000
200-299% FPL	4.4*	2.4 - 6.4	42,000
300% FPL or above	1.7	1.0 - 2.4	48,000
Disability			
Yes	10.5	8.3 - 12.8	147,000
No	3.9	3.1 - 4.7	225,000
Service Planning Area			
Antelope Valley	4.5*	2.0 - 7.0	12,000
San Fernando	5.9	4.0 - 7.8	94,000
San Gabriel	3.8	2.4 - 5.3	49,000
Metro	6.0	3.6 - 8.5	52,000
West	1.5*	0.2 - 2.8	7,000
South	7.6	4.9 - 10.4	51,000
East	4.4	2.7 - 6.1	40,000
South Bay	6.1	3.8 - 8.3	68,000

* The estimate is statistically unstable (relative standard error $\geq 23\%$) and therefore may not be appropriate to use for planning or policy purposes.

[§] Based on U.S. Census Bureau, Housing and Household Economic Statistics Division, 2009 Federal Poverty Level (FPL) thresholds which for a family of four (2 adults, 2 dependents) correspond to annual incomes of \$20,444 (100% FPL), \$40,888 (200% FPL), and \$61,332 (300% FPL).

- In LA County, 5.2% of adults (approximately 373,000 people) reported being homeless or not having their own place to live or sleep at some time in the past 5 years (Table 2).
- One in seven African Americans (14.8%) reported housing instability, compared to 5.2% of Latinos, 4.1% of whites, and 1.8%* of Asians/Pacific Islanders (Figure 3).
- As household income increased, reported housing instability decreased, from 9.5% among those with household incomes <100% FPL, to 1.7% among those with household incomes 300% FPL or above. Further, approximately 75% of those reporting housing instability reported household incomes <200% FPL.
- Adults who reported having a disability were over twice as likely to report housing instability (10.5%) compared to adults who did not report having a disability (3.9%).
- Adults who were unemployed reported more housing instability (11.0%) than those employed (3.8%) or not in the labor force (4.9%).
- Renters were more likely to report housing instability (8.3%) compared to those who owned their homes (1.0%*).

Figure 3: Percent of Adults Who Have Been Homeless or Not Had Their Own Place to Live in the Past 5 Years by Race/Ethnicity, LACHS 2011



*The estimate is statistically unstable (relative standard error $\geq 23\%$) and therefore may not be appropriate to use for planning or policy purposes.

HOUSING PROBLEMS AND ADVERSE HEALTH OUTCOMES

Data from the LACHS demonstrate the deleterious associations between unaffordable housing, unstable housing, and health. Compared to people with relatively affordable and stable housing, those with challenges to securing housing fared significantly worse on multiple measures of health.

