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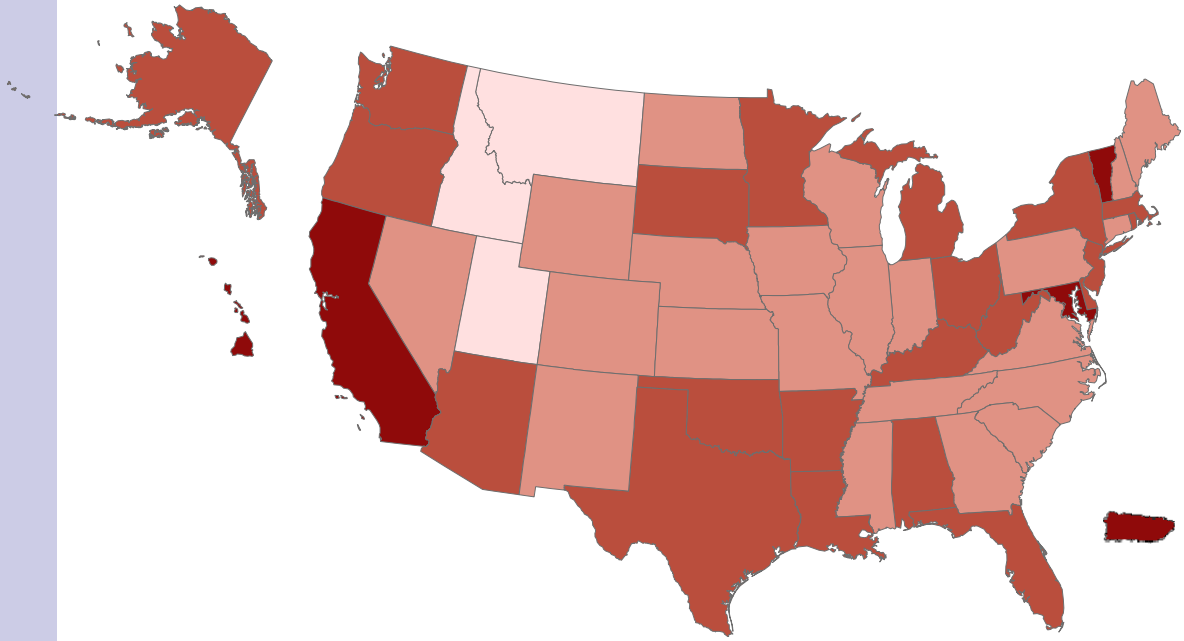

Volume I

National and State-Level Estimates of Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Eligibles and Program Reach, 2011

Final Report

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Final Report

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Executive Summary

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides supplemental nutritious foods, nutrition education (including breastfeeding promotion and support), and referrals to health care and other social services at no charge. WIC serves low-income pregnant, postpartum, and breastfeeding women, infants, and children up to age 5 who are at nutritional risk. Because WIC is a Federal grant program for which Congress authorizes a specific amount of funds each year, the Food and Nutrition Service (FNS) requires estimates of the total number of individuals eligible for the program to anticipate funding needs.

This report provides estimates of the population that met WIC eligibility criteria in 2011. National eligibility is shown for each categorical subpopulation: infants, children age 1 through 4 by single year of age, pregnant women, postpartum women who are breastfeeding, and postpartum women who are not breastfeeding. The ratio of program participants to eligibles, defined as the coverage rate, is provided for all WIC participants and for these subpopulations. The report also shows trends in the estimated growth in WIC eligible and coverage rates from 2000 through 2011. Estimates of WIC eligibility are provided for the seven FNS regions and each State for 2011.

Methods

The estimation procedures used in this report build on the methodology recommended by the Committee on National Statistics of the National Research Council (CNSTAT) in 2003. National eligibility estimation requires nationally representative data and numerous assumptions that take into account program certification periods, individuals' enrollment in other programs, and mothers' breastfeeding choices. The 2011 national estimates use the 2012 Current Population Survey, Annual Social and Economic Supplement (the CPS-ASEC, formerly referred to as the March supplement), as originally recommended by CNSTAT. The State estimates use the 2011 American Community Survey (ACS) and are converted to shares of the national estimates to produce State-specific eligibility estimates consistent with national totals. The number eligible in the territories is based on data from the ACS for Puerto Rico (the 2011 PRCS) and estimates of the population in other territories. Standard error of the estimates are calculated for national, regional, State, and Puerto Rico estimates.

The estimation requires numerous assumptions. Demographically eligible individuals are first identified in the surveys. These weighted counts are adjusted based on recent Census population estimates. Demographically eligible individuals are income eligible if their families' annual cash income is less than 185 percent of the federal poverty guideline, and they are adjunctively eligible if they participate in another safety net program. Individuals in families that participate in the Supplemental Nutrition Assistance Program (SNAP), the Temporary Assistance for Needy Families (TANF) program, or the Medicaid program at any point during the

calendar year are adjunctively eligible. Partial-year eligibility is estimated based on longitudinal data from the 2004 and 2008 Survey of Income and Program Participation panels, which capture relationships between monthly and annual income and program participation. An adjustment for nutritional risk takes into account that a small share of otherwise-eligible individuals might not be found to be at nutritional risk. For postpartum mothers, eligibility estimation requires data on the portion of mothers who begin breastfeeding, as well as when they stop.

Results

How Many People Are Eligible for WIC in the Average Month of 2011, and What Portion Received Benefits?

In CY 2011, the methods described above suggest that 14.3 million individuals were eligible for WIC benefits in an average month (Exhibit ES.1). This is an estimate and could differ from the true number of WIC eligibles because of methodological limitations (for example, the adjustment for partial-year eligibility is an approximation) and because the estimate is based on a sample of the population (different samples could lead to different estimates). Considering potential errors due to the sample (sample variability), there is a 90 percent likelihood that the true number of WIC eligibles falls in the range from 13.8 million to 14.7 million.

Infants accounted for 17.6 percent of the total WIC-eligible individuals; children ages 1 through 4 comprised 62.3 percent of all eligible individuals (with approximately equal shares across the single years of age); pregnant women accounted for 9.1 percent; and the remaining 11.1 percent were postpartum women.

Estimating the number of people who are eligible for WIC allows estimation of WIC coverage rates—the percent of WIC-eligible people who receive benefits from the program. During CY 2011, 9.0 million individuals participated in the program in an average month, producing a total coverage rate (participants divided by eligibles) of 62.7 percent. Coverage rates vary across the subgroups. The coverage rate for children was estimated at 53.6 percent, lower than the rates for other eligible groups. Infants and postpartum non-breastfeeding women had the highest coverage rates at 83.4 and 81.2 percent, respectively.

Did WIC Eligibility Change from 2010 to 2011?

Our best estimate of total WIC eligibility in 2011 is 1.9 percent lower than our best estimate for 2010 estimate (Exhibit ES.2). The overall decline is due primarily to a reduction of 3.6 percent in the estimated number of young children eligible for WIC – the largest single group of participants. The number of young children estimated to be WIC eligible has declined since 2010 for two reasons. First, updated Census population figures show fewer young children in the population than previously estimated. Second, the percentage of young children estimated eligible for WIC fell from 55.6 percent in 2010 to 54.3 percent in 2011, which is consistent with an improving economy. However, from a statistical standpoint, we cannot rule

out the possibility that the changes in the WIC eligibility estimates for infants and young children are due solely to sampling variability in the CPS-ASEC survey data.[1]

Exhibit ES.1: WIC National-Level Eligibles and Coverage Rates by Participant Group in an Average Month: CY 2011

Participant Group	Number Eligible	Percent of Total Eligible	Number Participating	Coverage Rate
Infants	2,516,309	17.6%	2,097,958	83.4%
Total Children Ages 1-4	8,888,005	62.3%	4,759,632	53.6%
Children Age 1[a]	2,325,258	16.3%		
Children Age 2[a]	2,154,671	15.1%		
Children Age 3[a]	2,180,779	15.3%		
Children Age 4[a]	2,227,296	15.6%		
Pregnant Women	1,294,668	9.1%	899,686	69.5%
Postpartum Women	1,578,471	11.1%	1,199,599	76.0%
Breastfeeding Women	811,356	5.7%	576,815	71.1%
Non-Breastfeeding Women	767,116	5.4%	622,784	81.2%
All Participant Groups	**14,277,453**	**100.0%**	**8,956,875**	**62.7%**

Source: 2012 CPS-ASEC for U.S. estimate, PRCS and Census for territories, WIC Administrative Data
Notes:
[a] WIC coverage rates for children by single year of age are not provided because participation data are not available by single year of age.

Exhibit ES.2: Estimates of the Average Monthly Number of Individuals Eligible for WIC by Participant Group: A Comparison of the Change from Calendar Year 2010 to 2011

NOTE: This table includes estimates for the territories.

Participant Group	Total Eligibles		Percent Change
	2011	2010	
Infants	2,516,309	2,535,074	-0.7%
Total Children Ages 1-4	8,888,005	9,224,455	-3.6%
Pregnant Women	1,294,668	1,304,322	-0.7%
Postpartum Breastfeeding Women	811,356	664,619	22.1%*
Postpartum Non-Breastfeeding Women	767,116	821,646	-6.6%
Total WIC Eligibles	14,277,453	14,550,116	-1.9%

Source: March 2012 and March 2011 CPS; 2004 and 2008 SIPP panels; 2001-2002, 2003-2004, 2005-2006 NHANES
*Significant at the 90 percent level of confidence. Changes not marked as significant could be due solely to sampling variability in the survey.

[1] When tested at a 90 percent level of confidence, the changes are not statistically significant. In other words, we cannot be 90 percent certain that the changes in infant and child eligibility are true changes, rather than being due to sampling variability in the surveys.

In contrast to the estimated reduction in the number of WIC-eligible young children, there was an estimated increase of 22 percent in the number of postpartum women eligible as breastfeeding mothers. (This change is statistically significant.) The increase is due to a large increase in the breastfeeding rate for WIC mothers between 2010 and 2011, according to the breastfeeding survey used in the estimation process (conducted by Abbott Laboratories). For WIC mothers, the survey shows an increase in the in-hospital breastfeeding rate from 53 percent in 2010 to 59 percent in 2011, and an increase in the rate at 6 months from 19 percent to 27 percent. Changes in the prevalence of breastfeeding have a substantial impact on the average monthly eligibility of postpartum women due to the longer period of time that breastfeeding mothers can maintain WIC eligibility (up to one year), as opposed to six months of eligibility for non-breastfeeding mothers. A different survey of breastfeeding prevalence (the National Immunization Survey)[2] shows higher breastfeeding rates but has shown a smoother trend over time; further analysis would be helpful to refine this aspect of the estimation.

Since 2000, How Has Eligibility Changed On Average?

Since 2000 (the first year in the current series of estimates), growth in WIC eligibility has averaged 1.2 percent per year. Despite the decline in the estimate from 2010, the 2011 eligibility estimate is 14.4 percent higher than the 2000 estimate (Exhibit ES.3). Most of the increase in total WIC eligibility since 2000 is due to a 20.1 percent increase in the estimated number of young children eligible for the program; the number of eligible infants and eligible pregnant women is estimated to be 4.1 percent higher in 2011 than in 2000, while the population of eligible postpartum women is estimated to have increased by 11.2 percent. During the same period, the number of births in the United States mainland and territories declined by 3.1 percent (from 4.2 million in 2000 to 4.0 million in 2011); the fact that estimated eligibility increased despite a decline in births suggests that the share of all infants and young children who are eligible for WIC has increased over the decade.[3]

How does the Coverage Rate Vary Over Time?

Estimated coverage rates by subpopulation fluctuate over the 2000 to 2011 time frame (Exhibit ES.4). The current estimated coverage rate of about 83 percent for infants is higher than the estimated rate for 2000 (just under 80 percent) but lower than the highest rate estimated for the period (88 percent in 2002) and is similar to the rates since 2007, which have ranged from about 82 percent to 85 percent. The estimated coverage rate for children, while considerably lower than for other groups, has increased from about 48 percent in 2000 to 54 percent in 2011.

