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Improving California Children’s Participation in Nutrition Programs

Technical Appendices

CONTENTS

Appendix A. Data Sources	2
Appendix B. Additional Tables	4

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Appendix A. Data Sources

This appendix describes the data used for the estimates presented in the main report and in Appendix B. Because the California Poverty Measure (CPM) data reflect both survey responses and imputed information, we first briefly review the relevant methodology used to create the CPM datasets.

The California Poverty Measure

The CPM is a joint effort of researchers at PPIC and the Stanford Center on Poverty and Inequality (CPI). We make use of data from 2012, 2013, and 2014. The CPM counts both cash and near-cash resources in family budgets (including nutrition programs, but also tax credits for low-income families and housing subsidies). Two types of necessary expenses are deducted from the “gross resource” calculation: out-of-pocket medical expenses and work-related expenses (principally child care and commuting). Poverty thresholds are based on representative amounts spent on food, clothing, shelter, and utilities and are adjusted county-by-county for variation in housing costs. Additional detail about the methodology and data sources can be found in the technical appendices to Bohn et al. (2013) and Wimer et al. (2015).

Imputing SNAP, school meals, and WIC participation and benefit amounts

The base survey data source used to create the CPM is the American Community Survey (ACS), which includes records from approximately 350,000 Californians each year. This large sample size is a strength of the survey. However, there are limitations in the questions asked about nutrition programs. In particular, participation in SNAP is asked, but benefit amounts are not asked. No information about WIC or school meals is included in the ACS. Therefore, we match family eligibility to program rules using information provided in the ACS about income sources and family relationships. We then assign program receipt to a share of families thus determined to be eligible and match targets based on annual county unduplicated enrollment in CalFresh, average monthly participation in WIC, and total school district participation in free and reduced-price school breakfast and school lunch. In the case of CalFresh, administrative data are matched at the county level by several categories of case type and race/ethnicity. In the case of WIC, administrative data are matched at the county level by several categories of race/ethnicity and age of participant (women, infants, and children). In the case of school meals, administrative data are matched at the Public Use Micro Area (PUMA) level, using a crosswalk to school districts developed by the Missouri Federal Statistical Research Data Center.

Amounts imputed for CalFresh are model-based predictions using California SNAP quality control records. Amounts imputed for school breakfast and lunch are drawn from the federal and state reimbursements for those meals and average daily attendance records for each year. Amounts imputed for WIC are based on Vericker and Zhen (2013) and are calculated before rebates for infant formula.

In this report we focus on students participating in free meals only. This is because students receiving CalFresh are directly certified (or, if they submit an application, are categorically eligible) for free school meals. It is important to note that for both WIC and school meals we use information about participation in the program (vouchers redeemed, meals claimed) rather than determinations of eligibility for the program.

Calculations of share of resources from nutrition programs

When we calculate the share of family resources made up of resources from nutrition programs, we use a gross resource calculation, meaning that we count cash income and cash equivalents from near-cash programs, but unlike in the CPM calculation we do not subtract necessary expenses. In addition, when families report zero or

negative total resources, we exclude them from the calculations. For purposes of the calculations of full participation, increased family resources from CalFresh are calculated at the family level, excluding ineligible members (e.g., those receiving Supplemental Security Income, or SSI). For example, for a family of three not participating, but eligible for CalFresh, we assign a benefit amount that accounts for that family size. Full participation scenarios also add amounts from WIC and free and reduced price meals for all children we calculate to be eligible to family resources. Therefore a school-aged child with a younger sibling could see family resources increase from WIC (or vice versa) in these scenarios.

Identification of public school students in the ACS

We use responses to questions about enrollment in public schooling along with the reported age of the child to determine whether a respondent is a public school student. We define students to be those ages 5–19 enrolled in a public school setting for the grades kindergarten through 12th grade.

Identification of school districts in the ACS

In order to match the geographic location of public school students given in the ACS, we use a crosswalk developed by the [Missouri Census Data Center](#) to map Census-provided Public Use Microdata Areas (PUMAs) to school districts in California.

Program caseloads and costs

[Figure 1 in the main report](#) is based on aggregate administrative data on program caseloads and costs from the Food and Nutrition Service, from the California Department of Social Services, and from the California Department of Education.