◆ *Health Status*

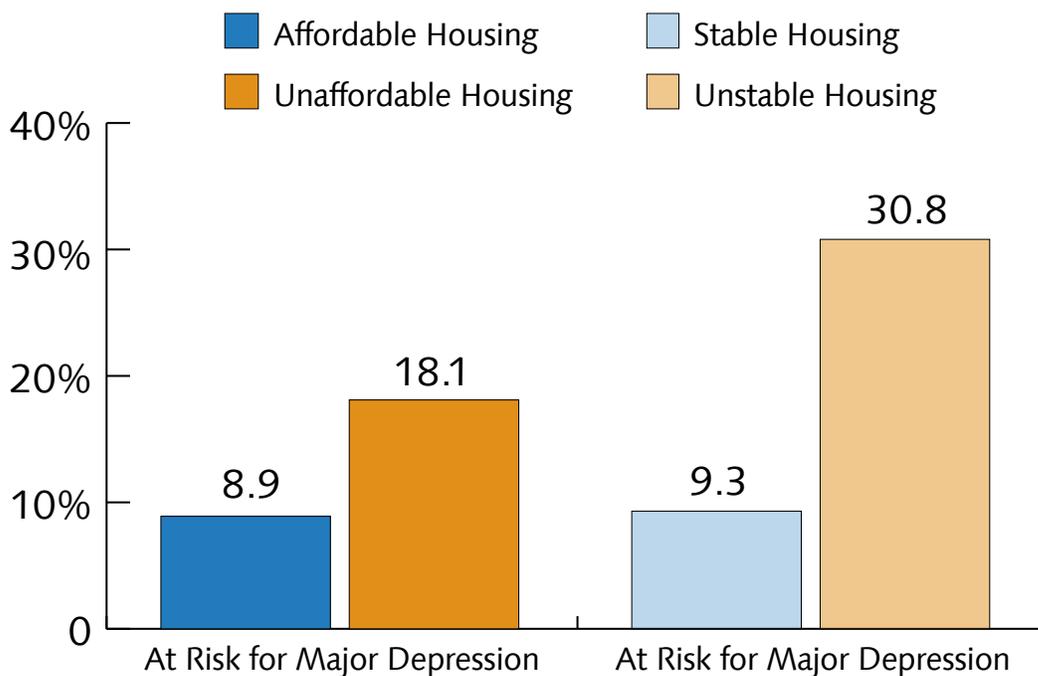
- Significantly more Los Angeles County adults who reported delaying or not paying their mortgage or rent during the last 2 years reported fair or poor health status compared to those who did not report problems paying for their housing (30.9% vs. 18.7%).
- Survey respondents who had trouble paying their mortgage or rent during the last 2 years also reported significantly more unhealthy days during the past month (days when their physical or mental health was not good) compared to those who did not report problems with housing affordability (8.6 vs. 4.8 unhealthy days).
- LA County residents who experienced housing unaffordability also reported significantly more days that their normal activities were limited due to problems with physical or mental health, compared to residents who did not have trouble paying for housing. Those who reported difficulty paying for housing on average faced 3.5 activity limitation days per month, compared to 1.8 days for those without difficulty.
- Nearly one third (31.5%) of Los Angeles County adults with a history of homelessness during the last 5 years reported fair or poor health status, compared to 20.2% of those who had not experienced housing instability.
- Adults with a history of housing instability also reported significantly more unhealthy days in the last month (days when their physical or mental health was not good) compared to people without a history of homelessness (11.2 unhealthy days vs. 5.1).
- Similarly, LA County adults with housing instability reported an average of 5.2 activity limitation days per month, versus 1.9 days for those with stable housing.



◆ **Mental Health**

- Significantly more adults who reported unaffordable housing were at risk for major depression[^] than those who were able to pay their mortgage or rent (18.1% vs. 8.9%) (Figure 4).
- Los Angeles County adults who reported they or their family delayed or did not pay their mortgage or rent sometime during the last 2 years had significantly higher rates of current anxiety or stress disorder (10.8% vs 5.6%) and significantly higher rates of current depressive disorder (14.3% vs. 7.1%).^{^^}
- Adults who experienced housing instability were over three times more likely to be at risk for major depression (30.8%) than those in stable housing (9.3%) (Figure 4).
- Additionally, adults who experienced homelessness during the previous 5 years were significantly more likely to be suffering from current anxiety or stress disorder (17.6%) or current depressive disorder (19.4%) compared to those in stable housing (5.8%, and 7.7%, respectively).

Figure 4: Percent of Adults At Risk for Major Depression by Affordable and Stable Housing, LACHS 2011



[^]At risk for major depression was assessed through the Patient Health Questionnaire 2 (PHQ-2), a two item screening tool.

^{^^} To be considered to have current anxiety or current depression, the survey respondent reported that s/he had been previously diagnosed with an anxiety/phobia/stress disorder or depressive disorder and reported that s/he currently had symptoms of this disorder or was receiving treatment for it at the time of survey interviewing.

QUALITY HOUSING

Environmental Factors

Quality housing is associated with positive physical and mental well-being. How homes are designed, constructed, and maintained, their physical characteristics, and the presence or absence of safety devices can impact injury, illness, and mental health. Indoor air quality, water quality, chemicals in the dwelling and the neighborhood, resident behavior, and the home's immediate surroundings all impact health. According to the Surgeon General of the United States, the link between these housing features and illness and injury is clear and compelling.²⁷

Environmental hazards in the home that are harmful to occupants include mold and pests. Exposure to mold and pests increases the risk for allergy symptoms, asthma, and other respiratory problems. Use of pesticides to eliminate insects or rodents can cause poisonings and may cause chronic health problems including cancer, low birth weight, and prematurity.²⁸

Many hazards, like exposure to lead paint and tobacco smoke, are particularly dangerous for children. Lead exposure can result in lasting impairment of a child's development and behavior, such as decreased IQ and attention span, and increased risk for delinquent behavior.²⁹ Lack of heat or hot water in the home is considered a threat to the health and safety of its occupants, and in some circumstances a dwelling lacking these is considered uninhabitable.³⁰

Poor housing quality also affects mental health, and these effects are especially profound in children. Research by the MacArthur Foundation has found that poor quality housing was the most consistent and strongest predictor of emotional and behavioral problems in low-income children and youth among housing characteristics studied, including affordability, stability, and ownership.³¹