[2] Centers for Disease Control, National Immunization Survey webpage, "Breastfeeding among U.S. Children born 2000-2009, CDC National Immunization Survey", http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm, accessed November 8, 2013.

[3] Data published by the Center for Disease Control, National Vital Statistics Reports, Volume 50, Number 5,Table 10, February 12, 2002 and Volume 61 Number 2, Table 6, October 3, 2012. (Estimates for 2011 are preliminary.)

Exhibit ES.3: Growth in WIC Eligible Population, 2000-2011

NOTE: This table includes estimates for the territories

Participant Group	Cumulative Growth	Average Annual Growth
Infants	4.1%	0.4%
Total Children Ages 1-4	20.1%	1.7%
Pregnant Women	4.1%	0.4%
All Postpartum Women	11.2%	1.0%
All Participant Groups	14.4%	1.2%

Source: CPS-ASEC, ACS, PRCS, Census International Data Base, WIC Administrative Data

Note, however, that the WIC eligibility estimates that underlie the coverage rate estimates are not precisely comparable across the period. In particular, whenever new decennial census information is available, that information is incorporated into the CPS-ASEC weighting and into the weight adjustment procedures used for the WIC eligibility estimates, which can cause discontinuities in the series. For example, the 2010 decennial census showed a substantial decrease in the number of infants relative to the figures that had been estimated prior the availability of the new census, a change that affects the 2010 and 2011 WIC eligibility and coverage estimates;[4] the increase in the estimated coverage rates for infants and women in 2002 is also related to weighting changes.

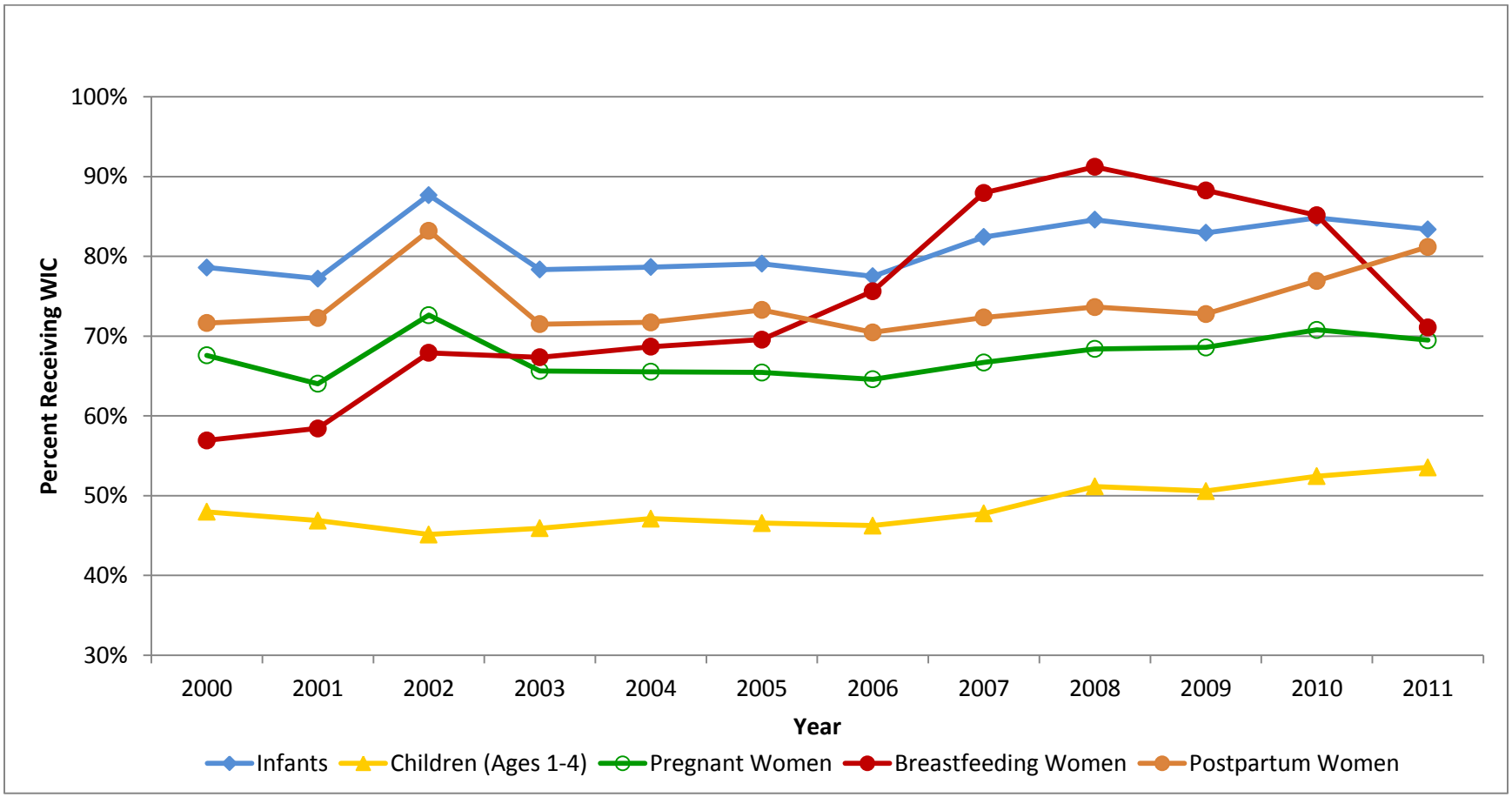
How does the Coverage Rate Vary across Regions of the Country?

WIC coverage rates vary somewhat across the regions (Exhibit ES.5). The highest coverage rate is 73.9 percent in the Western region, and the lowest is 53.7 percent in the Mountain Plains. These regions also had the highest and lowest estimated coverage rates, respectively, in our analyses of WIC eligibility and program reach for 2009 and 2010.[5] Of course, as mentioned above in the context of the national estimates, all the WIC eligibility estimates are affected by sampling variability. For example, while our best estimate of eligibility in the Northeast is 1.225 million people, we can say with 90 percent confidence that the actual number of eligible people is in the range from 1.162 to 1.288 million. Thus, the actual coverage rates could be somewhat higher or lower than shown.

[4] For details see Martinez-Schiferl et al. (2012), and the body of this report.

[5] For 2009 regional coverage rates see Betson et al. (2011). For 2010 regional coverage rates see Martinez-Schiferl et al. (2012).

Exhibit ES.4: Coverage Rate: Percent of Eligible Population Receiving WIC Benefits, CY 2000 to CY 2011



Note: Results are not perfectly comparable across the period. In particular, changes in CPS-ASEC weighting and Census Bureau population estimates when new decennial census data are available affect the estimates from 1999 to 2002 and from 2009 to 2011. Trends for postpartum women (both breastfeeding and non-breastfeeding) are sensitive to changes in breastfeeding rates; a substantial increase in estimated breastfeeding rates from 2010 to 2011 sharply increased estimated eligibility among breastfeeding women. The 2011 estimates are also affected by an update to an adjustment factor and changes in weight adjustment procedures.

Exhibit ES.5: WIC Eligibles and Coverage Rates by FNS Region, CY 2011

NOTE: This table includes estimates for the territories

FNS Region	Eligibles	Participants	Coverage Rate	Confidence Interval for Eligibility Estimate[a]	
				Lower bound	Upper bound
Northeast	1,224,880	772,115	63.0%	1,161,607	1,288,153
Mid-Atlantic	1,573,385	1,018,278	64.7%	1,485,340	1,661,431
Southeast	2,984,057	1,741,037	58.3%	2,865,539	3,102,576
Midwest	2,190,513	1,245,786	56.9%	2,096,228	2,284,797
Southwest	2,277,919	1,422,009	62.4%	2,180,929	2,374,909
Mountain Plains	1,084,360	582,183	53.7%	1,025,883	1,142,837
Western	2,942,339	2,175,451	73.9%	2,825,724	3,058,954
Total	**14,277,453**	**8,956,859**	**62.7%**	**13,838,714**	**14,716,192**

Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, Census International Data Base, WIC Administrative Data

[a] We are 90 percent confident that the true number of eligibles falls within this range.

Summary

In the average month of 2011, an average of 14.3 million individuals were estimated to be eligible for WIC benefits. The eligibility estimate is 1.9 percent lower than it was for 2010, due to both technical reasons (the continuing impact of adjustments in population estimates) and an apparent drop in the portion of infants and young children meeting program eligibility requirements.

The program covered 62.7 percent of the WIC-eligible individuals—approximately 9.0 million people. Infants and non-breastfeeding postpartum women had the highest coverage rates at 83.4 and 81.2 percent, respectively. The coverage rate for children ages 1 through 4 was 53.6 percent. Coverage rates also varied by region. The coverage rate for the Western region was 73.9 percent in 2011, compared with 53.7 percent for the Mountain Plains.

Introduction

This report provides estimates of WIC eligibility for calendar year 2011. The estimates are intended to capture eligibility in the average month of the year and can be compared with monthly caseload data to derive coverage rate estimates.

WIC eligibility estimates are presented for the nation, the fifty States, the District of Columbia, and five U.S. territories (American Samoa, the Commonwealth of the Northern Mariana Islands, Puerto Rico, Guam, and the Virgin Islands). State estimates are aggregated to produce estimates for the seven FNS regions. The national and territory estimates are shown for each different type of person who can receive WIC— infants, children ages 1 through 4 (by single year of age), pregnant women, and breastfeeding and non-breastfeeding postpartum women, while the State and regional estimates are presented at more aggregate levels.

The estimates use multiple data sources. The national estimates use the Current Population Survey, Annual Social and Economic Supplement (CPS-ASEC) data and generally follow methods originally developed by the Committee on National Statistics of the National Research Council (CNSTAT).[6] The territorial estimates use the Puerto Rico Community Survey (PRCS) to directly estimate the number of eligibles in Puerto Rico and the Census Bureau International Data Base to estimate WIC eligibility in other island territories. The State-level estimates are based on the American Community Survey (ACS). WIC eligibility is estimated in each State and that information is then used to determine each State's share of WIC-eligible individuals. These shares are applied to the CPS-ASEC national estimates to produce a consistent set of national and State estimates.

The project uses the updates and extensions to the CNSTAT methods described in Betson, Giannarelli, Martinez-Schiferl, and Zedlewski (2011). The updated methods revised the original approach for producing estimates for the U.S. territories and developed new methods to produce estimates at the State level and standard errors for all estimates. The methods used for this report are the same as methods used to produce estimates in the two prior reports in this series (Betson et al., 2011, and Martinez-Schiferl, Zedlewski, and Giannarelli, 2012), with three exceptions: a factor used in estimating the impact of part-year eligibility was updated, the method for adjusting CPS-ASEC population counts for greater consistency with Census Bureau population estimates was modified, and the racial groupings used in the population adjustments were slightly modified.

This report begins by reviewing the specific methods and assumptions used to develop the estimates. Then estimates of the total WIC-eligible population in 2011 are presented. The results of each step in the national estimation process are discussed, and the characteristics of the WIC-eligible population are summarized. The presentation of the national estimation

[6] See Ver Ploeg and Betson 2003 for the CNSTAT report.

process is followed by a discussion of the steps used to produce the territorial estimates. The 2011 total WIC eligible population then is compared with the 2010 results. The next section presents State and regional level eligibility results, and the following section presents the coverage rates implied by comparing the estimated eligibility counts with actual WIC caseload data. The last two sections discuss measures of precision and validation methods.

Additional details are provided in appendices in Volume II of this report. Appendix A presents all of the national tables for 2011, including more details on interim steps than are presented in the main report. Similarly, Appendix B provides more detailed results for the State estimates. Appendix C contains maps of 2011 WIC coverage rates—defined as the number of WIC participants divided by the estimated number of individuals eligible for the program. Appendix D provides estimates of WIC eligibility and coverage rates from 2000 through 2011.[7] Finally, Appendix E gives more information on the updating of one of the sets of adjustment factors used in the estimates, the "annual-to-monthly" factors.

