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SUBJECT: 2009 State-Level Estimates of Infants and Pre-School-Age Children at or Below 185 Percent of Poverty

TO: Debra Whitford
Director
Supplemental Food Programs Division

Attached are estimates of the number of infants and children in each State who were at or below 185 percent of poverty in 2009. The 2009 estimates are provided for use in the Women, Infants and Children (WIC) funding formula to determine States' fair shares of WIC food funds for fiscal year (FY) 2012. The 2009 estimates are recommended for use in FY 2012 funding allocations because they reflect the most recent data available. These estimates were primarily developed using a "shrinkage" methodology similar to that used to develop estimates used in the funding formula since FY 1995. Estimates for the territories were based on data from the 2000 Census. (Note: these estimates were produced using the Food and Nutrition Service's (FNS) historic shrinkage methodology for the purpose of use in the funding formula. These estimates are unrelated to the more comprehensive eligibles estimates recently produced by the Urban Institute under contract with FNS and soon to be published on the FNS website.)

Nationwide, the estimated number of infants and children at or below 185 percent of poverty increased by 9.38 percent from 2008 to 2009. The State-level estimates provided here are consistent with the national number of infants and children at or below 185 percent of poverty. Because the 2009 data will be updating 2008 data for funding formula purposes, comparisons are shown between these two years. We emailed the figures to Joan Carroll in a spreadsheet earlier this month.

Reflecting the effects of the recession, several States had substantial percentage increases in the estimated counts of low-income infants and children from 2008 to 2009. States with an *increase* of 15 percent or more are: Alaska, Colorado, Delaware, Hawaii, Illinois, Iowa, Maryland, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, Utah, Washington, and Wyoming. The one State with a *decrease* of 10 percent or more is West Virginia.

Attached is a brief summary of the estimates and the shrinkage methodology used to develop them. We recommend releasing these materials to the States and other interested organizations on request.

For Jay Hirschman
Director
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Attachments

cc: Tim O'Connor
Anne Bartholomew
Joan Carroll
Patty Davis

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2009 STATE-LEVEL ESTIMATES OF
INFANTS AND CHILDREN AT OR BELOW 185 PERCENT OF POVERTY

Overview

Prior to Fiscal Year (FY) 1995, estimates of the number of infants and children at or below 185 percent of poverty were available for Census years only. For the FY 1995-2012 funding allocations, annual estimates have been developed using a statistical technique known as "shrinkage."

Shrinkage is a statistical approach, which combines information from survey samples with other data. For the State estimates of the number of infants and children at or below 185 percent of poverty, shrinkage is used to combine income data from the March Current Population Survey (CPS) with an estimation model that uses other State-level economic data that have been demonstrated to have value in predicting the prevalence of low-income infants and children.

Food Nutrition Service (FNS) has used this methodology to develop State-level estimates of infants and children at or below 185 percent of poverty for 1992-2008. We have now produced estimates for 2009.

Since the territories are not included in the CPS, FNS estimates assume that Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands have the same share of the number of infants and children at or below 185 percent of poverty that they did in 1999. These estimates are based on the 2000 Census (which uses 1999 income data[1].)

As the most current data, the 2009 estimates should be used for funding allocations for FY 2012.

Results

For 2009, the total number of infants and children at or below 185 percent of poverty in the United States, Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands was estimated to be 9.7 million. Table 1 provides estimates of the number of infants and children at or below 185 percent of poverty in 2009 in each State and territory and the national totals. Also shown are the 2008 shrinkage estimates.

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[1] For Puerto Rico, the Census Bureau provided the number of infants and children at or below 185 percent of poverty. For the other territories, the Census Bureau only provided the number of infants and children below 185 percent of poverty and did not provide data on those who were exactly at 185 percent of poverty.

Use of the Estimates in the Funding Formula

State-level estimates of infants and children at or below 185 percent of poverty are used in the funding formula to determine each State's share of the national total of infants and children at or below 185 percent of poverty. This percentage share is used to determine a State's "fair share" of food funds. For example, for a State with 1 percent of the national total of infants and children at or below 185 percent of poverty, the fair share would be 1 percent of the total food funds.

Estimates of pregnant, postpartum and breastfeeding women at or below 185 percent of poverty are not used in determining fair share for the allocation process. Women are estimated as a direct constant function of the number of infants at or below 185 percent of poverty. As a result, inclusion of estimates of women would have no significant impact on the percentage distribution of people at or below 185 percent of poverty among States. Therefore, for simplicity, estimates of pregnant, postpartum and breastfeeding women are not included in the calculation.

Shrinkage Methodology for Estimates of the Number of Infants and Children at or Below 185 Percent of Poverty

For the estimates, shrinkage is used to develop estimates of the proportion of infants and children age 0-4 in each State in households with incomes at or below 185 percent of poverty. These proportions are then applied to State population estimates of infants and children by single age category.

The shrinkage approach combines estimates obtained directly through surveys (i.e., CPS direct sample data) with estimates produced by an econometric model that used State-level economic data. The direct sample estimates used for the 2009 estimates were the March 2010 CPS estimates of the proportion of infants and children 0-4 at or below 185 percent of poverty in each State. The econometric model used March CPS data pertaining to 2000-2009, Census 2000 data pertaining to 1999, and administrative data pertaining to 1999-2009 (from individual income tax returns) for all the States to obtain the 2009 estimates for any one State.

The data from the econometric model provides more information to use in developing an estimate. The "shrinkage" estimate that results from the combination of the CPS with these additional data provides an estimate that is more precise than the CPS sample estimates taken alone. The shrinkage technique averages the sample and the model estimates using weights that reflect the relative precision of each estimate[2]. Thus, in cases where the CPS estimate has a high standard error, the model estimate would tend to receive more weight than it does in cases where the CPS standard error is lower.

