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More Than 2.9 Million Californians Now Food Insecure – One in Three Low-Income, An Increase in Just Two Years

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Results from the most recent California Health Interview Survey (CHIS 2003) indicate that food insecurity has increased significantly among low-income California adults since 2001.¹ In 2003, more than 2.9 million adults in low-income households – those with incomes less than 200% of the federal poverty level (FPL)² – experienced periods during the year when they could not afford to put food on the table or had to forego other basic needs to do so, and almost 900,000 of these low-income, food-insecure adults experienced episodes of hunger.

These results translate to more than one-third of low-income adults being food insecure in 2003 (33.9%, up from 29.1% in 2001), and 10.3% (up from 8.3% in 2001) experiencing episodes of involuntary hunger due to lack of economic resources (see Exhibit 1 and the Technical Note at the end of this brief). The increases in food insecurity and hunger in California over this period contrast with national estimates, which show little change over the same period of time.³

What Is Food Insecurity?

Lack of assured access to enough food for an active healthy life through socially acceptable means is termed *food insecurity*.⁴ At mild and moderate levels, being food insecure contributes to anxiety and worry, and results in adjusting the household budget, often foregoing other basic needs in order to make sure that one's family is fed. In its more severe form, food insecurity results in hunger – going without food for an extended period of time, resulting in physical sensations ranging from discomfort to pain – due to lack of money or other resources.

Why Is Food Insecurity a Risk to Health?

While stable access to enough food for a healthy life is a basic human need and a legitimate policy goal for that reason, there is abundant evidence that food insecurity contributes to poor health. There are clear associations between food insecurity and poor quality diets with resulting poor nutritional status, but there are other risks as well.⁵ Children in food-insecure households tend to do less well in school, with increased absences and tardiness, and poorer cognitive functioning. They also tend to have more health problems – such as headaches, colds and ear infections – than children in food-secure households. Children and adolescents in food-insecure households have increased risks of emotional problems. Adolescents in food-insecure households are more likely to have depressive and suicidal symptoms, and are more than twice as likely to have seen a psychologist as other adolescents. In adults, food insecurity is associated with poorer health, and adults with diabetes living in food-insufficient households have been shown



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Exhibit 1

Prevalence of Food Insecurity and Hunger Among Adults (Age 18+) Below 200% FPL by County/County Group: California 2003 and Change in Prevalence Since 2001