Appendix B. Additional Tables

Tables B1 through B4 provide county-level estimates where the text of the report provides only statewide estimates or estimates only for the largest counties. Certain counties cannot be separately identified in the ACS, and these counties are shown grouped in the tables below.

Our calculations of CalFresh eligibility proceed in four steps. First, we determine family configurations that map as closely as possible to units as defined by the program. This in practice means defining single adults as separate potential CalFresh units, even when they live in larger households, identifying SSI recipients and excluding them from potential CalFresh units, and identifying unauthorized immigrants and excluding them from potential CalFresh units. (These adults are, however, included as family members for purposes of calculating family resources and family poverty levels.) The technical appendix to Bohn et al. (2013) provides additional detail about this step. Second, we compare potential CalFresh unit cash resources to a gross income threshold. The ACS asks respondents to provide annual income while CalFresh eligibility is based on monthly income. Because incomes can change substantially over the course of year, we define the mid-range threshold to be 175 percent of the FPL, higher than the 165 percent of poverty threshold in effect over most of the years 2012–2014 for families with children. Third, we also explore the range of estimates that result from defining a lower gross income threshold (130% of FPL) and a higher threshold (200% of FPL). Clearly, the low threshold test includes the fewest children in error—that is, they would not meet the net income test of 100 percent of FPL—but excludes some truly eligible children. The reverse is true of the high threshold test.

Table B1 provides the results for the state, for counties and county groups, and for the five school districts with the largest number of enrolled students. The share of children potentially eligible for CalFresh across the threshold definitions varies quite widely, from 40 percent to 54 percent of young children statewide, and from 35 percent to 49 percent of public school students statewide. However, the rank ordering of counties tends to be similar across the definitions.

Table B2 provides county and school district estimates of participation in CalFresh and free school meals, while Table B3 provides estimates of participation in CalFresh and WIC. Finally, Table B4 includes county estimates of the actual percent of family resources from nutrition programs among children in poverty and the percent increase in family resources under the scenario of full enrollment in all nutrition programs for which children are eligible.

TABLE B1

Percent of children estimated to be income-eligible for CalFresh, counties and selected school districts

Geographic area	Age 0–5			Public school students (age 5–19)		
	Low estimate	Mid-range estimate	High estimate	Low estimate	Mid-range estimate	High estimate
Statewide	40%	50%	54%	35%	44%	49%
County						
Alameda	27	34	37	24	33	37
Alpine, Amador, Calaveras, Inyo, Mariposa, Mono, Tuolumne	31	46	51	25	35	40
Butte	41	53	56	34	42	48
Colusa, Glenn, Tehama, Trinity	39	58	64	32	49	54
Contra Costa	28	35	39	22	29	33
Del Norte, Lassen, Modoc, Plumas, Siskiyou	44	56	59	39	48	52
El Dorado	30	37	40	19	26	30
Fresno	60	70	73	50	60	65
Humboldt	44	55	57	34	43	50
Imperial	51	61	64	44	55	61
Kern	51	61	65	44	55	59
Kings	53	66	70	46	56	62
Lake, Mendocino	53	63	66	44	58	64
Los Angeles	46	56	59	41	51	56
Madera	69	76	78	49	58	65
Marin	21	29	33	14	20	24
Merced	60	70	73	50	62	67
Monterey, San Benito	51	61	66	39	49	55
Napa	26	43	47	17	27	32
Nevada, Sierra	30	33	36	23	36	39
Orange	32	41	45	28	37	41
Placer	23	34	38	15	21	26
Riverside	43	53	58	35	46	52
Sacramento	40	49	54	36	44	49
San Bernardino	49	59	64	41	52	57
San Diego	32	43	48	30	39	44
San Francisco	19	26	28	29	38	42
San Joaquin	47	58	63	38	48	54
San Luis Obispo	35	46	53	26	36	41
San Mateo	19	24	29	19	26	29
Santa Barbara	41	51	56	32	43	48
Santa Clara	22	30	33	20	27	30
Santa Cruz	33	50	53	27	38	41
Shasta	36	51	57	31	40	49
Solano	36	46	51	28	36	40
Sonoma	26	34	40	23	32	39
Stanislaus	48	58	62	40	51	56
Sutter, Yuba	42	52	58	38	48	54
Tulare	61	72	76	53	64	68
Ventura	38	46	51	27	36	40
Yolo	34	39	42	30	37	42
School district						
Elk Grove USD (Sacramento)	36	43	50	31	38	44
Fresno USD	63	73	78	56	67	71
Long Beach USD	48	57	60	43	52	57
Los Angeles USD	52	62	65	49	59	64
San Diego USD	37	46	50	35	44	49

SOURCE: Author calculations from the 2012–2014 California Poverty Measure.