Overview of Methods for Estimates for 2011

The national, territorial, and State estimates of WIC eligibility are developed through separate but interrelated procedures, discussed below. The description of the national-level infant and child estimates includes information on three updates to the methods used to generate the estimates for 2011 (all of which are discussed further below). First, we made greater use of the current year's population estimates in computing population weight adjustment factors. Second, we modified the racial breakdowns used in computing the population weight adjustments. Third, we updated a factor that compensates for the fact that annual income and program participation do not capture all the information needed to assess average monthly eligibility.

National Estimates

The national WIC eligibility estimates are based primarily on the recommendations of the CNSTAT Panel members. They recommended using the annual CPS-ASEC data for an initial count of eligible infants and children in the fifty States and the District of Columbia. Those figures are refined through a series of adjustment factors designed to more closely mimic WIC program procedures. The estimates of eligible infants are used to estimate WIC-eligible pregnant and postpartum women. For postpartum women, separate estimates are produced for breastfeeding and non-breastfeeding mothers since certification periods and benefits vary for these two groups. Various data sets must be used to impute breastfeeding prevalence, as described on p. 10.

[7] See USDA (2006) for national-level estimates of WIC eligibility for 1994 through 2003 that are also based on the CNSTAT methodology.

Infants and Children, Initial and Adjusted Counts: The CPS-ASEC survey conducted each spring is used to count the number of infants (younger than 1 year old) and young children (age 1 through 4 years old).[8] The CPS-ASEC, which asks respondents to report their income and program participation in the prior calendar year, is the same survey used for official poverty estimates.[9] We use the CPS-ASEC data collected in spring 2012 to estimate WIC eligibility during calendar year 2011.

As indicated in Table 1, the preliminary counts of infants and children are adjusted to compensate for differences between weighted counts of infants and children in the CPS-ASEC data and the Census Bureau population estimates. The two sets of figures may differ because the Census Bureau's weighting procedures are not designed to meet population targets by exact year of age, and also because the population estimates may change after the point that CPS-ASEC data are weighted. Thus, the CPS-ASEC counts for a particular subgroup of infants or children may be inflated or deflated to better reflect the Census Bureau estimate for that subgroup.

The population adjustment factors are recomputed each time the eligibility estimates are updated. The factors vary by three characteristics: age (separate factors are computed for each exact age, 0 through 4), race (three groups: white, black, and other), and gender (two groups: female and male). The factors are computed by comparing Census Bureau population estimates and CPS-ASEC weighted counts for each subgroup. Four years of data are taken into consideration in order to minimize large swings in the factors.

For the CY 2011 WIC eligibility estimates using the 2012 CPS-ASEC data, the population adjustment factors are computed using Census Bureau population data for 2009, 2010, 2011, and 2012, and CPS-ASEC data collected in those same four years. The Census population estimates used in the adjustment factors are the intercensal estimates for 2009 and 2010, and vintage 2011 postcensal estimates for 2011 and 2012.[10] Since intercensal estimates are only available for July, we imputed estimates for March of 2009 and 2010 to maintain consistency with the timing of the CPS-ASEC (primarily conducted in March) and with prior methodology. For example, we used linear interpolation between the intercensal estimates for July 2008 and July 2009 to impute population estimates for March 2009.

[8] The survey was formerly known as the March CPS supplement. Interviews are conducted from February through April.

[9] Technical documentation of the CPS-ASEC is available from the Census Bureau, http://www.census.gov/cps/methodology/techdocs.html.

[10] For the 2010 WIC eligibility estimates, the population adjustment used estimates for 2008 through 2010 from the same series of intercensal estimates, and the vintage 2011 postcensal estimates for 2011. Thus, three of the four sets of Census Bureau population data are the same for the 2011 estimates as for the 2010 estimates, and one is different.

Table 1: Steps and Sources for 2011 Estimates of WIC Eligibility of Infants and Young Children (Ages 1-4), Using Data from the 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, and Census Bureau International Data Base

Step	Description	Sources for 2011 Updates to Estimates and Adjustment Factors
Demographic eligibility	Identify individuals age 0, 1, 2, 3, or 4 in the survey.	2012 CPS-ASEC - National Estimates 2011 ACS - State Estimates 2011 PRCS - Puerto Rico Estimates Census Bureau International Data Base - Other Island Territories
Weight adjustment	Adjust sampling weights to account for under-count or over-count in the CPS relative to Census estimates, by exact age, gender, and race.	National Estimates: Population estimates from the Census Bureau (intercensal estimates for March 2009 & 2010, and post-censal estimates for 2011 & 2012) and the 2009-2012 CPS-ASEC surveys State and Puerto Rico Estimates: Population estimates from the Census Bureau for CY 2011 (post-censal)
Income eligibility	Count as eligible if prior year's annual family income is <= 185 percent of the applicable poverty guideline--"family" for income purposes is defined as the broadly defined family, with related subfamilies included in the primary.	2012 CPS-ASEC - National Estimates 2011 ACS - State Estimates 2011 PRCS - Puerto Rico Estimates
Adjunctive eligibility	Add in as eligible those infants/children whose household reports SNAP, family reports TANF, or who are themselves reported as being enrolled in Medicaid at any point during the prior calendar year. For TANF receipt, "family" on the CPS is defined as the narrowly defined family and also includes any related children whose parents are not present in the household. On the ACS and PRCS the definition is just the narrowly defined family with subfamilies separate.	2012 CPS-ASEC
Adjust for fluctuations in monthly income and certification periods	Multiply the estimates by a factor of 1.16 for infants and 1.0 for children to account for the impact of monthly fluctuations in income and program participation, and for the impact of 6 and 12 month certification periods.	Average of factors for 2005, 2006, and 2010, as computed from the SIPP panels from 2004 and 2008.
Adjust for nutritional risk	Multiply the infant estimates by 0.97 and the child estimates by 0.99 to account for the fact that some otherwise-eligible infants and children might not be found to be at nutritional risk.	No update.
Territories	Eligibility in Puerto Rico is based on the PRCS and is estimated with the same methods as those used for the State estimates. Eligibility in the Other Island Territories is based on a proportion of the estimated population of infants and children.	PRCS 2011 - Puerto Rico Census Bureau International Data Base - Other Island Territories

For the 2011 WIC eligibility estimates, the adjustment factors are computed by examining the relationship between the Census Bureau and CPS-ASEC counts in two ways: (1) comparing four-year accumulations of Census Bureau population estimates and four-year accumulations of CPS-ASEC weighted counts, and (2) comparing Census Bureau estimates and CPS-ASEC weighted counts for March 2012. For each age, race, and gender group, the following procedures are applied:

- An adjustment factor is computed only if the difference between the *2012* Census Bureau population estimates and CPS weighted counts is in the same direction as the difference between the *four-year accumulations* of Census and CPS numbers. In other words, an adjustment factor is applied only if either (a) the four-year accumulations and 2012 data *both* indicate that the CPS weights need to be increased, or (b) the four-year accumulations and 2012 data *both* indicate that the CPS weights need to be decreased.

- If the above condition is met for a particular age, race, and gender group, then the adjustment factor is equal to either the ratio of the four-year accumulations or the ratio of the 2012 values—whichever would make the *least* change to the CPS weights (i.e. the adjustment factor is set to whichever ratio is closer to 1).

In prior work, the population adjustment factors were computed using only the four-year accumulations, with no constraints. Adjustments to the procedures were necessary for the 2011 estimates due to the fact that the 2012 CPS-ASEC is the first CPS year to use the new 2010 decennial Census information for weighting purposes. Thus, the 2012 CPS-ASEC and Census population numbers are already in relatively close alignment, while the four-year accumulations suggest a wider disparity. (The Census population estimates used in the four-year ratio all reflect the new information from the 2010 decennial census, while three of the four years of CPS-ASEC data were weighted prior to the availability of the 2010 decennial census.) For many subgroups, adjustment factors based on the four-year ratio alone would have resulted in adjusted CPS-ASEC population counts being *further away* from the Census estimates than the unadjusted counts. The constraints described above ensure that weights are adjusted only to bring the CPS counts closer to Census population estimates. [11] While the constraints do represent a change in methods, analysis suggests that even if they had been imposed in past years, they would have had little impact on the eligibility estimates.

For purposes of defining racial subgroups for the population adjustment factors, the "white" and "black" groups include only children for whom a single race was reported. Children for whom more than one race was reported and children who are reported to be a race other than white or black are combined into the single group "other". This follows current federal guidelines by not tabulating individuals who report more than one race as being of only a single

[11] In future work, the possibility of adjusting weights using only the current year's data (with no use of four-year accumulations) could be considered.

specific race.[12] In prior reports in this series, the racial classification was slightly different, with persons reported as being both black and another race included in the "black" category.[13]

Table 2 shows the adjustment factors computed using both the prior and modified racial categorizations. The modified categorization alters the factors for 12 groups by 1 percentage points or more. In two of these cases (black females age 3, and "other" race male infants) the new categorization results in factors that are farther from 1, but in most cases, the new categorization results in factors that are closer to 1. For example, under the prior categorization, the weight of an Asian female infant would have been increased by 14.0 percent; with the new categorization, the increase is 9.9 percent. In this case, the inclusion of individuals who are both black and another race in the "other" group causes that group as a whole to be less under-weighted (relative to the Census Bureau estimates) than when the individuals who are both black and another race were included in the "black" category.

Table 2 also shows that, using the new racial categorization, the procedures for the 2011 estimates resulted in non-0 weight adjustments being applied to 13 of the total 30 subgroups defined by age, race, and gender. For the remaining 17 subgroups—including all subgroups of white infants and children—the CPS weights are unadjusted. The adjustments range from a reduction of 12.5 percent (for black female 3-year-olds) to an increase of 14.4 percent (for male infants who are of a race other than white or black).

Infants and Children, Eligibility Estimates and Further Adjustments: After the adjustments to the CPS-ASEC weights, the next step is to tabulate the number of infants and young children living in families with cash income in the prior calendar year (2011) that is less than 185 percent of the federal poverty guideline (the threshold for income eligibility). As recommended by the CNSTAT Panel, we define the family as all persons living in the household who are related by birth, marriage, or adoption. (The WIC program does not specifically define the family unit that must be used for eligibility determination.) The poverty guidelines used in this step are an average of the guidelines released in 2010 (which would have been used by WIC programs for the first half of calendar year 2011), and the guidelines released in 2011 (which would have been used by WIC programs in the second half of calendar year 2011).

Individuals also are considered eligible for WIC through adjunctive eligibility. An individual is adjunctively eligible if the person receives benefits from the Supplemental Nutrition Assistance Program (SNAP), The Temporary Assistance to Needy Families (TANF) program, or Medicaid, if the person's family receives benefits from TANF, or if the person's family includes a pregnant woman or infant who is enrolled in Medicaid.[14, 15] Thus, the next step is to count the infants

[12] See OMB (1997).

[13] For prior reports see Martinez-Schiferl et al. (2012) and Betson et al. (2011).

[14] Enrollment in a State's Medicaid-expansion program funded through the Children's Health Insurance Program (CHIP) also confers adjunctive eligibility, but enrollment in a separate State health program funded by CHIP does not. However, if eligibility in a separate State health program is limited to individuals with incomes at or below the

and children who appear adjunctively eligible according to the CPS-ASEC data, which asks about enrollment in each of these programs during the prior year. However, adjunctive eligibility is likely underestimated due to the underreporting of benefit receipt in survey data.[16]

Table 2: Comparison of Population Adjustment Factors (Constrained) Using the New and Old Racial Categorizations

	Weight Adjustment Factors:					
	Females			Males		
	White	Black	Other	White	Black	Other
Age 0						
new racial categorization	1.000	1.018	1.099	1.000	1.000	1.144
old racial categorization	1.000	1.041	1.140	1.000	1.033	1.086
Age 1						
new racial categorization	1.000	0.951	1.000	1.000	0.941	1.000
old racial categorization	1.000	0.945	0.997	1.000	0.909	1.000
Age 2						
new racial categorization	1.000	1.019	1.000	1.000	1.000	1.085
old racial categorization	1.000	1.037	1.000	1.000	1.000	1.129
Age 3						
new racial categorization	1.000	0.875	1.051	1.000	1.000	1.061
old racial categorization	1.000	0.903	1.048	1.000	1.001	1.085
Age 4						
new racial categorization	1.000	1.007	1.000	1.000	0.953	0.995
old racial categorization	1.000	0.998	1.127	1.000	0.926	0.970

Notes:

Under the "new" racial categorization, persons reported as having multiple races, one of which is black, are categorized as "other". Under the "old" categorization they were categorized as "black".