Regions	Adults Under 200% FPL, FY2003	2003 Food Insecure (with and without hunger)			Change in Food Insecure Prevalence Since 2001	2003 Hunger			Change in Hunger Prevalence Since 2001
	%	%	95% CI	Est. Pop. <200% FPL	Direction	%	95% CI	Est. Pop. <200% FPL	Direction
Northern and Sierra Counties									
Butte	38.6	24.4	(17.1 – 31.7)	15,000	increase	9.4	(4.3 – 14.5)	6,000	decrease
Humboldt, Del Norte	39.9	31.6	(24.0 – 39.2)	14,000	increase	14.8	(9.0 – 20.6)	7,000	increase
Mendocino, Lake	37.0	37.5	(27.9 – 47.0)	15,000	increase	21.0	(13.0 – 29.0)	9,000	increase
Nevada, Plumas, Sierra	26.8	33.5	(21.8 – 45.2)	9,000	increase	16.3	(7.3 – 25.3)	4,000	increase
Shasta	35.7	41.0	(32.0 – 50.1)	19,000	increase	14.7	(8.7 – 20.6)	7,000	increase
Siskiyou, Lassen, Trinity, Modoc	36.8	23.7	(14.9 – 32.6)	6,000	decrease	10.0*	(3.9 – 16.1)	3,000	decrease
Sutter, Yuba	37.3	42.4	(33.2 – 51.6)	16,000	increase	17.5	(9.9 – 25.0)	7,000	increase
Tehama, Glenn, Colusa	45.1	33.6	(24.6 – 42.5)	12,000	increase	9.9*	(3.8 – 16.1)	3,000	decrease
Mariposa, Mono, Alpine	32.1	35.5	(23.9 – 47.0)	16,000	increase	17.2	(8.1 – 26.2)	8,000	increase
Greater Bay Area									
Alameda	26.8	34.0	(29.5 – 38.5)	100,000	increase	11.4	(8.6 – 14.2)	34,000	increase
Contra Costa	17.8	36.3	(25.2 – 47.4)	47,000	increase	4.8*	(1.5 – 8.2)	6,000	decrease
Marin	13.6	20.4*	(8.2 – 32.7)	5,000	decrease	8.2*	(0.3 – 16.1)	2,000	decrease
Napa	25.3	41.9	(29.0 – 54.9)	10,000	increase	15.9*	(4.7 – 27.2)	4,000	increase
San Francisco	25.5	26.3	(18.4 – 34.1)	43,000	decrease	5.2*	(1.7 – 8.7)	9,000	decrease
San Mateo	19.3	40.7	(26.6 – 54.8)	41,000	increase	3.7*	(0.3 – 7.0)	4,000	decrease
Santa Clara	24.7	30.0	(23.4 – 36.5)	93,000	increase	12.0	(7.3 – 16.6)	37,000	increase
Solano	25.3	39.0	(26.0 – 52.0)	28,000	increase	13.5*	(5.5 – 21.5)	10,000	increase
Sonoma	22.9	33.1	(21.2 – 45.1)	26,000	increase	6.8*	(2.0 – 11.5)	5,000	decrease
Sacramento Area									
El Dorado	19.8	29.1	(17.9 – 40.3)	7,000	increase	13.5*	(4.3 – 22.8)	3,000	increase
Placer	17.8	30.6	(18.3 – 42.9)	11,000	increase	12.7*	(3.4 – 22.0)	5,000	increase
Sacramento	31.6	29.5	(22.7 – 36.2)	88,000	increase	7.4	(4.1 – 10.7)	22,000	decrease
Yolo	28.8	26.9	(17.8 – 36.0)	10,000	increase	7.7*	(2.6 – 12.8)	3,000	decrease
San Joaquin Valley									
Fresno	48.1	35.8	(28.1 – 43.4)	100,000	no change	7.6	(4.1 – 11.2)	21,000	decrease
Kern	39.0	45.2	(36.0 – 54.4)	84,000	increase	21.1	(13.7 – 28.4)	39,000	increase
Kings	46.8	35.2	(27.2 – 43.2)	14,000	decrease	7.6	(3.2 – 11.9)	3,000	increase
Madera	44.2	38.1	(29.5 – 46.7)	15,000	increase	11.1	(5.7 – 16.6)	4,000	decrease
Merced	48.1	34.9	(27.1 – 42.6)	26,000	no change	9.2	(4.7 – 13.8)	7,000	decrease
San Joaquin	36.2	41.0	(31.0 – 51.0)	63,000	increase	11.4	(6.1 – 16.7)	17,000	decrease
Stanislaus	39.9	38.6	(30.0 – 47.3)	51,000	increase	15.4	(9.0 – 21.9)	20,000	increase
Tulare	53.1	40.1	(32.7 – 47.6)	55,000	decrease	11.3	(6.3 – 16.3)	15,000	increase
Central Coast									
Monterey, San Benito	42.4	38.1	(29.5 – 46.6)	53,000	increase	12.7	(6.7 – 18.6)	18,000	increase
San Luis Obispo	27.5	29.8	(19.5 – 40.0)	15,000	increase	4.7*	(1.2 – 8.1)	2,000	increase
Santa Barbara	36.0	34.9	(23.3 – 46.5)	37,000	increase	13.7	(6.0 – 21.3)	14,000	increase
Santa Cruz	32.5	36.3	(26.1 – 46.4)	22,000	increase	16.3	(8.3 – 24.4)	10,000	increase
Ventura	32.4	27.5	(16.6 – 38.4)	51,000	increase	5.1*	(0.2 – 10.0)	9,000	increase
Los Angeles									
Los Angeles	39.4	34.3	(32.3 – 36.3)	957,000	increase	10.3	(9.0 – 11.5)	287,000	increase

Exhibit 1 (continued) Prevalence of Food Insecurity and Hunger Among Adults (Age 18+) Below 200% FPL by County/County Group: California 2003 and Change in Prevalence Since 2001