We assessed housing quality in the LACHS by asking specific questions about the physical conditions of the house or apartment. The survey inquired about tobacco use within the home. We also queried a subsample of about 1,000 respondents about the presence of mold, pests, and available heat or hot water in their homes, as well as exposure to lead paint. To establish whether lead paint was present, we based our question on the California Code of Regulations, which states that "presumed lead-based paint" is paint or surface coating affixed to a component in or on a structure constructed prior to January 1, 1978.³²

According to the 2011 LACHS,

- In LA County, 6.9%, equivalent to about 220,000 households, had mold that concerned respondents.
- Over one in ten households (11.5%), or about 368,000 homes, reported that their homes had pests such as cockroaches or mice. The percentage was nearly double among respondents with household incomes under 200% FPL (15.8%), compared with those whose household incomes were 200% FPL or higher (8.3%).
- Approximately 116,000 homes, or 3.6%* of households, did not have heat or hot water when needed.

*The estimate is statistically unstable (relative standard error $\geq 23\%$) and therefore may not be appropriate to use for planning or policy purposes.

- In LA County, 23.0% of adults reported that their home or apartment was built before 1978 and had peeling or chipping paint, meaning that 671,000 households are at risk for exposure to toxic lead paint.
- Among County households with children, 14.7%, or approximately 154,000 homes, were built before 1978 and had peeling or chipping paint, increasing the risk for lead poisoning among these children.
- Among households with children, 16.7%, or about 199,000 households, were exposed to tobacco smoke in the home, placing children at risk for more frequent and severe ear and lung infections, wheezing, and asthma.

Hardware Store Partnership

The LA County Department of Public Health's **Childhood Lead Poisoning Prevention Program** partners with local paint and hardware stores to promote lead safety awareness by training sales associates to educate consumers about the dangers of disturbing lead-based paint in older homes and to offer information on how to safely repaint or remodel their home. Participating stores include the Home Depot, Lowes, Ace Hardware, True Value, Sherwin Williams, Dunn Edwards, and Walmart.



Asthma Coalition of Los Angeles County (ACLAC)

Coordinated by the LA County Department of Public Health, the **Asthma Coalition of Los Angeles County (ACLAC)** is a broad-based coalition of community partners that advocates policy and systems change to prevent, minimize, and manage the burden of asthma. The coalition supports activities including training medical professionals to better manage uncontrolled asthma, providing health assessments and education focused on reducing asthma irritants and triggers in patients' homes, and promoting policies to improve multi-unit housing home inspections and mandates to reduce pests and other asthma triggers.



Public Housing Units Go Smoke-Free

In March 2011, the LA County Department of Public Health (DPH) contacted the directors of LA County's public housing units and strongly encouraged them to implement the smoke-free public housing recommendations released by the U.S. Department of Housing and Urban Development (HUD). DPH emphasized the well documented dangers of secondhand smoke in the home, especially for children and adults with asthma or other chronic illnesses, pregnant women, and the elderly. Following the initial outreach, DPH's **Tobacco Control & Prevention Program** partnered with the Housing Authority of the County of Los Angeles to develop a smoke-free multi-unit housing policy, which was adopted on July 1, 2013 for its 63 public housing developments and protects 6,539 residents from the dangers of secondhand smoke in the home.



The Los Angeles County **Department of Health Services (DHS)** created the **Housing for Health** division in 2012. Housing for Health strives to end homelessness in Los Angeles County, reduce inappropriate use of expensive health care resources, and improve health outcomes for vulnerable populations. The program achieves these goals by providing permanent supportive housing, recuperative care, and specialized primary care to homeless people with complex physical and behavioral health conditions. Access to community-based housing options is an important element of the evolving County health care system, particularly in response to the unique opportunities presented by the Affordable Care Act. Since its inception, Housing for Health has provided housing for over 500 patients.

Working in collaboration with case managers, health care providers, housing finance agencies, housing developers, and philanthropy, Housing for Health aims to create 10,000 units of housing linked to the health care system. In addition to the central goal of creating permanent supportive housing, Housing for Health develops other residential settings to improve the flow of patients within the health system, including a significant expansion of recuperative care/ stabilization beds available to DHS hospitals.