Factors are set to 1 unless both four-year accumulations and 2012 population figures show the same direction of difference between Census and CPS-ASEC data.

WIC income threshold, *and* the program collects income information in the enrollment process, then participation in such a program can serve as evidence of income eligibility for WIC. Because the CPS-ASEC data do not separately identify the two types of CHIP programs, enrollment in CHIP is not counted as conferring adjunctive eligibility; this may lead to a slight underestimate of the count of adjunctively eligible infants and children.

[15] Note that implementation of the adjunctive eligibility rules in the eligibility estimation is restricted by the available data in the CPS-ASEC data. These data do not indicate whether each person receives SNAP, only if the household receives SNAP. Since most households file together for SNAP, this should not introduce much error. See Table 1 for the definition of how adjunctive eligibility is implemented using the CPS-ASEC.

[16] All surveys underestimate enrollment because some individuals fail to report participation (Wheaton 2007). The CNSTAT-recommended methods do not attempt to correct for the impacts of program underreporting.

Two proportional adjustments are made to these initial eligibility estimates as summarized in Table 1. The first adjustment—the "annual-to-monthly" adjustment—accounts for three reasons why annual data on income and program participation can misestimate average monthly eligibility. First, family incomes may fluctuate during the year. Even if annual income appears above the income limit (so a child is not counted as eligible based on the CPS-ASEC data) the child could be eligible if the family applied in certain months of low income. Conversely, if family income falls substantially during the year, annual income might suggest a child is eligible when in fact the child would not have been eligible at the start of the year. A second reason that annual data misestimates average monthly eligibility is that program participation varies during a year. The initial counts consider an infant or child adjunctively eligible if program benefits are received at any point during the year; however, if the family only started receiving benefits at some point during the year, the infant or child would not have been adjunctively eligible at the start of the year. Third, annual income misestimates average monthly eligibility due to the WIC program's certification periods. Eligible infants are certified for a year, while eligible children could be certified for only six months during 2011 in almost all States.[17] An infant or child who appears ineligible based on annual income may in fact have been eligible at the start of the year due to having been certified in the prior year; conversely, a child who appears eligible based on annual income may have only been eligible for 6 months.

The annual-to-monthly adjustment factor is computed using The Survey of Income and Program Participation (SIPP);[18] the SIPP, unlike the CPS-ASEC, allows month-by-month observation of family circumstances. The annual-to-monthly factor differs for infants and children, reflecting the fact that infants and children have different certification periods. The factors are computed by comparing two different SIPP-based eligibility estimates for infants and children: one estimate using the monthly data and including certification periods, and another that mimics the type of estimate that can be computed with the CPS-ASEC data.[19] For the 2011 WIC eligibility estimates, we used factors of 1.16 for infants and 1.0 for children, which were obtained by averaging the results from analysis of SIPP data for 2005, 2006, and 2010. In other words, the SIPP analysis suggests that the average monthly number of WIC-eligible infants is 16 percent higher than it would appear based only on annual income and program participation; while for young children the impacts of the six-month certification period, cross-year variation in income, and cross-year variation in program participation are offsetting. (Note that for the 2010 estimates, we used slightly different adjustments—1.18 for infants and 1.01 for children—which were computed as the average of factors estimated from analysis of 2002, 2005, and 2006 SIPP data.)

The second of the two proportional adjustments—and the final step in estimating WIC eligibility for infants and children in the fifty States and the District of Columbia—is to adjust for nutritional risk. (WIC eligibility estimates for infants and children in the territories are discussed

[17] The Healthy, Hunger-Free Kids Act of 2010 (PL 111-296), passed in December 2010, gave States the option of certifying children for 12 months. However, only a few States began using the longer period during 2011.
[18] More information on the SIPP can be found at the Census Bureau website: http://www.census.gov/sipp/
[19] The details of these procedures are summarized in Betson et al. (2011).

below.) Women, infants, and children who are not determined to be at nutritional risk are not eligible for WIC, regardless of their income. A constant nutritional risk adjustment factor, calculated in the original CNSTAT panel report, has been used in all recent WIC eligibles estimates. Using data from the 1994-1998 Continuing Survey of Food Intake by Individuals (CSFII), the CNSTAT Panel found that at least 97 percent of income-eligible pregnant women were at nutritional risk. Since an infant whose mother would have qualified for WIC during pregnancy is automatically considered at-risk, the nutritional risk adjustment factor for infants has been 0.97. The CSFII data also suggested that more than 99 percent of young children failed to meet dietary guidelines, leading to a 0.99 nutritional risk adjustment for children.

Pregnant and Postpartum Women: Estimates of the number of WIC-eligible women (pregnant, postpartum breastfeeding, and postpartum non-breastfeeding) are based upon adjusted counts of WIC-eligible infants rather than separate counts from the CPS-ASEC data. (The CPS-ASEC does not identify pregnancy or breastfeeding status.) The proportional adjustments made to the infant estimates to arrive at the final estimates for women are summarized in Table 3.

The first adjustment to the count of WIC-eligible infants reflects the fact that the number of pregnant and postpartum women can differ from the number of infants, for two reasons. The number of pregnant and postpartum women can be lower than the number of infants seen in the CPS-ASEC survey data due to multiple births. However, the number of pregnant and postpartum women can be greater than the number of infants in the CPS-ASEC due to fetal and infant deaths (the infants are absent in the CPS-ASEC). The adjustment that accounts for both of these factors is small and was very similar when estimated at two different points. A factor of 0.9966 was used from 2000 through 2003 and 0.9961 has been used from 2004 through 2011.

The eligibility estimates for pregnant women must also take into account that some mothers of WIC-eligible infants were not themselves eligible during pregnancy. (It is also possible, but less likely, that a woman could be WIC-eligible during pregnancy but not WIC-eligible after the birth.) Analysis of the 1990 through 1996 panels of SIPP found that women whose infants were eligible for WIC were themselves eligible in an average of 6.4 months of pregnancy, or 71 percent of the maximum nine months of pregnancy eligibility.[20] Thus, the gestation adjustment factor used consistently starting with WIC eligibility estimates for 1994 has been 0.5330 (0.71 x 0.75). After this adjustment for gestation, the number of pregnant women is reduced by an additional 3 percent (the adjustment factor is equal to 0.97) to reflect that an otherwise-eligible pregnant woman may not be at nutritional risk. (The estimates assume that all postpartum women are at nutritional risk.)

For a postpartum woman, the duration of WIC eligibility depends on the extent to which she breastfeeds her child as well as the other factors. A new mother can be certified to receive benefits for 12 months if she is breastfeeding and her child is not receiving the food package for

[20] See Yelowitz (2002)

infants who are fully fed with formula. If the mother is *not* breastfeeding or her child receives the fully formula fed food package, then she can be eligible for benefits as a postpartum woman until her infant turns six months old. Thus, adjustments are applied to the count of mothers whose infants are WIC-eligible to separately estimate eligibility for postpartum women certified as breastfeeding vs. non-breastfeeding.

The adjustments that identify women eligible for WIC as breastfeeding vs. non-breastfeeding combine data from three sources: the Abbott Laboratories' Infant Feeding Survey (IFS), (formerly the Ross Lab's Mothers Survey), the National Health and Nutrition Examination Survey (NHANES),[21] and the SIPP. Abbott annually releases their estimates of the percentage of WIC mothers who breastfeed their infant in the hospital and the percentage who are breastfeeding at six months.[22] For 2011, for example, the IFS data show 59.2 percent of WIC mothers breastfeeding in the hospital, and 27.1 percent breastfeeding at six months. Since estimates show that mothers who are eligible but not participating in WIC have higher rates of breastfeeding than WIC participants, the rates reported in IFS for WIC participants will underestimate rates for all WIC-eligible mothers. The 2005-2006 NHANES data are used to adjust for this difference. The NHANES ratios of breastfeeding rates for WIC-eligible to WIC-participating mothers in the hospital and at six months are applied to the IFS annual estimates to approximate the current breastfeeding rates in the WIC-eligible population. The most recent analysis of NHANES data showed that the breastfeeding rate of WIC-eligible mothers in the hospital was 5.6 percent higher than for WIC participants. At six months, WIC-eligible mothers were 15 percent more likely to breastfeed than WIC participants.

The estimation of postpartum WIC eligibility is complicated by the decline in breastfeeding throughout the first year. (A woman who is breastfeeding in the hospital may stop breastfeeding at any point.) Although the CNSTAT Panel did not discuss an adjustment factor to address this issue, subsequent estimates have used a factor computed from SIPP-based simulations to adjust for breastfeeding cessation. The simulations assume that mothers inform WIC staff members as soon as they stop breastfeeding so that they can qualify for infant formula. The simulations assign a breastfeeding status and duration to each postpartum mother of a WIC-eligible infant, using breastfeeding rates for WIC-eligible mothers from NHANES. Eligibility is then simulated month-by-month, using each woman's monthly income, program participation, breastfeeding status, and appropriate certification periods. One simulation uses the in-hospital breastfeeding status for the first six months and the status at six months for the remainder of the year, while a second simulation uses the monthly status. In the second simulation, fewer eligible women are counted as breastfeeding, and the total number of WIC-eligible postpartum women is also lower. The ratio of the second set of estimates to the first provides an additional adjustment factor. The current values of these adjustment factors are 0.620 (for in-hospital breastfeeding) and 0.832 (for breastfeeding at 6 months).

[21] More information on the NHANES can be found at the Center for Disease Control and Prevention website: http://www.cdc.gov/nchs/nhanes/about_nhanes.htm

[22] Appendix Table A.4 provides the time series for the IFS and the NHANES data as well as the adjustment factors calculated from these data.

Table 3: Steps and Sources for 2011 Estimates of WIC Eligibility of Pregnant and Postpartum Women, Using Data from the 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, and Census Bureau International Data Base

Step	Description	Sources for 2011 Updates to Estimates and Adjustment Factors
Starting point	Use as a starting point the final average monthly eligibility estimate for infants.	Infants as estimated using methods outlined in Table 1.
Adjust for multiple births and infant deaths	Multiply by a factor of 0.9961 to account for the impact of multiple births and infant deaths (so the number of pregnant women/mothers is not exactly equal to the number of infants).	Multiple birth, infant and fetal death data from 2004 vital statistics data. March 2004 Census estimates for count of infants.
For pregnant women: Adjust for length of pregnancy and difference in income during pregnancy vs. after birth	Multiply by 0.533 to account for 9 months of pregnancy (0.75 factor) and to account for lower likelihood of financial eligibility during pregnancy vs. after birth (additional 0.71).	No update.
For postpartum mothers: Separately estimate the average monthly number who are eligible as breastfeeding mothers and the number eligible as postpartum non-breastfeeding mothers	Multiply by one year-specific factor to estimate the average monthly women eligible for WIC as breastfeeding mothers (0<12 months postpartum). Multiply the estimate by another factor to estimate the average monthly women eligible for WIC as non-breastfeeding women <6 months postpartum.	2011 Abbott Laboratories Infant Feeding Survey (formerly the Mother Survey); 2001-2002, 2003-2004, and 2005-2006 waves of National Health and Nutrition Examination Survey (NHANES); 1996, 2001, and 2004 SIPP panels. Territorial estimates assume the national breastfeeding rates.
Adjust for nutritional risk	Multiply the estimate for pregnant women by 0.97 to account for the fact that some otherwise-eligible pregnant women might not be found to be at nutritional risk. Assume all postpartum women are at nutritional risk (factor of 1.0).	No update.