Regions	Adults Under 200% FPL, FY2003	2003 Food Insecure (with and without hunger)			Change in Food Insecure Prevalence Since 2001	2003 Hunger			Change in Hunger Prevalence Since 2001
	%	%	95% CI	Est. Pop. <200% FPL	Direction	%	95% CI	Est. Pop. <200% FPL	Direction
Other Southern California Counties									
Imperial	57.2	30.0	(23.6 – 36.3)	17,000	increase	6.1	(2.9 – 9.3)	4,000	increase
Orange	30.1	33.1	(27.2 – 38.9)	214,000	increase	10.5	(6.7 – 14.2)	68,000	increase
Riverside	38.1	31.6	(25.9 – 37.3)	145,000	increase	10.3	(6.7 – 14.0)	47,000	increase
San Bernadino	42.3	36.2	(30.5 – 41.9)	188,000	increase	9.6	(6.4 – 12.7)	50,000	increase
San Diego	29.2	30.1	(25.1 – 35.1)	190,000	increase	9.6	(6.6 – 12.7)	61,000	increase
Statewide	33.9	33.9	(32.7 – 35.1)	2,926,000	increase	10.3	(9.6 – 11.1)	892,000	increase

Source: 2001 and 2003 California Health Interview Surveys

* Statistically unstable estimate (i.e., co-efficient of variation greater than 30% of the relative standard error).

Alpha=0.05. The prevalence results represent estimated values that are very close to the actual values for adults (ages 18+) living below 200% of poverty who experienced food insecurity (with and without hunger) in California in 2003. "Change in prevalence" describes the direction of change in probability-weighted food-insecurity prevalence (%) in 2003 among low-income adults (<200%FPL) at the county/county group since 2001.

to have greater risk of complications of their disease and greater utilization of medical care.

Food Insecurity and Hunger in California 2003

The prevalence of food insecurity among low-income adults varied significantly across California's counties, from a low of 20.4% to a high of 45.2%. The highest prevalence of food insecurity was observed in Kern, Tulare, Sutter/Yuba, Napa, Shasta, San Mateo and San Joaquin Counties. In each of these counties more than two-in-five low-income adults were food insecure in 2003 (Exhibit 2). The prevalence of having experienced hunger also varied significantly across the state from a low of 3.7% in San Mateo County to a high of 21.1% in Kern and 21% in Mendocino/Lake Counties in 2003.

Populations Vulnerable to Food Insecurity and Hunger in 2003

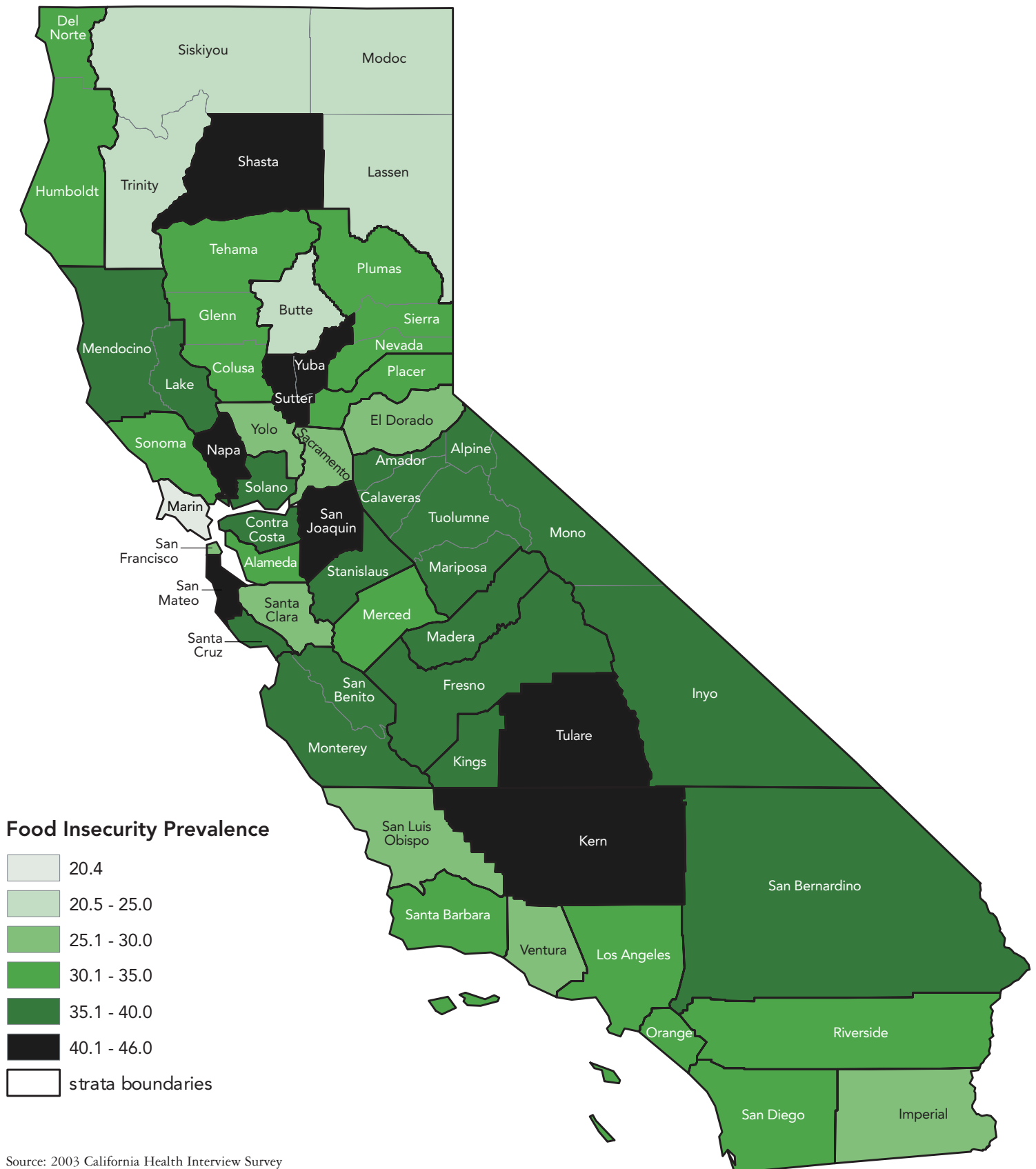
While food insecurity affects all population groups in California, certain populations are more vulnerable than others. Low-income