The Los Angeles County **Department of Public Social Services (DPSS) Housing Program** offers a number of benefits and services designed to assist CalWORKs families who are homeless or at risk of homelessness to move out of the current housing crisis into affordable permanent housing. The DPSS Housing Program includes financial assistance as well as case management services. In addition, DPSS collaborates with other County, City and community agencies on the **Homeless Family Solutions System (HFSS)**. The HFSS is a regional, coordinated, **Housing First** approach to address family homelessness by diverting and rapidly re-housing families while connecting families to supportive services within their own communities.

The **Housing Authority of the County of Los Angeles** is partnering with the **Central Neighborhood Health Foundation (CNHF)** to open a satellite community clinic at Carmelitos Public Housing Development. Located in the City of Long Beach, Carmelitos encompasses 64 acres and has a total of 713 units. The demographic make-up of the resident population consists of 88% female-headed households, with an average annual income of \$14,055. The Development includes a children's play area, tennis and basketball courts, senior and family community centers, family resource and computer learning centers, recreation center, Head Start program, and a 7-acre award winning Urban Farm, named The Growing Experience. The CNHF, a Federally Qualified Health Center, serves individuals and families with or without health insurance, and will provide services in primary care, family planning, pediatric care, and senior care.



DISCUSSION

Affordable, stable, and quality housing contribute to health in many ways. This report assesses the social determinants and relationships that exist between these aspects of housing and health in Los Angeles County residents.

As the nation continues to recover from the most severe economic downturn since the Great Depression, the costs associated with housing continue to rise, even though unemployment, wages, and other social and economic indicators lag behind. As a result, in order to remain housed, people are forced to make difficult financial sacrifices that can adversely impact their health. The MacArthur Foundation recently reported that more than half of all U.S. adults have made at least one financial sacrifice in order to cover their rent or mortgage during the past three years, including getting another job, cutting back on health care or healthy foods, or saving money by moving to a less safe neighborhood or one with worse schools.³⁵

People in Los Angeles County generally experience a very high housing burden. The ACS 5-year estimates reveal that over half of County households paid 30% or more of their income on housing. One consequence of this high housing burden is that people have difficulty making their mortgage or rent payments. In assessing housing affordability through the 2011 LACHS, we found that an estimated 1.2 million adults (17.2%) reported that they or their family were unable to pay or delayed paying their mortgage or rent during the past two years.

We identified significant racial/ethnic, social, economic, and geographic disparities among adults who experienced difficulty paying for their housing. The County's African American and Latino populations faced a significantly higher burden compared to Asians/Pacific Islanders and whites. Similarly, lower income households, less educated individuals, and those with disabilities were significantly more impacted by housing unaffordability compared to their respective counterparts. Adults in the Antelope Valley SPA experienced the highest housing burden of all the County SPAs.

The LACHS found that 5.2%, an estimated 373,000 adults, experienced housing instability during the last 5 years, meaning that they did not have their own place to live or sleep at some time during that period. This estimate includes adults who may have needed to sleep on the street and in homeless shelters, as well as those who stayed with friends, relatives, and in hotels/motels. Adults who were unemployed, those who rent, those who reported having a disability, and African Americans faced significantly higher housing instability burdens.

Our assessment of LACHS data revealed relationships between housing affordability, housing stability, and multiple measures of physical and mental well-being. Adults who reported difficulty paying for housing had significant difficulty meeting other subsistence needs, such as access to vital health services and nutritious, high quality food. Similar results were found for adults who experienced housing instability. Those who reported housing unaffordability or instability fared more poorly in measures of health status, well-being, and mental health.

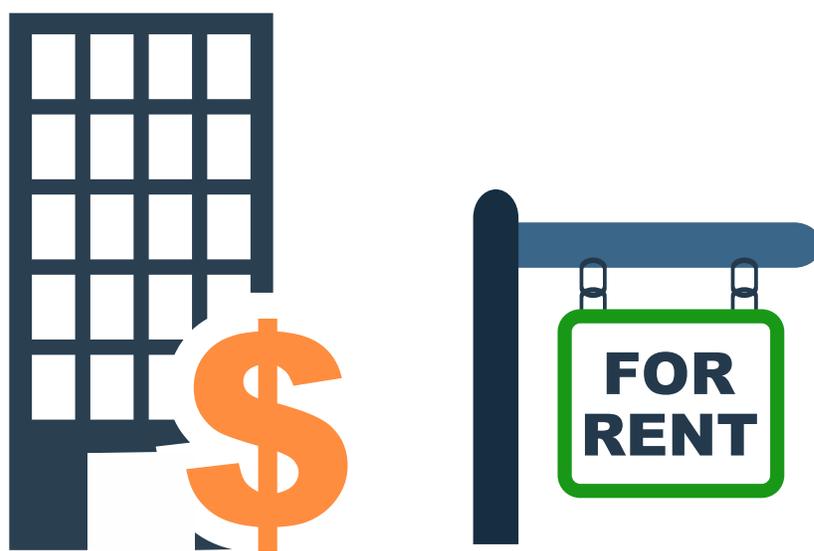
For the past century, social reformers and researchers have recognized the link between housing quality and human health. It is universally established that humans living in households with mold, or pests such as cockroaches or mice, are at increased risk of infectious disease and poor health outcomes. There is also clear and established evidence linking lead exposure in older houses to neurodevelopmental problems.³⁶ Lack of adequate heat and hot water creates substandard and illegal housing.