Territories

Estimates of infants and children eligible for WIC in Puerto Rico are calculated directly using the Puerto Rico Community Survey (PRCS) data collected during 2011 and applying the same methods used for the U.S. population.[23] Estimates for the other territories (American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the Virgin Islands) continue to be based on simple population adjustments from the Census.

Since Puerto Rico accounts for 89 percent of WIC eligibles in the territories, the use of recent demographic and income data for Puerto Rico (from the PRCS) provides a more accurate WIC eligibility estimate than the original CNSTAT territorial adjustment that simply increased the national estimates to account for WIC eligibles in the territories based on decennial Census data. However, it should be noted that the 2011 PRCS captures a combination of 2010 and 2011 income; households are surveyed in each month of the year, and each household is asked to report income for the 12 months prior to the survey.

Estimates for pregnant and postpartum women in Puerto Rico and the other island territories are determined using a method that parallels the method used to estimate the number of WIC-eligible women in the fifty States and the District of Columbia. The estimates begin with the number of fully eligible infants in the territories. The estimates for pregnant women are adjusted for length of pregnancy, differences in income during pregnancy vs. after the birth, fetal and infant deaths, multiple births, and nutritional risk. All adjustments are the same as those applied at the national level. The estimates for postpartum women are adjusted for fetal and infant deaths, multiple births, breastfeeding, and nutritional risk. Since the Infant Feeding Survey (IFS) does not provide breastfeeding rates for Puerto Rico or the other island territories, the national breastfeeding rates were assumed.

States

The State estimates begin with the ACS data collected during 2011.[24] Like the 2011 PRCS, the 2011 ACS captures a combination of 2010 and 2011 income. This is not ideal for estimation of 2011 WIC eligibility; but the ACS is nevertheless the best data source for determining State shares of WIC eligibility due to its very large sample sizes in all States.

As explained earlier, the CNSTAT Panel recommended that all members of a household related by blood, marriage, or adoption be considered as one family unit for the purposes of determining WIC eligibility. However, the only information the ACS provides on family relationships is each individual's relationship to the reference person (householder); for people

[23] Information about the PRCS is available on the Census Bureau website, at http://www.census.gov/acs/www/about_the_survey/puerto_rico_community_survey/.

[24] ACS documentation is available on the Census Bureau website, http://www.census.gov/acs/www/about_the_survey/american_community_survey/.

not related to the householder, their relationships to each other are unknown. In complex households, WIC eligibility requires understanding relationships across all members of the household. For example, an unmarried partner of the householder with a child from a prior relationship would be considered a separate family according to the CNSTAT procedures. Since the Minnesota Population Center's IPUMS-USA provides researchers with educated conjectures about the relationships between persons not related to the householder, we use the ACS with these imputations.[25] For each State, the numbers of infants and children who are income-eligible or adjunctively-eligible for WIC (enrolled in SNAP, TANF, or public health insurance[26]) are estimated using the ACS data.

Like the process for estimating national-level WIC eligibility from the CPS-ASEC data, the process for estimating State-level eligibility from the ACS data involves the use of adjustment factors. State-specific data were used in two of the adjustments—for population and for breastfeeding. The adjustments to the ACS weights mirror the adjustments that are made to the CPS national data.[27] Using Census Bureau State population estimates by age, the 2011 ACS person weights for infants and children are proportionally adjusted so that the sums of the persons by age are equal to the Census population estimates for each State.

For other adjustment factors used in estimating WIC eligibility for infants and young children—addressing annual-to-monthly income differences and nutritional risk—the national factors were used in each State. (If a State began implementing 12-month certification for children during 2011, the use of the national annual-to-monthly factor could very slightly underestimate eligibility; see Appendix E for more discussion.)

Estimates for pregnant and postpartum women are derived from the infant estimates as with the national estimates, with the exception that the breastfeeding adjustments incorporate State variation in breastfeeding rates. As explained above, the breastfeeding adjustment includes three components—the in-hospital and six-month breastfeeding rates for women participating in WIC, the adjustment for differences between WIC participants and WIC-eligible women, and the adjustment for the fact that breastfeeding declines from each month to the next. For the State-level WIC eligibility estimates, the second and third components of the adjustment remain as in the national estimates, but the first component—breastfeeding rates in the hospital and at six months—is modified to capture State-level variation in breastfeeding

[25] See Ruggles, Alexander, Genadek, Goeken, Schroeder, and Sobek 2010.

[26] The ACS asks whether individuals are enrolled in "Medicaid, Medical Assistance, or any kind of government assistance plan for those with low income or a disability". There is no separate identification of enrollment in Medicaid vs. CHIP. Thus, infants and children reported to be enrolled in government-assisted insurance according to this variable are counted as adjunctively eligible for WIC.

[27] One difference between the methodology used for the ACS population adjustments and the CPS-ASEC population adjustments is that the ACS adjustments are based on one year of Census Bureau estimates and one year of ACS data, while the CPS-ASEC adjustments are based on four-year accumulations of population estimates and survey data. This also means that there is no need to apply the constraints to the ACS population adjustment factors that are placed upon the CPS-ASEC factors.

rates.[28] Abbott Laboratories publishes both in-hospital and at-six-month breastfeeding rates for women participating in WIC by State.

These procedures produce ACS-based WIC eligibility estimates for each State and the District of Columbia; however, the sum of these estimates is not the same as the national estimate produced from the CPS-ASEC data. The CPS-ASEC has been judged as the better source for a national WIC eligibility estimate, due to the fact that the CPS-ASEC has more complete income and program participation data. Also, the CPS asks respondents for their income during the calendar year, while the ACS surveys households throughout the year and asks about income in the twelve months prior to the interview.[29] Consequently, the ACS is less likely to detect increases in eligibility as the economy falters or decreases in eligibility when the economy improves.

To create a consistent set of national and State WIC eligibility estimates, a top down approach is used. Specifically, we compute each State's share of the total ACS-based eligibility estimate, and then allocate the national estimates computed from the CPS-ASEC according to those State shares. With this approach, the accepted methodology for producing national estimates and a consistent time series of estimates can be maintained.

We calculate State shares for each subgroup, which are applied to the CPS-ASEC national estimates for each subgroup. This produces estimates by subgroup at the FNS regional level and total WIC eligibility estimates at the State level. While estimates for subpopulations help to build total WIC eligibility variation across the States, they are not sufficiently reliable to publish individually, as eligibility subgroups are relatively small in many States.

National Eligibility Estimates: 2011

This section presents the 2011 national estimates, first describing the total estimates, including the estimates for the territories. Then it addresses the results specific to the U.S. mainland, including the results of the individual steps used to produce the estimates and the characteristics of the WIC-eligible population. Subsequently, we present the results of the individual steps used to produce the estimates for the island territories. Total WIC eligibility results for 2011 are compared with 2010 eligibility estimates.

Table 4 shows that 14.277 million individuals are estimated to have been eligible for WIC in the average month of CY 2011, across the fifty States, the District of Columbia, Puerto

[28] For example, in 2011 the in-hospital breastfeeding rate for all infants (not just infants enrolled in WIC) ranged from 42 percent in Mississippi to 85 percent in Alaska; the six-month estimates were 23 and 52 percent for Mississippi and Alaska, respectively, according to the IFS.

[29] Respondents provide their income over the 12 months preceding the month they are surveyed; households surveyed in January 2011 thus provided their 2010 income, households surveyed in July 2011 provided their income from July 2010 through June 2011, and so on.

Rico, and the four other island territories.[30] Of course, this is an estimate, and could differ from the true number due to differences between the survey and the full population and due to various methodological choices. However, we can be 90 percent confident that the true number of eligibles falls in the range from 13.8 million to 14.7 million.[31]

Table 4: Estimates of the Total Average Monthly Number of Individuals Eligible for WIC by Participant Group, CY 2011

NOTE: This table includes estimates for the territories

	2011		
Participant Group	**Eligibles**	**Non-Eligibles[a]**	**Total[b]**
Infants	2,516,309	1,496,666	4,012,975
Total Children Ages 1-4	8,888,005	7,477,459	16,365,464
Children Age 1	2,325,258	1,795,215	4,120,473
Children Age 2	2,154,671	1,850,767	4,005,439
Children Age 3	2,180,779	1,866,200	4,046,978
Children Age 4	2,227,296	1,965,278	4,192,574
Pregnant Women	1,294,668		
Postpartum Breastfeeding Women	811,356		
Postpartum Non-Breastfeeding Women	767,116		
All Postpartum Women	1,578,471		
Total WIC Eligibles	14,277,453		

Source: 2012 CPS-ASEC for U.S. estimate, 2011 PRCS and Census International Data Base for territories

Notes:

[a]The non-eligible infants and children represent the difference between the Total estimates of infants and children age 1 to 4 in the total United States and the WIC-eligible infants and children.

[b]The total numbers of infants and children represent the sum of the March 2012 total number of infants and children adjusted for the under and over count of infants and children in the CPS relative to Census estimates plus the number of infants and children in Puerto Rico and the other island territories based on the 2011 PRCS and annual Census Bureau population estimates.

[30] Table 4 provides unrounded eligibility estimates for consistency with Table 5, which shows the precise impact of each adjustment.

[31] See Table 14 for the statistical information that underlies the computation of this confidence interval.

The overall estimate includes 2.516 million infants (63 percent of all infants in the United States and territories) and 8.888 million children age 1 through 4 (54 percent of all young children). The number of children eligible for WIC varies somewhat across each year of age, as does the total number of children. The estimated average monthly number of pregnant women eligible for WIC, 1.295 million, is derived directly from the number of eligible infants (adjusted for multiple births and differences in income and adjunctive eligibility between infants and mothers, and adjusted for a maximum of nine months of benefits). The average monthly number of WIC-eligible postpartum women also derives from the number of eligible infants and the estimates of breastfeeding rates calculated as summarized in Table 3 above. There were an estimated 0.811 million women eligible as breastfeeding mothers in the average month of CY 2011, and an estimated 0.767 million eligible non-breastfeeding postpartum women.

As described above, the national totals are derived from numerous factors. The results of each step in the estimation process are presented in Table 5. The estimation process begins by adjusting the counts of the number of infants and children from the 2012 CPS-ASEC (reflecting income in CY 2011) to compensate for the difference between CPS-ASEC weighted population counts and Census Bureau population counts, averaged over a four year period (but constrained by the difference in the current year). The total number of infants is adjusted upward from 3.903 to 3.965 million (1.6 percent) while the total number of children is adjusted downward from 16.207 million to 16.165 million (0.3 percent). Overall, the population of infants and children ages 0 through 4, as measured in the CPS-ASEC data, is almost unchanged, increasing by only 0.1 percent.[32]

After the application of the population adjustment factors, the next step is to count the income-eligible infants and children, by comparing their annual family incomes to 185 percent of a two-year average of the federal poverty guidelines. For CY 2011, the CPS-ASEC data (with adjusted weights) include 1.783 million infants and 7.081 million children with annual family income under that level. Adjunctive eligibility due to enrollment in SNAP, TANF, or Medicaid increases the infant eligibility estimate by 23 percent (2.197 million compared with 1.783 million) and increases the estimate for young children by 24 percent (8.812 million compared with 7.081 million). Medicaid accounted for most of those adjunctively eligible for WIC in 2011 (0.307 million infants and 1.305 million children age 1 to 4). The roles of Medicaid, SNAP, and TANF in adjunctive eligibility reflect program eligibility policies and caseload sizes. More children are enrolled in Medicaid than the other two programs,[33] as many States have expanded eligibility for Medicaid to income levels above 185 percent of poverty.[34]

[32] Beginning with the 2011 estimates, the population adjustment was constrained so that the adjusted population count in the CPS was in the interval bounded by the unadjusted CPS weighted count of individuals and the Census Population estimate. If adjustment factors were not constrained as in previous years, the adjusted CPS count of infants would be 3.798 million (2.7 percent decrease from the unadjusted CPS counts) and the count of children would be 15.584 million (3.8 percent decrease).