African Americans and Latinos have higher proportions of food-insecure adults (37.3% and 38.2%, respectively) than do whites, 28.1%, while Asians (23.8%) are least likely of all low-income groups to be food insecure (Exhibit 3). African-American adults have the highest proportion reporting episodes of hunger, 13.8% compared to 12.1% of whites and 9.7% of Latinos. Asians have the lowest proportion of low-income adults reporting food insecurity with hunger, only 3.9%.

The prevalence of food insecurity and hunger among California's most vulnerable groups significantly increased between 2001 and 2003. Among low-income older adults, those 65 years and above, 20% were food insecure (up from 15.9% in 2001), and 4.3% reported hunger (up from 3.8% in 2001). Among low-income pregnant women, ages 18-44, 40.7% were food insecure in 2003 (up from 29.2% in 2001), and 16.1% reported hunger (up from 6.2% in 2001). Among low-income adults in households with children, food insecurity reached 38.3% and hunger affected 10.9%; in single-headed

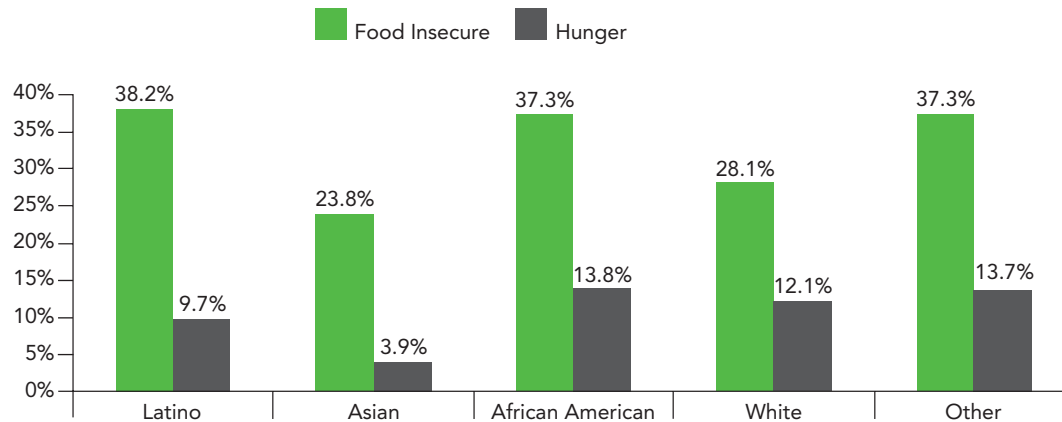
Exhibit 2

Prevalence of Food Insecurity by County, Adults (Age 18+) Below 200% Poverty, California, 2003