The shrinkage estimates are, for many purposes, superior to either the direct sample estimates or the model estimates. In particular, the shrinkage estimates have substantially lower standard errors than the direct sample estimates.

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[2] Specifically, the weights are chosen to minimize mean squared error (MSE).

2009 Estimates

The model estimates were developed using a regression model, which estimates the proportion of infants and children 0-4 at or below 185 percent of poverty. As in prior years, the regression model for 2009 incorporates both Census and individual income tax data.

The final model for the 2009 estimates had the following predictors:

- The poverty rate for children, based on exemptions claimed for children on individual income tax returns with adjusted gross incomes below the federal poverty level

- The percentage of nonelderly individuals who were not claimed on tax returns according to individual income tax data and

- The percentage of persons ages 16 and over who were unemployed according to Census 2000

- The percentage of households that had earnings according to Census 2000

- The percentage of elderly individuals at or below 100 percent of the federal poverty level according to Census 2000.

- Median household income according to Census 2000

- A census regression residual

TABLE 1
STATE-LEVEL ESTIMATES OF INFANTS AND CHILDREN AT OR BELOW 185% OF POVERTY, 2008 AND 2009

State	2008 Infants	2008 Children	2008 Inf+Child	2009 Infants	2009 Children	2009 Inf+Child
Alabama	29,799	118,214	148,013	32,422	132,072	164,494
Alaska	4,504	16,342	20,846	5,251	19,955	25,206
Arizona	53,157	214,483	267,640	54,278	217,360	271,638
Arkansas	22,039	86,660	108,699	21,629	87,491	109,120
California	230,746	895,457	1,126,203	243,181	964,717	1,207,898
Colorado	23,884	95,135	119,019	27,597	109,673	137,270
Connecticut	10,022	41,449	51,471	11,102	45,594	56,696
Delaware	3,987	15,623	19,610	4,651	18,651	23,302
DC	3,448	12,655	16,103	3,633	13,562	17,195
Florida	96,087	382,899	478,986	106,399	428,478	534,877
Georgia	67,770	269,263	337,033	73,369	299,693	373,062
Hawaii	6,764	25,179	31,943	7,798	29,363	37,161
Idaho	11,944	46,193	58,137	12,276	48,624	60,900
Illinois	64,193	254,249	318,442	78,637	309,466	388,103
Indiana	37,860	151,006	188,866	42,034	169,174	211,208
Iowa	13,871	54,024	67,895	15,753	63,125	78,878
Kansas	17,120	66,314	83,434	17,889	70,634	88,523
Kentucky	28,416	113,276	141,692	27,103	111,134	138,237
Louisiana	32,923	122,986	155,909	32,189	129,017	161,206
Maine	5,559	23,073	28,632	5,742	23,832	29,574
Maryland	19,646	77,056	96,702	24,105	95,807	119,912
Massachusetts	19,038	76,090	95,128	22,662	90,638	113,300
Michigan	47,900	192,715	240,615	52,510	208,455	260,965
Minnesota	20,363	80,285	100,648	24,633	98,157	122,790
Mississippi	24,966	96,970	121,936	25,327	103,184	128,511
Missouri	33,408	130,681	164,089	36,255	145,247	181,502
Montana	6,038	22,937	28,975	6,124	23,659	29,783
Nebraska	10,296	39,976	50,272	10,735	41,263	51,998
Nevada	15,714	62,457	78,171	17,289	70,077	87,366
New Hampshire	3,104	13,269	16,373	3,628	15,437	19,065
New Jersey	25,875	103,827	129,702	32,901	132,330	165,231
New Mexico	15,676	62,053	77,729	16,527	66,153	82,680
New York	92,691	361,141	453,832	106,811	420,213	527,024
North Carolina	61,958	242,485	304,443	63,409	255,295	318,704
North Dakota	3,574	13,311	16,885	3,436	12,891	16,327
Ohio	61,946	247,139	309,085	65,779	263,517	329,296
Oklahoma	27,280	105,894	133,174	27,427	108,943	136,370
Oregon	20,117	79,268	99,385	21,431	85,466	106,897
Pennsylvania	51,339	205,810	257,149	52,104	211,856	263,960
Rhode Island	4,619	18,517	23,136	5,028	19,701	24,729
South Carolina	28,620	114,043	142,663	27,176	112,147	139,323
South Dakota	5,454	21,122	26,576	5,928	22,717	28,645
Tennessee	42,759	164,609	207,368	43,197	172,844	216,041
Texas	203,824	807,943	1,011,767	221,110	887,706	1,108,816
Utah	18,534	70,177	88,711	21,936	83,372	105,308
Vermont	2,228	8,884	11,112	2,405	9,594	11,999
Virginia	37,986	149,821	187,807	38,953	155,224	194,177
Washington	31,581	124,013	155,594	36,287	146,508	182,795
West Virginia	10,362	41,682	52,044	9,037	37,653	46,690
Wisconsin	24,704	97,885	122,589	28,129	111,992	140,121
Wyoming	2,710	10,154	12,864	3,114	12,208	15,322
United States	1,738,403	6,846,694	8,585,097	1,878,326	7,511,869	9,390,195
PR	55,463	218,439	273,902	59,927	239,661	299,588
VI	1,383	5,447	6,830	1,494	5,976	7,470
Guam	2,219	8,743	10,963	2,398	9,593	11,991
Am Samoa	1,724	6,787	8,510	1,862	7,446	9,308
Northern Mariana	1,114	3,771	4,885	1,204	4,137	5,341
Total- US + territories	1,800,305	7,089,881	8,890,186	1,945,211	7,778,682	9,723,893