[33] In 2011, 27.4 million non-disabled children (age 18 and under) were enrolled in Medicaid, 19.9 million children (under age 18) were enrolled in SNAP, and 3.3 million children (age 19 and under) received TANF benefits.

The next adjustment accounts for intra-year fluctuation in income, intra-year fluctuations in enrollment in the programs that confer adjunctive eligibility, and the fact that individuals are certified eligible for 6 or 12 months. The number of infants who appear eligible based on annual income and program participation is increased by 16 percent while the number of children is unaffected by this adjustment. The final adjustment to the number of infants and children reduces the estimates slightly to reflect the fact that some may meet all other criteria but not be considered at nutritional risk. The estimate is reduced by 3 percent for infants and 1 percent for children as shown in table 1. Total WIC eligibility in the U.S. (not including territories) in 2011 is estimated at 2.472 million for infants and 8.724 million for children; with the territories included 2.516 million infants and 8.888 million children are estimated to be eligible for WIC.

The estimates for pregnant women begin from the final estimate of 2.472 million WIC-eligible infants in the U.S. in the average month of CY 2011. As explained above, this figure is adjusted for the length of pregnancy and the fact that a woman may have higher income during pregnancy than after birth (the factor is 0.533 as shown in table 3). The next adjustment (0.9961) compensates for the fact that the count of infants very slightly overstates the count of pregnant women, and the final adjustment (0.97) reflects the assumption that 3 percent of otherwise-eligible pregnant women are not at nutritional risk. The final estimate is 1.272 million women eligible for WIC during pregnancy in the U.S. during the average month of CY 2011.

The estimates for postpartum women—breastfeeding and non-breastfeeding—also begin from the estimate of 2.472 million WIC-eligible infants in the U.S. As in the estimation process for pregnant women, this figure is adjusted by 0.9961 to adjust for fetal and infant deaths and multiple births. The next three adjustments take into account that mothers who receive WIC may not receive it for as many months as their infants, and that breastfeeding status affects eligibility. The average monthly estimate of postpartum breastfeeding women eligible for WIC in the U.S. in 2011 is 0.797 million, and the estimate of postpartum non-breastfeeding women is 0.754 million. One important element in the estimates for postpartum women is the information about breastfeeding prevalence. The 2011 information suggests higher breastfeeding rates than earlier data; this issue is discussed further below, in the section that compares the 2011 WIC eligibility estimates to the 2010 estimates.

Medicaid caseload data are from Kaiser (2013), SNAP caseload data are from Strayer, Eslami, and Leftin (2012), and TANF caseload data are from Administration for Children and Families (2013).

[34] In 2013, for example, 25 States offered either regular Medicaid or CHIP-expansion coverage to infants in families with incomes above 185 percent of poverty; 15 of these States offered this coverage to children through age 5. Tabulated from the Kaiser Family Foundation's State Health Facts, http://kff.org/medicaid/state-indicator/income-eligibility-fpl-medicaid/

Table 5: Adjustments for Calculating the Average Monthly Number of Individuals Eligible for WIC by Participant Group, CY 2011

NOTE: Estimates for the territories are added at the bottom of this table. The top portion of this table does not include estimates from the territories.

	Infants	Children Age 1	Children Age 2	Children Age 3	Children Age 4	Total Children Age 1 to 4	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Non-Breastfeeding Women	Total
Total number of infants/children in the 2012 CPS-ASEC	3,903,110	4,104,966	3,930,744	4,014,385	4,156,562	16,206,657				20,109,767
Number (non-U.S. Territory) after adjustment for CPS under/overcount	3,965,001	4,070,187	3,955,794	3,997,263	4,141,673	16,164,917				20,129,919
Number with annual income <185% FPG	1,783,049	1,808,639	1,726,178	1,751,075	1,795,053	7,080,945				8,863,994
Number of additional people adjunctively eligible above 185% FPG[a]	413,998	497,269	411,228	409,621	412,580	1,730,698				2,144,696
Through SNAP	87,844	125,101	89,280	103,456	78,787	396,624				484,468
Through TANF	18,899	16,017	2,633	9,323	639	28,611				47,510
Through Medicaid	307,255	356,151	319,315	296,842	333,155	1,305,463				1,612,718
Total number income and adjunctively eligible	2,197,047	2,305,908	2,137,406	2,160,696	2,207,633	8,811,643				11,008,690
Number after monthly income adjustment	2,548,575	2,305,908	2,137,406	2,160,696	2,207,633	8,811,643				11,360,218
Total Eligibles - Number after adjustment for nutritional risk (infants and children)	2,472,118	2,282,849	2,116,032	2,139,089	2,185,557	8,723,527				11,195,644
Starting point for estimates of women is fully eligible infants							2,472,118	2,472,118	2,472,118	7,416,353
Number after adjustment for length of pregnancy and income of woman during pregnancy							1,316,403			1,316,403
Number after adjustment for multiple births and infant deaths							1,311,269	2,462,476	2,462,476	6,236,221
Number after adjustment for breastfeeding								797,106	753,644	1,550,750
Total Eligibles - Number after adjustment for nutritional risk (pregnant and postpartum women)							1,271,931	797,106	753,644	2,822,681

CY 2011 - Eligibles in the U.S. Territories	Infants	Children Age 1	Children Age 2	Children Age 3	Children Age 4	Total Children Ages 1-4	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Non-Breastfeeding Women	Total
Total Eligibles in the U.S. Territories	44,192	42,409	38,640	41,690	41,740	164,478	22,737	14,249	13,472	259,128
Source: 2011 PRCS and Census International Data Base										
Total Eligibles - States and Territories U.S. Total	**2,516,309**	**2,325,258**	**2,154,671**	**2,180,779**	**2,227,296**	**8,888,005**	**1,294,668**	**811,356**	**767,116**	**14,277,453**

See Tables 1 and 3 for adjustment factors applied.

[a] Adjunctive eligibility is counted by the first program that qualifies the person for WIC, in this order: SNAP, TANF, and Medicaid.

Characteristics of WIC Eligibles in the U.S.

The CPS-ASEC data allow an examination of the characteristics of the infants and children identified as eligible for WIC based on annual characteristics in 2011 (Table 6). Focusing first on basic demographics, the WIC-eligible infants and children appear to include slightly more boys (52 percent) than girls; there are also slightly more boys aged 0-4 than girls aged 0-4 in the overall population. Infants and children who are income-eligible for WIC are predominantly white (67 percent of infants and 66 percent of children) with most of the remainder black (20 percent of both infants and children); other WIC-eligible children report another race or multiple races. Small sample size prevents the "other" category from being subdivided. Approximately one-third of the WIC-eligible infants and children (34 percent of infants and 35 percent of children) are Hispanic.

Note that in this report, the categories of "white" and "black" include only those persons reporting only one race. This differs from previous reports in this series where persons reporting multiple races were categorized as "black" if one of the reported races was black. Also note that categorization by race is treated separately from categorization by ethnicity. This also differs from previous reports where persons categorized as Hispanic were not included in the counts of persons in the "white", "black", and "other" categories (although in both this report and prior reports Hispanic children can be of any race).

Turning to the family characteristics of the eligible infants and children, most (61 percent of infants and 56 percent of children) live in two-parent families. Most of the remainder (35 percent of infants and 40 percent of children) live in single-parent families, and a small portion (5 percent overall) live with a non-parent caretaker. Large households are relatively common; slightly under one quarter (24 percent) live in households with six or more persons. Most WIC-eligible infants and children live with working parents (64 percent of infants and 70 percent of children). Among those who are estimated to be eligible based on annual income, 59 percent of infants and 58 percent of children live in families with annual incomes below the poverty threshold.[35]

The table also provides some insight into the characteristics of infants and children who become eligible through adjunctive eligibility compared with those who are eligible based on income. The infants and children who are eligible due only to adjunctive eligibility are more likely to have two parents (65 percent of adjunctively-eligible infants and children compared with 55 percent of those who are income-eligible) and more likely to have working parents (85 percent vs. 65 percent).

[35] The table shows family income relative to the poverty threshold, the measure used for the Census Bureau's tabulations of poverty status for research purposes (as opposed to the poverty guidelines, used for program administrative purposes).

Table 6: Estimates of the Average Monthly Number of Infants and Children (Ages 1-4) Eligible for WIC by Income and Adjunctive Eligibility in the 2012 CPS-ASEC by Demographic Characteristics, CY 2011

Fully adjusted weights[a]

	WIC-Eligible Infants			WIC-Eligible Children Age 1 to 4			WIC-Eligible Children Age 0 to 4		
Demographic Characteristics	**Family income <185% FPG[b]**	**Adjunct-ively eligible[c]**	**Total**	**Family income <185% FPG[b]**	**Adjunct-ively eligible[c]**	**Total**	**Family income <185% FPG[b]**	**Adjunct-ively eligible[c]**	**Total**
Total	2,040,878	473,863	2,514,741	7,080,237	1,730,525	8,810,762	9,121,115	2,204,387	11,325,503
Gender									
Male	51.6	52.6	51.8	52.2	50.6	51.9	52.0	51.0	51.8
Female	48.4	47.4	48.2	47.8	49.4	48.1	48.0	49.0	48.2
Race									
White	65.3	74.1	66.9	66.5	66.6	66.5	66.2	68.2	66.6
Black	22.2	11.1	20.1	20.5	17.7	19.9	20.9	16.3	20.0
Other	12.5	14.8	12.9	13.0	15.8	13.6	12.9	15.6	13.4
Ethnicity									
Hispanic	34.4	33.7	34.3	37.0	26.4	34.9	36.4	28.0	34.8
Non-Hispanic	65.6	66.3	65.7	63.0	73.6	65.1	63.6	72.0	65.2
Living arrangement									
Two-parent family	59.4	65.2	60.5	53.5	65.3	55.8	54.8	65.3	56.8
Single-parent family	35.8	32.3	35.2	41.8	30.0	39.5	40.5	30.5	38.5
No-parent family	4.8	2.5	4.4	4.7	4.8	4.7	4.7	4.3	4.6
Related non-parent caretaker	2.6	2.5	2.6	3.3	4.8	3.6	3.1	4.3	3.3
Unrelated non-parent caretaker	2.2	0.0	1.8	1.4	0.0	1.2	1.6	0.0	1.3
Household size (number of persons)									
2	5.4	1.6	4.6	5.9	3.7	5.5	5.8	3.2	5.3
3	20.2	32.6	22.5	19.6	21.3	19.9	19.7	23.7	20.5
4	30.5	26.0	29.6	27.6	34.9	29.0	28.2	33.0	29.2
5	21.9	14.8	20.5	21.9	20.2	21.6	21.9	19.0	21.3
6 or more	22.1	25.1	22.7	25.0	20.0	24.0	24.4	21.1	23.7
Number with working parent(s)	60.8	75.1	63.5	65.7	87.5	70.0	64.6	84.8	68.6
Annual family income relative to poverty[b]									
Less than 50% FPL	30.7	0.0	24.9	28.7	0.0	23.1	29.2	0.0	23.5
50% to <100% FPL	27.9	0.0	22.6	29.0	0.0	23.3	28.8	0.0	23.2
100% to <130% FPL	17.2	0.0	13.9	17.1	0.0	13.8	17.1	0.0	13.8
130% to <185% FPL	23.8	5.3	20.3	24.6	4.6	20.7	24.4	4.8	20.6
185% to <200% FPL	0.4	11.0	2.4	0.5	13.8	3.1	0.5	13.2	2.9
200% to <250% FPL	0.1	34.4	6.6	0.0	31.6	6.2	0.1	32.2	6.3
250% FPL and above	0.0	49.3	9.3	0.0	50.0	9.8	0.0	49.9	9.7
Benefit receipt									
No benefit receipt	24.8	0.0	20.2	24.3	0.0	19.5	24.4	0.0	19.7
SNAP, TANF, & Medicaid	6.7	3.5	6.1	7.6	1.8	6.5	7.4	2.2	6.4
SNAP & TANF	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1
SNAP & Medicaid	37.2	14.6	33.0	37.9	17.2	33.8	37.7	16.6	33.6
SNAP & Medicaid	1.1	4.6	1.7	0.9	1.7	1.1	1.0	2.3	1.2
SNAP only	6.2	3.1	5.6	5.5	3.9	5.1	5.6	3.7	5.2
TANF only	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medicaid only	23.9	74.2	33.4	23.7	75.4	33.9	23.8	75.2	33.8

Source: 2012 CPS-ASEC

Notes for Table 6:

FPG - Federal Poverty Guidelines

FPL - Federal Poverty Level

[a] These estimates are tabulated from the fully adjusted person weights on the 2011 CPS-ASEC. They are adjusted to account for the under or over count of infants and children in the CPS relative to Census estimates, eligibility in the U.S. Territories, monthly income, and nutritional risk. See Appendix Tables A.3a/b and A.6 for the adjustment factors.