Prevalence of Food Insecurity (with and without Hunger) and Hunger by Race/Ethnicity for Adults (Age 18+) Below 200% Poverty, California, 2003

Exhibit 3



Source: 2003 California Health Interview Survey

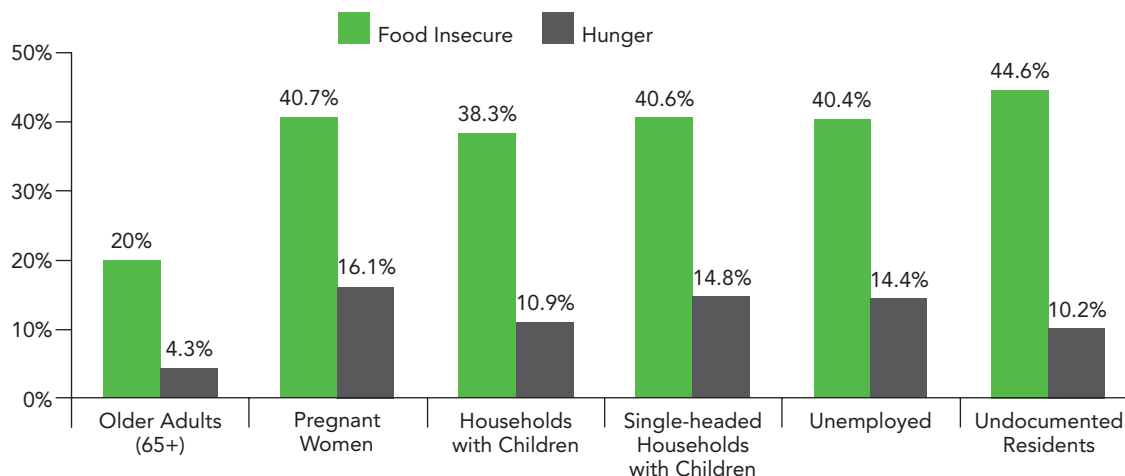
households with children the rates were even higher. Among low-income unemployed adults, 40.4% were food insecure in 2003 (up from 39.3% in 2001), and 14.4% reported hunger (up from 13% in 2001). Among low-income, non-citizen adult residents without a green card, 44.6% were food insecure in 2003 (up from 36.5% in 2001), and 10.2% reported hunger (up from 7.4% in 2001; Exhibit 4).

Participation in Federal Food Assistance Programs

Among the most important safety nets against hunger are the federal food assistance programs. The Food Stamp Program is the largest program designed to mitigate food insecurity and hunger for low-income households by providing direct subsidies for purchase of food through grocery stores. Individuals in households with incomes less than 130% FPL are considered income eligible.

Prevalence of Food Insecurity and Hunger in California Among Vulnerable Adult Groups Below 200% Poverty, California, 2003

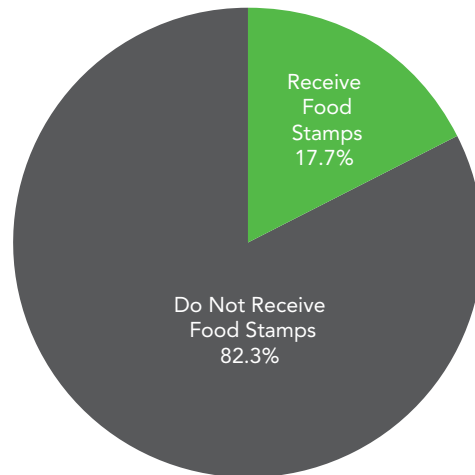
Exhibit 4



Source: 2003 California Health Interview Survey

Exhibit 5

Low-income Adults (<30% FPL) Ages 18-64 with U.S. Citizenship/Legal Residency Experiencing Hunger by Food Stamp Participation, California, 2003



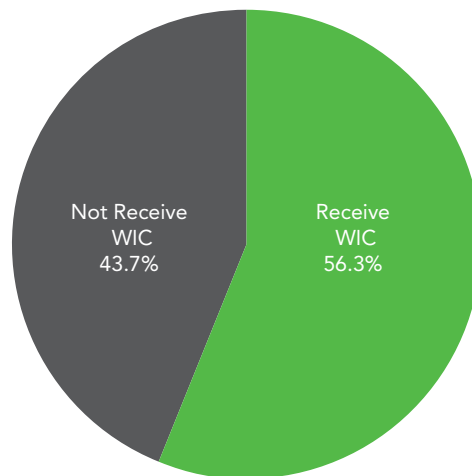
Source: 2003 California Health Interview Survey