NOTE: All estimates are subject to sampling variability, and all else equal, the range of estimates within which the true number falls is wider in less populous counties. Low estimate uses 130 percent of FPL as the gross income cut-off; the mid-range estimate uses 175 percent of FPL, and the high estimate uses 200 percent of FPL.

TABLE B2

CalFresh and free school meals program overlap among CalFresh-eligible public school students

	Both programs	Only school meals	Only CalFresh	Neither	Both programs	Only school meals	Only CalFresh	Neither
	A. Estimated number of children				B. Estimated percentage of children			
Statewide	1,842,000	608,000	48,000	331,000	65%	21%	2%	12%
Counties								
Alpine, Amador, Calaveras, Inyo, Mariposa, Mono, Tuolumne	6,000	0	0	2,000	67%	6%	5%	22%
Alameda	52,000	19,000	0	4,000	69%	25%	0%	5%
Butte	11,000	2,000	0	1,000	78%	13%	1%	8%
Colusa, Glenn, Tehama, Trinity	8,000	1,000	0	2,000	72%	10%	0%	18%
Contra Costa	30,000	14,000	1,000	8,000	57%	26%	2%	16%
Del Norte, Lassen, Modoc, Plumas, Siskiyou	5,000	1,000	0	2,000	64%	11%	5%	20%
El Dorado	4,000	1,000	0	2,000	59%	11%	3%	27%
Fresno	94,000	18,000	1,000	7,000	78%	15%	1%	6%
Humboldt	4,000	1,000	1,000	2,000	55%	10%	11%	25%
Imperial	16,000	2,000	0	3,000	77%	9%	1%	13%
Kern	69,000	21,000	0	9,000	69%	21%	0%	9%
Kings	11,000	2,000	1,000	3,000	67%	9%	8%	17%
Lake, Mendocino	9,000	2,000	1,000	2,000	66%	13%	8%	13%
Los Angeles	513,000	226,000	2,000	74,000	63%	28%	0%	9%
Madera	13,000	2,000	0	2,000	74%	14%	0%	13%
Marin	4,000	2,000	0	1,000	59%	29%	0%	12%
Merced	29,000	5,000	0	2,000	79%	15%	0%	6%
Monterey, San Benito	32,000	5,000	1,000	7,000	70%	11%	2%	16%
Napa	3,000	2,000	0	1,000	53%	32%	0%	15%
Nevada, Sierra	3,000	1,000	0	1,000	52%	10%	9%	29%
Orange	110,000	40,000	7,000	33,000	58%	21%	4%	18%
Placer	7,000	2,000	0	4,000	53%	17%	3%	27%

	Both programs	Only school meals	Only CalFresh	Neither	Both programs	Only school meals	Only CalFresh	Neither
	A. Estimated number of children				B. Estimated percentage of children			
Riverside	129,000	53,000	3,000	25,000	62%	25%	1%	12%
Sacramento	83,000	19,000	2,000	8,000	75%	17%	1%	7%
San Bernardino	159,000	29,000	4,000	22,000	74%	14%	2%	10%
San Diego	104,000	48,000	10,000	36,000	53%	24%	5%	18%
San Francisco	15,000	4,000	0	2,000	72%	19%	0%	8%
San Joaquin	51,000	12,000	0	5,000	75%	18%	0%	8%
San Luis Obispo	8,000	4,000	0	1,000	60%	33%	0%	7%
San Mateo	15,000	5,000	0	5,000	59%	18%	1%	22%
Santa Barbara	13,000	11,000	0	5,000	46%	39%	0%	16%
Santa Clara	47,000	12,000	3,000	15,000	61%	15%	4%	20%
Santa Cruz	9,000	2,000	1,000	2,000	66%	12%	6%	15%
Shasta	8,000	1,000	0	1,000	78%	9%	3%	10%
Solano	18,000	5,000	0	2,000	72%	21%	0%	6%
Sonoma	15,000	5,000	1,000	3,000	62%	21%	3%	14%
Stanislaus	38,000	9,000	0	6,000	71%	17%	0%	12%
Sutter, Yuba	11,000	2,000	0	3,000	69%	15%	0%	16%
Tulare	45,000	6,000	7,000	9,000	67%	9%	10%	13%
Ventura	31,000	12,000	1,000	8,000	60%	23%	2%	15%
Yolo	8,000	3,000	0	1,000	71%	22%	0%	7%
School districts								
Elk Grove USD	13,000	2,000	0	1,000	80%	14%	0%	6%
Fresno USD	30,000	6,000	0	1,000	82%	16%	0%	2%
Long Beach USD	22,000	7,000	0	1,000	73%	23%	0%	5%
Los Angeles USD	183,000	77,000	0	19,000	66%	28%	0%	7%
San Diego City USD	21,000	7,000	4,000	7,000	54%	19%	11%	17%