[b] This table uses both the Federal Poverty Guidelines (FPG) and the Federal Poverty Thresholds or "Levels" (FPL). The thresholds are used to calculate the ratio of annual family income to the poverty threshold for their family size. The guidelines are used in determining WIC eligibility.

[c] Infants and children adjunctively eligible are those whose family income was not below 185% FPG but who reported receipt of SNAP, Medicaid, or TANF. Therefore, the two categories are mutually exclusive.

The families of adjunctively-eligible infants and children also tend to have higher incomes. Among those only eligible through adjunctive eligibility rules, about 50 percent live in families that have annual income of 250 percent of the poverty threshold and higher. Even though annual income among these eligibles seems relatively high, they may have experienced drops in income during the year that caused the family to enroll in TANF, SNAP, or Medicaid. In that case, their eligibility for WIC would depend on their income and program participation at the point they applied for benefits. Some of the WIC-eligible infants and children at higher annual income levels may be adjunctively eligible because the TANF, SNAP, and Medicaid programs do not necessarily count all the income of all members of the family. For example, when a child's caretaker is his or her grandparent, the grandparent's income is typically not a factor in the child's eligibility for Medicaid.[36]

Territories

We computed the number of infants and children (age 1 to 4) residing in Puerto Rico from the 2011 PRCS and adjusted the number for the 2011 Census under/overcount (Table 7). Using the adjusted population counts, 81 percent of infants (33,580) as well as 81 percent of children (142,002) were eligible for WIC based on having annual income under 185 percent of the poverty guideline—higher than the percentages of infants and children in the fifty States and the District of Columbia who appear eligible based on annual income. Adjunctive eligibility increases estimated WIC eligibility by 4 percent for infants (1,452) and by 5 percent for children (7,513). Given the high proportions of infants and children who are income-eligible, it is reasonable that adjunctive eligibility due to program enrollment matters less in Puerto Rico than in the fifty States and the District of Columbia.

An adjustment must be applied to the direct estimates from the 2011 PRCS to take into account the impact of certification periods and changes during a year in income and program participation. The SIPP-estimated annual-to-monthly adjustment factors (1.16 for infants and 1.0 for children) do not reflect data for Puerto Rico. Since a high proportion of infants and children are income-eligible in Puerto Rico, it is possible that the true factors should be lower. However, in the absence of other data, the SIPP annual-to-monthly factors are applied to derive the Puerto Rico eligibility estimates. The nutritional risk adjustment factors of 0.97 for infants and 0.99 for children also are applied. The final average monthly eligibility estimates for Puerto Rico are 39,418 infants (95 percent of the total adjusted infant population) and 148,020 children age 1 to 4 (84 percent of the total adjusted population).

For infants and children residing in other island territories (American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the U.S. Virgin Islands), the only data available are annual population estimates (from the Census Bureau's International Database)

[36] Note that while 19 percent of WIC-*eligible* infants and children have incomes above 185 percent of the poverty threshold, among actual WIC *participants* this percentage is much lower (3 percent in 2010 according to USDA, 2011).

for single year of age[37] and the 2000 estimates of the number of infants and children who are income eligible (from the 2000 decennial Census data). Our methods therefore use the 2011 population estimates, but assume that the percentage of the population that is WIC-eligible is the same as in 2000. Based upon 2000 Census data, 56.8 percent of infants and children in the other island territories were income-eligible for WIC in 2011. While this percentage represents the most recently available evidence on income eligibility in the other island territories, it does not account for adjunctive eligibility.[38] To estimate the additional number of infants and children who would gain eligibility through participation in other safety net programs, we examined the relationship between adjunctive eligibility and income eligibility in Puerto Rico and the mainland in 2011. That information implies roughly an increase of 18 percent in the number of WIC-eligible infants, and an increase of 17 percent in the number of WIC-eligible children, due to adjunctive eligibility. These procedures result in an estimate of 67 percent of infants and children eligible for WIC in the other island territories due to annual income or program participation.

As with the estimates for Puerto Rico, the final steps in the estimation of WIC-eligible infants and children in the other island territories are to apply the annual-to-monthly adjustment factors and the nutritional risk adjustment factors. The final eligibility estimates suggest that in the other island territories combined, the average monthly number of eligible infants is 4,773 (76 percent of total infants), and the average monthly number of eligible children is 16,458 (66 percent of total children).

As described earlier, estimates for pregnant and postpartum women in Puerto Rico and the other island territories are determined using a method that parallels that used for the estimates for the fifty States and the District of Columbia. The estimates begin with the number of fully eligible infants in the territories (44,192, including Puerto Rico and the other island territories). After adjustments for length of pregnancy, income during pregnancy, and multiple births, we estimate that in 2011 across the territories there were 22,737 WIC-eligible pregnant women, 14,249 WIC-eligible postpartum breastfeeding women, and 13,472 WIC-eligible non-breastfeeding women (Table 7).

[37] This is an improvement over the data available for the previous report (eligibility estimates for 2010). When the 2010 estimates were generated, the International Database only had data for the combined 0-4 age category.
[38] The 2010 Census data for these territories were not available at the point the 2011 eligibility estimates were being developed.

Table 7: Adjustments for Calculating the Average Monthly Number of Individuals Eligible for WIC in Puerto Rico and the Other Island Territories by Participant Group, CY 2011

Puerto Rico	Infants	Children Age 1	Children Age 2	Children Age 3	Children Age 4	Total Children Ages 1-4	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Non-Breastfeeding Women	Total
Total number of infants/children in the 2011 PRCS	36,690	43,843	45,047	46,217	44,992	180,099				216,789
Number after adjustment for PRCS under/overcount	41,656	43,990	43,377	43,481	44,723	175,571				217,227
Number with annual income <185% FPG	33,580	36,692	32,899	36,514	35,897	142,002				175,583
Number of additional people adjunctively eligible above 185% FPG[a]	1,452	1,956	1,959	1,447	2,152	7,513				8,965
Through SNAP	1,206	1,168	654	737	1,466	4,025				5,230
Through TANF	0	0	0	46	75	121				121
Through Medicaid	246	788	1,305	664	611	3,368				3,614
Total number income and adjunctively eligible	35,032	38,647	34,858	37,961	38,049	149,516				184,548
Number after monthly income adjustment	40,638	38,647	34,858	37,961	38,049	149,516				190,153
Total Eligibles - Number after adjustment for nutritional risk (infants and children)	39,418	38,261	34,509	37,582	37,669	148,020				187,439
Starting point for estimates of women is fully eligible infants							39,418	39,418	39,418	118,255
Number after adjustment for length of pregnancy and income of woman during pregnancy							20,990			20,990
Number after adjustment for multiple births and infant deaths							20,908	39,265	39,265	99,438
Number after adjustment for breastfeeding								12,710	12,017	24,727
Total Eligibles - Number after adjustment for nutritional risk (pregnant and postpartum women)							20,281	12,710	12,017	45,008

Other Island Territories	Infants	Children Age 1	Children Age 2	Children Age 3	Children Age 4	Total Children Ages 1-4	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Non-Breastfeeding Women	Total
Total number of infants/children in the Other Island Territories Age 0-4	6,318	6,296	6,268	6,234	6,178	24,976				31,294
Number after the other islands full-eligibility factor	4,242	4,191	4,172	4,149	4,112	16,624				20,866
Number after monthly income adjustment	4,921	4,191	4,172	4,149	4,112	16,624				21,545
Total Eligibles - Number after adjustment for nutritional risk (infants and children)	4,773	4,149	4,130	4,108	4,071	16,458				21,231
Starting point for estimates of women is fully eligible infants							4,773	4,773	4,773	14,319
Number after adjustment for length of pregnancy and income of woman during pregnancy							2,542			2,542
Number after adjustment for multiple births and infant deaths							2,532	4,755	4,755	12,041
Number after adjustment for breastfeeding								1,539	1,455	2,994
Total Eligibles - Number after adjustment for nutritional risk (pregnant and postpartum women)							2,456	1,539	1,455	5,450
Total Eligibles - U.S. Territories Total	**44,192**	**42,409**	**38,640**	**41,690**	**41,740**	**164,478**	**22,737**	**14,249**	**13,472**	**259,128**

See Tables 1 and 3 for adjustment factors applied.

[a] Adjunctive eligibility is counted by the first program that qualifies the person for WIC, in this order: SNAP, TANF, and Medicaid.

Comparing 2011 to 2010

Overall, the number of people estimated as eligible for WIC in 2011 is 1.9 percent lower than the number estimated as eligible in 2010 (Table 8). The differences vary by type of individual—infants, children, and pregnant and postpartum women. The changes in the estimates are likely due to a combination of actual changes (for example, the impacts of the improving economy), and methodological changes (for example, the impact of different racial categories on population adjustment factors).

For both infants and children, the changes in estimated eligibility were due to a combination of changes in the adjusted population figures and changes in the eligibility rate—the percentage of that population estimated to be eligible. The eligibility rate declined from 63.8 percent to 62.7 percent for infants and from 55.6 percent to 54.3 percent for young children. The reductions in the eligibility rates are likely due to the fact that the economy somewhat improved between the two years. In particular, the unemployment rate fell from 9.8 percent at the start of 2010 to 8.5 percent by the end of 2011.[39]

The adjusted populations moved in different directions for infants vs. children—the adjusted population of infants for 2011 was 1.1 percent higher than in 2010, while for young children, the adjusted 2011 population was 1.3 percent lower. The Census Bureau's most recent postcensal population estimates for March 2012 vs. March 2011 show a decline of 0.05 percent in the infant population and a drop of 0.4 percent in the population of children ages 1 to 4. The percentage changes from year to year in the adjusted population numbers used for this analysis differs since the population figures for this work are not tied solely to the annual Census population estimates. (Also, as discussed above, the methods for adjusting the CPS-ASEC population figures were altered somewhat for the 2011 estimates, though this likely does not account for much of the difference observed between the two years.)

Combining the estimated changes in population and the change in the eligibility rate, the 2011 estimate for WIC-eligible infants is 0.7 percent lower than the 2010 estimate, and the 2011 estimate for WIC-eligible children is 3.6 percent lower than the 2010 estimate. The 0.7 percent decrease in the estimated number of pregnant women eligible for WIC follows the decrease for infants (since this estimate begins with the number of infants). However, note that from a statistical standpoint, we cannot rule out the possibility that the changes in the WIC eligibility estimates for infants, young children, and pregnant women are due solely to sampling variability in the CPS-ASEC survey data.[40]

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[39] Unemployment rates are available on the Bureau of Labor Statistics website, "Labor Force Statistics from the Current Population Survey", http://data.bls.gov/cgi-bin/surveymost?ln, accessed June 21, 2013.

[40] When tested at a 90 percent level of confidence, the changes are not statistically significant. In other words, we cannot be 90 percent certain that the changes in eligibility for infants, children, and pregnant women are true changes, rather than being due to sampling variability in the surveys.

Table 8: Estimates of the Total Average Monthly Number of Individuals Eligible for WIC by Participant Group: A Comparison of CY 2010 and 2011

NOTE: This table includes estimates for the territories.