Yet the Food Stamp Program has been underutilized, particularly in California.⁶ Many states have – in the last several years – made major efforts to expand the program’s outreach efforts and increase participation among eligible individuals. Over the five-year period from December 1999 to December 2004, 24 states showed an increase in the number of participants by more than 50%. Moreover, all but six states increased participation by more than 10%.⁷ California’s increase during that period was a modest 5.3%, in spite of a substantial increase in the income-eligible population during that period.

Based on CHIS 2003 data, we examined Food Stamp Program participation among adults living in potentially eligible households – that is, gross income less than 130% FPL – and who were U.S. citizens or legal permanent residents, who also reported episodes of hunger. Only 17.7% of them reported receiving food stamps (Exhibit 5).

Exhibit 6

Low-income Pregnant Women (<185% FPL) Experiencing Hunger by WIC Participation, California, 2003



Source: 2003 California Health Interview Survey

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) provides supplemental food and other services to pregnant and postpartum women, and infants and children with low income (and nutritional risk). While we could not mimic those criteria completely, we examined participation rates among pregnant women in income-eligible households (less than 185% FPL) who reported episodes of hunger. More than half of these women reported participating in the WIC program (Exhibit 6). This no doubt underestimates actual participation, since some women who were pregnant would have enrolled after participating in the survey interview. Still, there are pregnant women who live in severely food-insecure households who are not benefiting from WIC. Given the dramatic increases reported for food insecurity and hunger among

pregnant women from 2001 to 2003 – with 40.8% reporting food insecurity and more than 16% reporting episodes of hunger in 2003 – underutilization of assistance programs among this group is particularly worrisome.

Food Insecurity and Overweight

Several investigators have recently hypothesized a relationship between food insecurity and risk of overweight. Studies that have examined the hypothesis empirically have found positive associations of food insecurity and overweight in women, but not in men and inconsistent findings for children.⁸ We examined the relationship in the CHIS 2001 and 2003 data for low-income adults, based on Body Mass Index (BMI, defined as kg/m²) calculated from self-reported weight and height. Consistent with other data, we find a significant positive relationship for women with the average BMI for low-income women in households reporting food insecurity significantly higher than for those in food-secure households, but no difference in BMI by food security status for low-income men. In the CHIS 2003 data, low-income women in food-secure households had an average BMI of 26.8 (still in the overweight range), while those in households reporting food insecurity had average BMIs of 28.2 and 28.4, without and with hunger, respectively.

While a relationship between food insecurity and overweight may seem to be a paradox, there are several mechanisms that may contribute to such a finding. Food insecurity may lead to the development of overweight if individuals overcompensate for periods when food is scarce by overeating when food is available. A second possible mechanism is via increased metabolic efficiency resulting from repeated periods of weight loss and gain, leading ultimately to overweight. A third possible pathway to overweight among food-

insecure persons is through behavior driven by economics, since calorie-laden, high-fat foods are often the least expensive and readily available. Still a fourth possible explanation is that while poverty is strongly associated both with food insecurity and with overweight/obesity in women, the causal pathways are not related.

Why Has Food Insecurity Increased in California Since 2001?

The striking increases in food insecurity and hunger among low-income California adults between 2001 and 2003 require explanation. Since food insecurity results from inadequate resources, wages and income are central factors. There was an increase in the unemployment rate in California during the period 2001-2003 – the 2001 rate was 5.4% and by 2003 it was up to 6.8%.⁹ In addition, there is likely a more complex dynamic at work rooted in the relatively high and rapidly increasing cost of other basic necessities – especially housing – in many parts of California, coupled with a lack of expansion (and in some cases a decrease) in public assistance and income supports. As noted earlier, participation in the Food Stamp Program has expanded only marginally over the last five years, in comparison to major expansions in many other states due to simplified enrollment procedures and outreach to improve program utilization. Trends in participation in CalWORKs – California's Federal Temporary Aid for Needy Families (TANF) program – show dramatic declines since reform of welfare programs began in the mid-1990s. Average statewide monthly caseload figures dropped dramatically from 47% of adults in households with incomes below the poverty level in 1996 to 27% in 2003.¹⁰