SOURCE: Author calculations from the 2012–2014 California Poverty Measure.

NOTE: Estimated numbers rounded to the nearest 1,000; percentages calculated from unrounded estimates. All estimates are subject to sampling variability, and all else equal, the range of estimates within which the true number falls is wider in less populous counties. Grouped counties cannot be separately identified in the ACS.

TABLE B3

CalFresh and WIC program overlap among CalFresh-eligible children ages 0–5

	Both programs	Only WIC	Only CalFresh	Neither	Both programs	Only WIC	Only CalFresh	Neither
	A. Estimated number of children				B. Estimated percentage of children			
Statewide	867,000	314,000	208,000	108,000	58%	21%	14%	7%
Counties								
Alpine, Amador, Calaveras, Inyo, Mariposa, Mono, Tuolumne	24,000	7,000	7,000	3,000	59%	16%	17%	8%
Alameda	2,000	1,000	1,000	0	51%	14%	25%	11%
Butte	4,000	1,000	2,000	0	59%	11%	25%	6%
Colusa, Glenn, Tehama, Trinity	3,000	1,000	0	0	59%	27%	9%	5%
Contra Costa	11,000	5,000	6,000	5,000	41%	19%	23%	17%
Del Norte, Lassen, Modoc, Plumas, Siskiyou	3,000	0	1,000	0	57%	11%	24%	8%
El Dorado	2,000	1,000	1,000	1,000	44%	18%	21%	18%
Fresno	49,000	9,000	7,000	2,000	73%	13%	11%	3%
Humboldt	2,000	1,000	1,000	1,000	47%	17%	23%	13%
Imperial	7,000	1,000	2,000	1,000	60%	11%	22%	6%
Kern	34,000	11,000	6,000	2,000	64%	21%	11%	4%
Kings	6,000	2,000	1,000	1,000	62%	21%	11%	6%
Lake, Mendocino	3,000	2,000	2,000	0	49%	23%	26%	3%
Los Angeles	272,000	106,000	26,000	22,000	64%	25%	6%	5%
Madera	7,000	2,000	1,000	0	67%	17%	13%	3%
Marin	2,000	1,000	1,000	1,000	41%	22%	12%	24%
Merced	13,000	2,000	3,000	0	70%	13%	15%	2%
Monterey, San Benito	16,000	5,000	4,000	1,000	60%	18%	16%	5%
Napa	2,000	1,000	0	1,000	52%	24%	10%	14%
Nevada, Sierra	1,000	0	0	0	61%	5%	22%	12%
Orange	53,000	24,000	9,000	8,000	56%	26%	10%	8%
Placer	2,000	1,000	3,000	2,000	25%	17%	35%	24%
Riverside	54,000	23,000	18,000	9,000	52%	22%	18%	9%
Sacramento	33,000	8,000	12,000	4,000	58%	14%	21%	6%
San Bernardino	67,000	16,000	22,000	6,000	60%	15%	20%	6%
San Diego	49,000	33,000	14,000	12,000	45%	31%	13%	11%

