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SUBJECT: 2008 State-Level Estimates of Infants and Pre-School-Age Children at or Below 185 Percent of Poverty
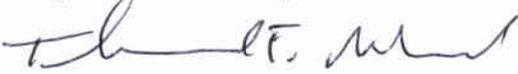
TO: Debra Whitford
Director
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Attached are estimates of the number of infants and children in each State who were at or below 185 percent of poverty in 2008. The 2008 estimates are provided for use in the WIC funding formula to determine States' fair shares of WIC food funds for Fiscal Year (FY) 2011. The 2008 estimates are recommended for use in FY 2011 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.

Nationwide, the estimated number of infants and children at or below 185 percent of poverty increased by 3.16 percent from 2007 to 2008. 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 2008 data will be updating 2007 data for funding formula purposes, comparisons are shown between these two years.

Several States had substantial percentage increases or decreases in the estimated counts of low income infants and children from 2007 to 2008. States with an *increase* of 10 percent or more are: Alabama, the District of Columbia, Idaho, Kentucky, Louisiana, Mississippi, Montana, Nevada, New Mexico, North Carolina, Oregon, South Carolina, South Dakota, Washington, and West Virginia. The States with *decreases* of 10 percent or more are Massachusetts and New Hampshire.

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
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Attachments

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2008 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 1995-2011 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 1992-2007. We have now produced estimates for 2008.

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 2008 estimates should be used for funding allocations for FY 2011.

Results

For 2008, 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 8.9 million. Table 1 provides estimates of the number of infants and children at or below 185 percent of poverty in 2008 in each State and territory and the national totals. Also shown are the 2007 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 2008 estimates were the March 2009 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 2000-2008, Census 2000 data pertaining to 1999, and administrative data pertaining to 1999-2008 (from individual income tax returns) for all the States to obtain the 2008 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).

2008 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 2008 incorporates both Census and individual income tax data.

The final model for the 2008 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, 2007 AND 2008

State	2007 Infants	2007 Children	2007 Inf+Child	2008 Infants	2008 Children	2008 Inf+Child
Alabama	26,620	104,560	131,180	29,799	118,214	148,013
Alaska	4,112	15,697	19,809	4,504	16,342	20,846
Arizona	50,310	193,608	243,918	53,157	214,483	267,640
Arkansas	20,538	79,825	100,363	22,039	86,660	108,699
California	225,975	868,575	1,094,550	230,746	895,457	1,126,203
Colorado	25,325	98,765	124,090	23,884	95,135	119,019
Connecticut	10,956	45,064	56,020	10,022	41,449	51,471
Delaware	4,035	15,713	19,748	3,987	15,623	19,610
DC	3,156	10,965	14,121	3,448	12,655	16,103
Florida	95,342	364,597	459,939	96,087	382,899	478,986
Georgia	68,110	265,569	333,679	67,770	269,263	337,033
Hawaii	6,416	24,154	30,570	6,764	25,179	31,943
Idaho	10,145	38,804	48,949	11,944	46,193	58,137
Illinois	61,578	245,555	307,133	64,193	254,249	318,442
Indiana	36,413	142,641	179,054	37,860	151,006	188,866
Iowa	14,521	55,493	70,014	13,871	54,024	67,895
Kansas	17,671	69,210	86,881	17,120	66,314	83,434
Kentucky	25,598	99,596	125,194	28,416	113,276	141,692
Louisiana	25,229	112,578	137,807	32,923	122,986	155,909
Maine	5,253	21,182	26,435	5,559	23,073	28,632
Maryland	19,233	75,742	94,975	19,646	77,056	96,702
Massachusetts	24,029	95,855	119,884	19,038	76,090	95,128
Michigan	49,187	199,558	248,745	47,900	192,715	240,615
Minnesota	21,865	84,183	106,048	20,363	80,285	100,648
Mississippi	21,605	84,650	106,255	24,966	96,970	121,936
Missouri	33,122	128,525	161,647	33,408	130,681	164,089
Montana	5,257	20,245	25,502	6,038	22,937	28,975
Nebraska	10,486	40,734	51,220	10,296	39,976	50,272
Nevada	14,542	55,156	69,698	15,714	62,457	78,171
New Hampshire	3,784	14,907	18,691	3,104	13,269	16,373
New Jersey	25,882	107,799	133,681	25,875	103,827	129,702
New Mexico	14,219	55,341	69,560	15,676	62,053	77,729
New York	96,554	381,988	478,542	92,691	361,141	453,832
North Carolina	55,334	214,708	270,042	61,958	242,485	304,443
North Dakota	3,508	12,787	16,295	3,574	13,311	16,885
Ohio	62,871	249,107	311,978	61,946	247,139	309,085
Oklahoma	26,393	101,896	128,289	27,280	105,894	133,174
Oregon	18,253	71,055	89,308	20,117	79,268	99,385
Pennsylvania	47,490	187,859	235,349	51,339	205,810	257,149
Rhode Island	4,404	17,846	22,250	4,619	18,517	23,136
South Carolina	26,729	102,256	128,985	28,620	114,043	142,663
South Dakota	4,880	18,638	23,518	5,454	21,122	26,576
Tennessee	39,736	153,549	193,285	42,759	164,609	207,368
Texas	201,398	785,473	986,871	203,824	807,943	1,011,767
Utah	19,626	73,420	93,046	18,534	70,177	88,711
Vermont	2,224	9,441	11,665	2,228	8,884	11,112
Virginia	40,735	158,543	199,278	37,986	149,821	187,807
Washington	27,869	106,836	134,705	31,581	124,013	155,594
West Virginia	9,055	36,385	45,440	10,362	41,682	52,044
Wisconsin	25,204	99,918	125,122	24,704	97,885	122,589
Wyoming	2,756	10,184	12,940	2,710	10,154	12,864
United States	1,695,533	6,626,735	8,322,268	1,738,403	6,846,694	8,585,097
PR	54,095	211,421	265,516	55,463	218,439	273,902
VI	1,348	5,272	6,620	1,383	5,447	6,830
Guam	2,165	8,462	10,627	2,219	8,743	10,963
Am Samoa	1,681	6,569	8,250	1,724	6,787	8,510
Northern Mariana	1,087	3,650	4,737	1,114	3,771	4,885
Total- US + territories	1,755,909	6,862,109	8,618,018	1,800,305	7,089,881	8,890,186