The cost of providing for basic necessities also helps explain why food insecurity has been increasing. The Self-Sufficiency

Standard for California, prepared by the National Economic Development and Law Center,¹¹ combines data on the cost of basic necessities (i.e., housing, child care, food, transportation, health care, taxes and other necessities). It takes into account the effects of tax credits, for families of various types in specific locations, and translates those data into a “self-sufficiency” wage, the hourly rate that adults working full time would require to meet basic necessities on an ongoing basis.¹² The analysis for 2003 shows that in California, a single parent with a preschooler required a median wage of \$12.50/hour, almost twice the state minimum wage of \$6.75 just to pay for basic household necessities. In one-third of California counties, an hourly wage above \$15 would have been required. San Francisco tops the list of basic costs for U.S. cities for all family types, and Los Angeles is in the top five (the others are New York City, Washington DC and Boston). The major factor in the high cost of necessities is housing. For example, rental costs increased in Sacramento by 51% between 2000 and 2003, and many other parts of the state have experienced similar trends.

In 2001, the highest prevalence of food insecurity among low-income adults in California was in the Central Valley and the rural northern counties. The 2003 data show a somewhat different geographic distribution; although the Central Valley counties still show high prevalence, there are also high rates in some of the counties surrounding the San Francisco Bay area. These shifts may be partly influenced by changes in housing costs and/or mobility of low-income families out of high-cost housing markets. Between 2001 and 2003, about 20% of California families moved their residence, and the most likely to move were the lowest-income families. Among families with incomes below the poverty threshold, just about one-in-four (24%) moved their residence during this

period,¹³ many likely to find lower-cost housing. It is unclear whether the decrease observed in food insecurity in San Francisco during the 2001-2003 period resulted from low-income families moving into adjacent, lower-rent communities or from other factors, such as the increase in the local minimum wage enacted by San Francisco in 2002,¹⁴ a combination of these, and/or other unknown factors.

Policy Implications and Recommendations

The findings are clear: too many households in California lack sufficient resources to adequately put food on the table on a stable basis. Given the substantial increase in food insecurity and hunger described in this policy brief, decision makers must tackle three pressing policy issues:

- 1) How can we increase the overall income and resources of households in California?
- 2) How can we relieve the pressures on households' food budgets caused by rising expenses for housing, health care and child care?
- 3) How can policymakers ensure that food resources are protected in every household budget, and that nutrition assistance is available when other solutions fall short?

The following policy recommendations address these issues.

Recommendation 1: Increase Household Income by Increasing Minimum Wages and Public Assistance.

Adequate wages for full employment would eliminate the problems of hunger and food insecurity for the majority of households in California. Clearly, wages from work have not kept up with increases in cost of housing and other basic necessities, including food. Policymakers can take action to increase the state minimum wage, which has not been raised since 2002, and index it to inflation so California's workers and their families don't fall further behind. For those Californians

unable to work because of age and disability, the state must have a strong safety net. In spite of significant increases in food insecurity and poverty, the proportion of California's most needy participating in cash aid has dropped dramatically from 50% in 1996 to 20% in 2003.¹⁵ Given the connections between income, resources and food insecurity, policymakers must resist cutting cash aid during tight budget times.

Elderly and disabled individuals relying on Supplemental Security Income (SSI) in California have seen their assistance cut or have been denied cost-of-living increases in 10 of the last 15 years. Low-income families haven't fared much better; grant levels in CalWORKs, the state's welfare program, may dip below levels last seen in the late 1980s. This is particularly concerning given the high rates of food insecurity among single-headed households with children.

Recommendation 2: Reduce the Competition Between Household Economic Pressures and Adequate Food.

Food expenditures are relatively more flexible in a household's budget than a number of other items. Failure to pay rent, utilities and childcare leads to immediate and harsh consequences, such as eviction. As a result, these expenses are often more immediate priorities because the detrimental physical and psychological consequences of inadequate nutrition are more subtle and take time to fully manifest. By easing household economic pressures, policymakers can ensure that resources are available for food. Currently, many low-income families in California spend more than half of their income on rent.¹⁶ By increasing the state's affordable housing, policymakers can go a long way to reducing food insecurity.