	Both programs	Only WIC	Only CalFresh	Neither	Both programs	Only WIC	Only CalFresh	Neither
	A. Estimated number of children				B. Estimated percentage of children			
San Francisco	7,000	2,000	1,000	1,000	62%	20%	13%	5%
San Joaquin	21,000	6,000	8,000	2,000	57%	16%	21%	6%
San Luis Obispo	3,000	1,000	2,000	2,000	36%	14%	30%	19%
San Mateo	7,000	2,000	2,000	2,000	51%	17%	18%	14%
Santa Barbara	8,000	7,000	1,000	1,000	49%	39%	9%	3%
Santa Clara	20,000	9,000	8,000	7,000	46%	20%	19%	15%
Santa Cruz	5,000	2,000	1,000	1,000	49%	27%	16%	8%
Shasta	4,000	0	2,000	0	60%	7%	28%	5%
Solano	6,000	2,000	4,000	2,000	43%	16%	27%	14%
Sonoma	6,000	2,000	3,000	1,000	50%	18%	24%	7%
Stanislaus	15,000	4,000	6,000	2,000	55%	14%	23%	9%
Sutter, Yuba	5,000	2,000	1,000	0	58%	21%	17%	4%
Tulare	24,000	4,000	6,000	2,000	67%	10%	18%	4%
Ventura	15,000	6,000	7,000	3,000	48%	19%	22%	11%
Yolo	4,000	1,000	1,000	0	63%	16%	15%	6%
School districts								
Elk Grove USD	5,000	1,000	1,000	1,000	60%	16%	17%	7%
Fresno USD	15,000	2,000	3,000	1,000	73%	12%	13%	3%
Long Beach USD	11,000	3,000	1,000	1,000	70%	16%	9%	5%
Los Angeles USD	101,000	33,000	10,000	6,000	67%	22%	7%	4%
San Diego City USD	12,000	6,000	3,000	2,000	51%	25%	14%	10%

SOURCE: Author calculations from the 2012–2014 California Poverty Measure.

NOTE: Estimated numbers rounded to the nearest 1,000; percentages calculated from unrounded estimates. All estimates are subject to sampling variability, and all else equal, the range of estimates within which the true number falls is wider in less populous counties. Grouped counties cannot be separately identified in the ACS.

TABLE B4

Family resources from nutrition programs among children in poverty, all counties

Geographic area	Children 0–5		Public school students	
	Nutrition program <u>actual</u> percent of resources among children in poverty	Percent <u>increase</u> in resources among children in poverty, full participation scenario	Nutrition program <u>actual</u> percent of resources among children in poverty	Percent increase in resources among children in poverty, full participation scenario
Statewide	21%	9%	19%	15%
County or county group				
Alameda	18	16	15	9
Alpine, Amador, Calaveras, Inyo, Mariposa, Mono, Tuolumne	25	5	26	32
Butte	25	17	28	19
Colusa, Glenn, Tehama, Trinity	34	5	32	4
Contra Costa	17	6	16	8
Del Norte, Lassen, Modoc, Plumas, Siskiyou	32	27	28	*
El Dorado	20	13	22	8
Fresno	34	6	33	12
Humboldt	16	5	25	*
Imperial	34	8	25	11
Kern	28	7	23	11
Kings	36	6	27	5
Lake, Mendocino	26	17	23	10
Los Angeles	21	8	18	14
Madera	42	5	31	11
Marin	13	6	12	10
Merced	30	8	26	8
Monterey, San Benito	20	5	20	5
Napa	10	7	13	9
Nevada, Sierra	18	1	15	6
Orange	19	8	17	12
Placer	11	11	15	8
Riverside	22	10	22	11
Sacramento	24	10	25	23
San Bernardino	28	9	27	8
San Diego	18	12	17	15
San Francisco	14	17	14	14
San Joaquin	29	5	24	5
San Luis Obispo	18	12	15	15
San Mateo	13	6	11	6
Santa Barbara	17	13	12	22
Santa Clara	17	7	15	9
Santa Cruz	15	16	17	17
Shasta	23	2	27	9

Geographic area	Children 0–5		Public school students	
	Nutrition program <u>actual</u> percent of resources among children in poverty	Percent <u>increase</u> in resources among children in poverty, full participation scenario	Nutrition program <u>actual</u> percent of resources among children in poverty	Percent increase in resources among children in poverty, full participation scenario
Solano	21	8	20	6
Sonoma	13	5	13	14
Stanislaus	23	8	21	11
Sutter, Yuba	32	3	22	6
Tulare	33	6	29	15
Ventura	15	7	14	13
Yolo	18	7	19	6

Source: Author calculations from the 2012-2014 California Poverty Measure.

Note: *=suppressed due to extreme value. All estimates are subject to sampling variability, and all else equal the range of estimates within which the true number falls is wider in less populous counties. Grouped counties cannot be separately identified in the ACS.



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