In our assessment of housing quality through the LACHS, we found that hundreds of thousands of households in the County experience these potentially unhealthy or dangerous housing conditions. Because we administered housing quality questions to only a subsample of LACHS adult respondents, and these issues do not evenly impact all residents at the same rates, we were unable to further explore disparities in housing quality. Nonetheless, the data demonstrate that poor housing characteristics likely affect the lives of millions of people in the County.

It is important to note that the LACHS data we present in this report are self-reported and based on a cross-sectional study, which provides a snapshot of the social determinants and relationships between housing and health outcomes at one point in time. Though we found that strong relationships exist between housing unaffordability, housing instability, poor quality housing and poor health outcomes, the cross-sectional study design limits our ability to determine causality. However, these results are consistent with research conducted around the U.S. and the world during the last 15 years.^{15,37,38}

Overall, results from the LACHS do further establish that these three dimensions of housing—affordability, stability, and quality— affect health in inter-related ways, particularly for those of low social and economic status. Lack of affordable housing, housing instability, and poor quality housing can lead to serious health consequences, and create or contribute to profound health inequities. The findings shared here are supported by studies that show that many low-income families who lack affordable housing cannot afford competing expenses for basic needs, and are more likely to experience food insecurity and homelessness. Also, lack of affordable housing can drive families to live in overcrowded conditions or to seek cheaper accommodations, which may be less well maintained, and more likely to host pests, as well as mold or environmental toxins like lead paint.

The links between housing affordability, housing stability, housing quality, and health are key to understanding adverse health outcomes among the Los Angeles County population. Housing issues underlie many health disparities observed in the County, and must inform our efforts to advance the public's health. Programs and policies that improve housing options and conditions for County residents represent key points of intervention through which we can modify the social determinants of health, ultimately achieving equity for all.



RECOMMENDATIONS

Public health has played a historic role in developing and enforcing housing standards, and must play a key role moving forward in advocating for increasing access to adequate, affordable and safe housing.

Housing experts, health practitioners, policymakers, and advocates need to continue to work together to craft interdisciplinary solutions. Public health's role in this effort includes advancing our "health in all policies" approach. We must educate ourselves and the community about the link between housing and health and the importance of increasing access to safe, stable, affordable, quality housing through collaboration between governmental and non-governmental organizations. A coordinated and integrated approach among housing, transportation, environmental and public health agencies, which includes public and private entities, is necessary to achieve better housing and health outcomes.

General:

- Increase collaboration across government agencies at all levels and between stakeholders from community groups, public health agencies, and private groups (e.g., employers) to ensure a coordinated approach to housing as a determinant of health and health disparities.^{39,40,41}
- Support policies that increase economic security for individuals and families by expanding opportunities for employment and increasing workers' incomes, such as a higher minimum wage and earned income tax credit.
- Advocate for sufficient funding to meet annual public housing operating and capital costs, as well as increased funding to address the backlog of public housing capital needs.^{42,43}
- Support policies that provide for development without displacement, preserving or replacing affordable housing for low-income residents in all neighborhoods and areas undergoing development.⁴⁴

Housing affordability:

- Expand the supply of affordable housing units for low-income individuals and families. Protect existing affordable housing that is at risk of conversion to unaffordable market-rate housing.^{42,43,44}
- Preserve or redevelop federal, state, and County resources for affordable housing or access to housing by extremely low-income people.^{39,45}
- Continue federal involvement in lending and fairness standards for banking and loan institutions. Improve banking and lending procedures of the private-sector to create equal opportunities for credit.³⁹
- Include housing cost considerations in the federal poverty level.⁴²



Housing stability:

- Identify locations in LA County where low-income tenants are at increased risk for displacement due to surrounding development and rising rent costs, and put policies in place to stabilize people in their current homes.
- Keep families in their homes and prevent them from becoming homeless with services such as landlord mediation, help with overdue rent and utility bills, and emergency food, clothing, childcare, and transportation assistance.⁴³
- Expand efforts to increase access to permanent housing with supportive services for homeless individuals and families. Support services should be tailored to each individual's and family's specific needs to help them rebuild and maintain stability and self-sufficiency.⁴⁵
- Reduce the time individuals and families stay in emergency shelters with quick placements into permanent housing, often with rent subsidies tailored to each individual's and family's specific situation.⁴³

Housing quality:

- Improve and enforce current federal, state and local housing codes and guidelines to reflect current knowledge regarding hazards within the home environment.^{39,41}
- Use national, state and local public campaigns and programs to educate and empower private- and public-sector housing providers, owners and tenants about the dangers of unsafe and unhealthy housing and about their rights and responsibilities.^{39,41}
- Increase resources and expand the role of public health agencies in housing education, inspections and enforcements at the local, state and national level.^{39,40}

Healthy Homes

The LA County Department of Public Health's **Environmental Health Division** (EH) has a Healthy Homes Program that focuses on multiple family dwellings with histories of substandard conditions, including, but not limited to, general dilapidation, vermin, mold, defective plumbing, and lack of heat or hot water. These properties receive inspections to detect code violations, and their tenants and landlords are educated on key healthy housing conditions. In an effort to reduce inspection costs and increase the effectiveness of this Program, EH began to collaborate with community-based organizations (CBOs) to pilot a Healthy Homes Program in the Trinity Park neighborhood of the City of Los Angeles. Seven properties were selected based on their inspection and documented histories of substandard conditions. The Program seeks to utilize community partners to increase inspection access to multiple family dwelling units, improve education outreach to residents, encourage the use of integrated pest management applications to reduce pesticide exposure, and identify measurable correlations of resident health and sustained code compliance.



U.S. Department of Housing and Urban Development's (HUD) mission is to create strong, sustainable, inclusive communities and quality affordable homes for all. www.hud.gov

National Center for Healthy Housing develops and promotes practical methods to protect children from environmental health hazards in their homes while preserving affordable housing. www.healthyhousing.org

National Health Care for the Homeless Council is a network of more than 10,000 doctors, nurses, social workers, patients and advocates who share the mission to eliminate homelessness by ensuring comprehensive health care and secure housing for everyone. www.nhchc.org

National Low Income Housing Coalition works to achieve socially just public policy that assures people with the lowest incomes in the United States have affordable and decent homes. <http://nlihc.org>

Southern California Association of Non Profit Housing (SCANPH) facilitates affordable housing development across Southern California by advancing effective public policies, sustainable financial resources, strong member organizations, and beneficial partnerships. <http://scanph.org>

Inner City Law Center is the only provider of legal services on Skid Row in downtown Los Angeles, combatting slum housing while developing strategies to end homelessness. www.innercitylaw.org

The LA Human Right to Housing Collective is a coalition of community based organizations working in various communities across Los Angeles County to support low-income tenants in private and public housing in defending and expanding their right to affordable, safe housing as a human right. www.lahumanrighttohousing.org

Neighborhood Legal Services of Los Angeles County (NLSLA) works to combat poverty through the judicial system to improve the lives of individuals and families and in our community. They offer free legal representation, advice and education. www.nlsla.org

St. John's Well Child and Family Center (SJWCFC) serves patients of all ages through its health centers and school-based clinics in Central and South Los Angeles and Compton. SJWCFC's Environmental Health Projects provide a combination of holistic medical care, health education and home-based interventions to reduce patients' exposures to health hazards present in their homes. www.wellchild.org

Strategic Actions for a Just Economy (SAJE) is a community organizer and advocate working on behalf of the residents of South LA, particularly in the Figueroa Corridor. SAJE takes slumlords to court, helps establish land trusts, and works to find positive solutions to conflicts between institutions and low-income city residents. www.saje.net

Esperanza Community Housing Corporation works to achieve comprehensive and long-term community development in the Figueroa Corridor neighborhood of South-Central Los Angeles. www.esperanzacommunityhousing.org

UNIDAD—United Neighbors In Defense Against Displacement is a campaign committed to future development of South LA that includes and benefits all members of the community. The coalition works to address the displacement of thousands of local residents and workers from the community due to skyrocketing rents, slum conditions, tenant harassment, job loss, and housing discrimination. www.facebook.com/UNIDADLA

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