Recommendation 3: Increase Participation in Federally-Funded Nutrition Assistance Programs.

Despite their vital role in staving off hunger among the most vulnerable, federal food programs are severely underutilized in California. Over a million low-income California children do not participate in the school breakfast program. Only half of eligible Californians are getting federal food stamp benefits.¹⁷ State and local policymakers have flexibility to increase access and improve participation in the Food Stamp, School Breakfast, Child Care Food, and Summer Lunch Programs.¹⁸ While outreach efforts have modestly increased visibility of these resources, significant actions are needed to integrate enrollment in nutritional assistance programs with other services designed to alleviate poverty's effects among low-income populations. Breakfast should be automatically available for low-income school children. Opportunities to sign up for food stamps should be part of getting public and private health insurance, enrolling for WIC, and the Earned Income Tax Credit. Simply put, the federal food assistance programs are California's strongest defense against hunger. With tight budgets facing State government, drawing down federal resources to reduce food insecurity should be a top priority.

Data Source

This policy brief is based on findings from the 2001 (Revised) and 2003 California Health Interview Surveys. CHIS 2001 was revised for comparability with CHIS 2003; details of revised sample and re-weighting may be found on the CHIS Web site: <http://www.chis.ucla.edu>. CHIS covers a broad range of public health topics, including health status and conditions, health-related behaviors, health insurance coverage and access to health care services. CHIS 2001 interviewed 56,270 households between November 2000 and September 2001, and CHIS 2003 interviewed 42,044 households

between August 2003 and February 2004. The survey only interviewed persons living in households with telephones; however, statistical adjustments were made to compensate for non-telephone households. The survey did not interview homeless adults. The findings on food insecurity are based on 11,975 (CHIS 2003) and 18,113 (CHIS 2001) interviews of adults living in households with incomes below 200% of the federal poverty level (FPL). The food security measure used is an abbreviated six-item scale derived from the 18-item U.S. Household Food Security Instrument employed in national surveys and administered to CHIS respondents below 200% FPL. Survey respondents reported on their food security over the 12-months prior to the interview. The food stamp analysis is based on 4,605 (CHIS 2003) interviews with adults under age 65 living in households below 130% FPL with U.S. citizenship or legal residency. All differences are statistically significant at the 0.05 level. Estimates with coefficients of variation exceeding 30% are considered statistically unstable and thus unreliable.

Technical Note

To confirm the validity of our population estimates of food insecurity among California's low-income adults, we carried out a series of statistical comparisons with data for California drawn from the Current Population Survey Food Security Supplements (CPS-FSS Dec. 2001-2003). Prevalence estimates generated from these data represent adults living in low-income households that are food secure, food insecure, or food insecure with hunger based on the full 18-item U.S. Household Food Security Survey Instrument. Based on CPS data, we estimate there were approximately 6.6 million and 7.1 million adults in households with incomes under 200% FPL in California in 2001 and 2003, respectively. Among these adults, the approximate three-year probability-weighted average for food

insecurity was 31% (95% C.I., 29.3-32.6). Based on data captured in CHIS 2001 and CHIS 2003, we estimate the probability-weighted prevalence of food insecurity among adults in households with incomes below 200% FPL in California to be 29.1% in 2001 (95% C.I., 28.1-30.1) and 33.9 in 2003 (95% C.I., 32.7-35.1). The close proximity of these independent, probability-weighted estimates suggests that the population estimates and the probability-weighted changes in food insecurity presented in this brief are reasonable and valid indicators of change in food-insecurity status among the low-income adult population in California.

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Notes

- 1 GG Harrison, CA DiSogra, G Manalo-LeClair, J Aguayo, W Yen. *Over 2.2 Million Low-income California Adults Are Food Insecure; 658,000 Suffer Hunger*. Los Angeles CA: UCLA Center for Health Policy Research, November 2002.
- 2 The Federal Poverty Level (FPL) varies by household income and size. The 2003 Federal Poverty Level (100% FPL) for a family of four (two adults, two children) was \$18,660; 200% FPL for a family of four (two adults, two children) was \$37,320.
- 3 M Nord, M Andrews, S Carlson. Household Food Security in the United States, 2003. Washington DC: U.S. Department of Agriculture, Economic Research Service, Food Assistance and Nutrition Research Program, October 2004.
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