USDA

**United States
Department of
Agriculture**

**Food and
Nutrition
Service**

**3101 Park
Center Drive**

**Alexandria, VA
22302-1500**

SEP 1 8 2009

SUBJECT: 2007 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 2007. The 2007 estimates are provided for use in the WIC
funding formula to determine States' fair shares of WIC food funds for Fiscal Year (FY)
2010. The 2007 estimates are recommended for use in FY 2010 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
has increased by 3.57 percent from 2006 to 2007. 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 2007 data will be updating 2006 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 2006 to 2007. States with an *increase* of 10 percent
or more are: Massachusetts, Minnesota, New Hampshire, New York, Rhode Island, and
Virginia. The States with the largest percentage *decreases* (9 percent or more) are West
Virginia and Maryland.

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.

Sincerely,

Jay Hirschman
Director
Special Nutrition Staff
Office of Research and Analysis

Attachments

2007 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 1995-2010 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 1992-2006. We have now produced estimates for 2007.

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 as they did in 1999. These estimates are based on the 2000 Census (which uses 1999 income data[1].)

As the most current data, the 2007 estimates should be used for funding allocations for FY 2010.

Results

For 2007, 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 8.6 million. Table 1 provides estimates of the number of infants and children at or below 185 percent of poverty in 2007 in each State and territory and the national totals. Also shown are the 2006 shrinkage estimates.

---

[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 2007 estimates were the March 2008 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 2000-2007, Census 2000 data pertaining to 1999, and administrative data pertaining to 1999-2007 (from individual income tax returns) for all the States to obtain the 2007 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.

---

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

2007 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 2007 considers incorporates both Census and individual income tax data.

The final model for the 2007 estimates had the following predictors:

- Median household income according to Census 2000

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

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

The model also reflects an adjustment, which attempts to correct for error in the model relative to the result that would be obtained from a full Census. The inclusion of data from Census 2000 increases the accuracy of the estimation model.

TABLE 1
STATE-LEVEL ESTIMATES OF INFANTS AND CHILDREN AT OR BELOW 185% OF POVERTY, 2006 AND 2007

State	2006 Infants	2006 Children	2006 Inf+Child	2007 Infants	2007 Children	2007 Inf+Child
Alabama	26,698	105,537	132,235	26,620	104,560	131,180
Alaska	4,131	15,096	19,227	4,112	15,697	19,809
Arizona	52,310	200,042	252,352	50,310	193,608	243,918
Arkansas	21,789	83,933	105,722	20,538	79,825	100,363
California	215,937	816,581	1,032,518	225,975	868,575	1,094,550
Colorado	25,632	99,684	125,316	25,325	98,765	124,090
Connecticut	10,404	42,895	53,299	10,956	45,064	56,020
Delaware	3,933	15,115	19,048	4,035	15,713	19,748
DC	3,052	10,633	13,685	3,156	10,965	14,121
Florida	94,327	353,720	448,047	95,342	364,597	459,939
Georgia	63,975	247,822	311,797	68,110	265,569	333,679
Hawaii	6,888	23,236	30,124	6,416	24,154	30,570
Idaho	10,347	39,552	49,899	10,145	38,804	48,949
Illinois	59,367	235,149	294,516	61,578	245,555	307,133
Indiana	34,954	139,666	174,620	36,413	142,641	179,054
Iowa	14,861	57,503	72,364	14,521	55,493	70,014
Kansas	16,376	64,705	81,081	17,671	69,210	86,881
Kentucky	25,680	103,436	129,116	25,598	99,596	125,194
Louisiana	24,177	107,630	131,807	25,229	112,578	137,807
Maine	5,010	20,480	25,490	5,253	21,182	26,435
Maryland	21,547	82,914	104,461	19,233	75,742	94,975
Massachusetts	20,958	84,600	105,558	24,029	95,855	119,884
Michigan	48,747	197,356	246,103	49,187	199,558	248,745
Minnesota	19,503	75,335	94,838	21,865	84,183	106,048
Mississippi	21,706	82,318	104,024	21,605	84,650	106,255
Missouri	30,896	120,058	150,954	33,122	128,525	161,647
Montana	5,278	20,227	25,505	5,257	20,245	25,502
Nebraska	10,265	40,210	50,475	10,486	40,734	51,220
Nevada	14,003	53,117	67,120	14,542	55,156	69,698
New Hampshire	3,388	13,539	16,927	3,784	14,907	18,691
New Jersey	25,374	104,717	130,091	25,882	107,799	133,681
New Mexico	13,928	53,666	67,594	14,219	55,341	69,560
New York	84,835	331,194	416,029	96,554	381,988	478,542
North Carolina	57,523	219,509	277,032	55,334	214,708	270,042
North Dakota	3,524	12,965	16,489	3,508	12,787	16,295
Ohio	63,135	252,965	316,100	62,871	249,107	311,978
Oklahoma	27,593	103,544	131,137	26,393	101,896	128,289
Oregon	19,211	74,077	93,288	18,253	71,055	89,308
Pennsylvania	49,352	198,668	248,020	47,490	187,859	235,349
Rhode Island	3,659	14,497	18,156	4,404	17,846	22,250
South Carolina	25,644	99,501	125,145	26,729	102,256	128,985
South Dakota	4,671	17,738	22,409	4,880	18,638	23,518
Tennessee	36,081	141,125	177,206	39,736	153,549	193,285
Texas	190,045	738,734	928,779	201,398	785,473	986,871
Utah	18,781	70,729	89,510	19,626	73,420	93,046
Vermont	2,014	8,603	10,617	2,224	9,441	11,665
Virginia	36,091	140,813	176,904	40,735	158,543	199,278
Washington	29,340	110,801	140,141	27,869	106,836	134,705
West Virginia	9,833	40,509	50,342	9,055	36,385	45,440
Wisconsin	24,130	95,653	119,783	25,204	99,918	125,122
Wyoming	2,640	10,113	12,753	2,756	10,184	12,940
United States	1,643,543	6,392,210	8,035,753	1,695,533	6,626,735	8,322,268
PR	52,436	203,939	256,375	54,095	211,421	265,516
VI	1,307	5,085	6,393	1,348	5,272	6,620
Guam	2,098	8,163	10,261	2,165	8,462	10,627
Am Samoa	1,629	6,336	7,966	1,681	6,569	8,250
Northern Mariana	1,054	3,521	4,574	1,087	3,650	4,737
Total- US + territories	1,702,068	6,619,254	8,321,322	1,755,909	6,862,109	8,618,018