	Total		Percent	Total Eligibles		Percent	Eligibility Rate		Percent	Coverage Rate		Percent
Participant Group	2011	2010	Change	2011	2010	Change	2011	2010	Change	2011	2010	Change
Infants	4,012,975	3,971,131	1.1%	2,516,309	2,535,074	-0.7%	62.7	63.8	-1.8%	83.4	84.8	-1.7%
Total Children Ages 1-4	16,365,464	16,587,060	-1.3%	8,888,005	9,224,455	-3.6%	54.3	55.6	-2.3%	53.6	52.4	2.1%
Children Age 1	4,120,473	3,996,618	3.1%	2,325,258	2,210,315	5.2%	56.4	55.3	2.0%			
Children Age 2	4,005,439	4,127,247	-3.0%	2,154,671	2,341,191	-8.0%	53.8	56.7	-5.2%			
Children Age 3	4,046,978	4,266,132	-5.1%	2,180,779	2,402,957	-9.2%*	53.9	56.3	-4.3%			
Children Age 4	4,192,574	4,197,062	-0.1%	2,227,296	2,269,991	-1.9%	53.1	54.1	-1.8%			
Pregnant Women				1,294,668	1,304,322	-0.7%				69.5	70.8	-1.8%
All Postpartum Women				1,578,471	1,486,265	6.2%				76.0	80.6	-5.7%
Breastfeeding Women				811,356	664,619	22.1%*				71.1	85.1	-16.5%*
Non-Breastfeeding Women				767,116	821,646	-6.6%				81.2	76.9	5.5%
Total WIC Eligibles				14,277,453	14,550,116	-1.9%				62.7	62.6	0.2%

Source: March 2012 and March 2011 CPS; 2004 and 2008 SIPP panels; 2001-2002, 2003-2004, 2005-2006 NHANES

*Significant at the 90 percent level of confidence. Changes in eligibility that are not marked as significant could be due solely to sampling variability in the survey.

The largest percentage changes from the 2010 to the 2011 eligibility estimates are for postpartum women. The estimated number of postpartum breastfeeding women eligible for WIC actually saw a large increase (22.1 percent) which was large enough to offset the decrease in estimated eligibility among non-breastfeeding postpartum women (6.6 percent), thereby causing a 6.2 percent increase in eligibility among postpartum women overall (1.49 million in 2010 compared to 1.58 million in 2011). [41] The sharp increase in the number of postpartum women eligible for WIC due to breastfeeding reflects historically high estimates of breastfeeding among WIC mothers for 2011, according to the IFS survey.[42] As Figure 1 shows, after declining between 2000 and 2007 (with a substantial drop from 2005 to 2007) and then trending up slightly through 2010, the reported breastfeeding rate among WIC infants increased sharply in 2011 according to the IFS. There were increases in the estimated breastfeeding rates for WIC mothers and for all mothers, both in the hospital and at 6 months. For WIC mothers, the survey shows an increase in the in-hospital breastfeeding rate from 53 percent in 2010 to 59 percent in 2011, and an increase in the rate at 6 months from 19 percent to 27 percent. Since the survey-reported breastfeeding rates are used in our estimates of the number of WIC-eligible postpartum breastfeeding mothers, the trend in the percent of WIC-eligible postpartum mothers who are modeled as breastfeeding is very similar to the trend in the breastfeeding rates. However, it is worth noting that the administrative data has not shown a similar pattern in the percent of postpartum mothers who report breastfeeding at least once per day. That measure has trended upwards slightly over the last ten years, but there is no substantial increase between 2010 and 2011.

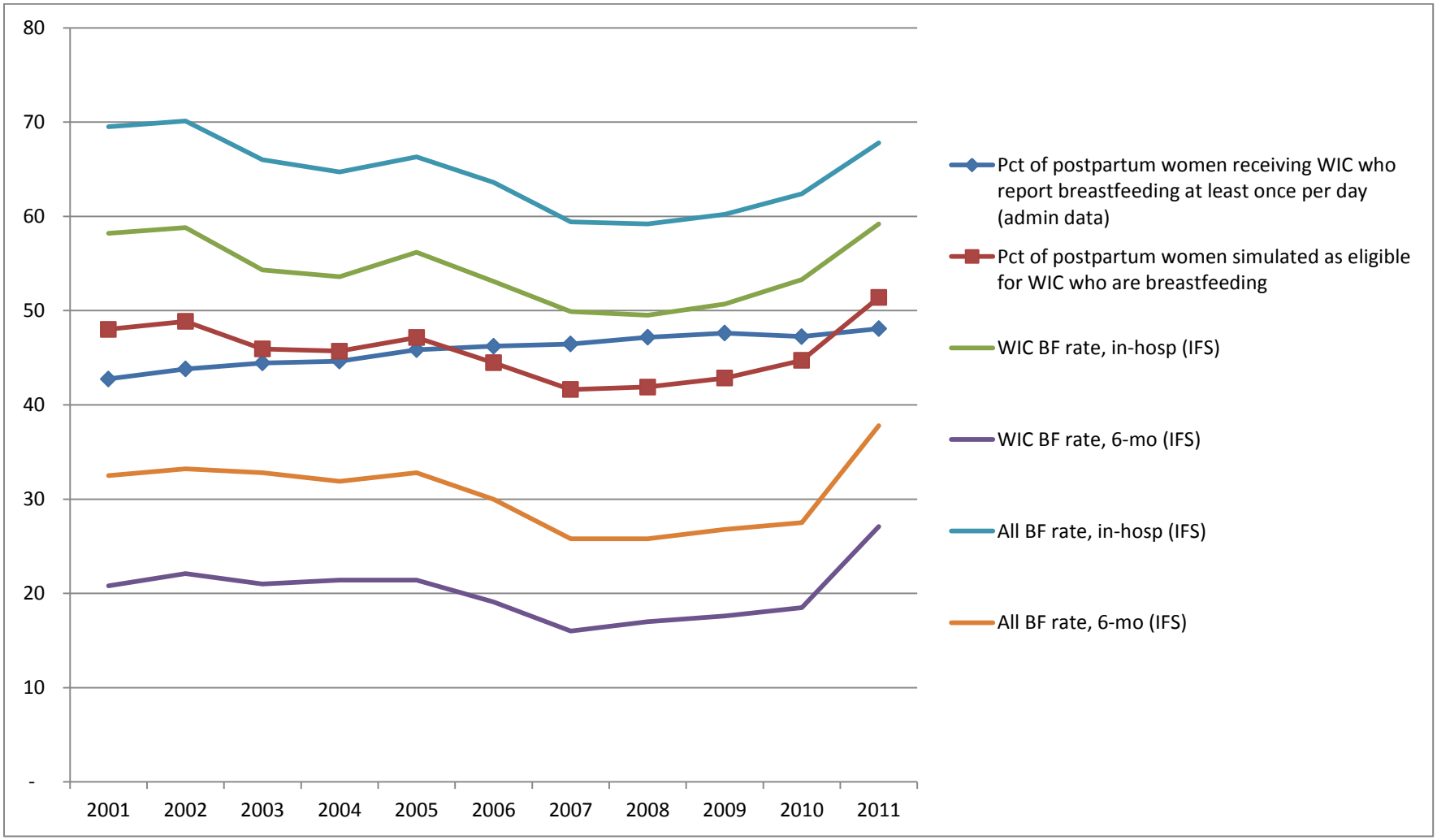
Given the importance of the breastfeeding rates to the eligibility estimates for postpartum mothers, more analysis of these data is warranted. For example, despite the increase in the IFS rates from 2010 to 2011, the IFS 2011 rate for all mothers breastfeeding at 6 months (37.8 percent) is still substantially below the 6-month breastfeeding rate for 2009 from the National Immunization Survey (47.8 percent).[43] Also, the National Immunization Survey shows a different trend; for example, for all mothers, there are no year-to-year declines in the 6-month rate over the period from 2000 to their (provisional) 2010 data.

[41] Unlike the change in eligible infants and children, the increase in eligible postpartum breastfeeding women is statistically significant. In other words, we can be 90 percent certain that there was an increase in the number of eligible postpartum breastfeeding women, although we can't be sure of the exact percent increase.

[42] If the breastfeeding rates had remained at their 2010 levels, the estimated eligibility among postpartum women would have been 1.475 million instead of the 1.578 million estimated with the 2011 IFS rates, as shown in Table A-5 of the Appendix.

[43] Centers for Disease Control, National Immunization Survey webpage, "Breastfeeding among U.S. Children born 2000-2009, CDC National Immunization Survey", http://www.cdc.gov/breastfeeding/data/NIS_data/index.htm, accessed November 8, 2013.

Figure 1: Breastfeeding Rates Over Time



Regional and State Estimates of WIC Eligibility: 2011

As explained above, WIC eligibility was estimated for each State and the District of Columbia. WIC eligibility varies across the country due to variations in total population, demographic characteristics, income levels, and State policy choices. This section first examines the distribution of WIC eligibility across regions and States and then presents the regional-level eligibility rates—the percentages of demographically-eligible individuals who are estimated to meet other program eligibility requirements.

Of course, as mentioned above in the context of the national estimates, all the WIC eligibility estimates are affected by sampling variability. The section of the report following this regional and State discussion presents measures of precision for the regional and State eligibility estimates (Tables 14 and 15).

Distribution of WIC Eligibles

The estimated distribution of WIC eligibility by FNS region (Table 9) shows the greatest portions of WIC eligibles in the Southeast and Western regions (each with approximately 21 percent of all WIC eligibles), while the Northeast and Mountain Plains regions have the fewest WIC-eligible individuals (about 9 percent and 8 percent, respectively). The distribution of estimated eligibility across regions is approximately the same for each subgroup of WIC-eligible individuals. By State (Table 10), California has the largest share of WIC eligibles, with an estimated 13 percent of all WIC-eligible individuals. Other States with large shares of total WIC eligibility are Texas (11 percent), Florida (6 percent), and New York (6 percent).[44]

Table 9: Distribution of WIC Eligibles by FNS Region for each Participant Group, CY 2011

	Infants	Children (age 1 to 4)	Pregnant Women	All Postpartum Women	Total
Distribution of Eligibles					
Northeast	8.8%	8.4%	8.8%	9.2%	8.6%
Mid-Atlantic	10.9%	11.1%	10.9%	10.6%	11.0%
Southeast	20.8%	21.1%	20.8%	19.9%	20.9%
Midwest	15.5%	15.4%	15.5%	14.9%	15.3%
Southwest	16.5%	15.7%	16.5%	15.8%	16.0%
Mountain Plains	7.4%	7.7%	7.4%	7.5%	7.6%
Western	20.1%	20.6%	20.1%	22.0%	20.6%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, Census International Data Base

[44] If a State began implementing 12-month certification of young children during 2011, the use of the national-level "annual-to-monthly" factor (which assumes 6-month certification) could very slightly under-estimate that State's share of total national eligibility.

Table 10: Distribution of WIC Eligibility by State and FNS Region, CY 2011

	Percent Share of National WIC Eligibles		Percent Share of National WIC Eligibles
State[a]			
Alabama	1.6%	New York	5.5%
Alaska	0.3%	North Carolina	3.4%
Arizona	2.3%	North Dakota	0.2%
Arkansas	1.1%	Ohio	3.4%
California	12.6%	Oklahoma	1.4%
Colorado	1.5%	Oregon	1.2%
Connecticut	0.8%	Pennsylvania	3.2%
Delaware	0.2%	Puerto Rico	1.6%
D.C.	0.2%	Rhode Island	0.3%
Florida	5.8%	South Carolina	1.7%
Georgia	3.7%	South Dakota	0.2%
Hawaii	0.4%	Tennessee	2.1%
Idaho	0.6%	Texas	10.8%
Illinois	4.0%	Utah	1.1%
Indiana	2.1%	Vermont	0.1%
Iowa	0.8%	Virginia	1.9%
Kansas	0.9%	Washington	2.1%
Kentucky	1.5%	West Virginia	0.5%
Louisiana	1.8%	Wisconsin	1.6%
Maine	0.3%	Wyoming	0.2%
Maryland	1.4%		
Massachusetts	1.4%	**FNS Region**[b]	
Michigan	2.9%	Northeast	8.6%
Minnesota	1.3%	Mid-Atlantic	11.0%
Mississippi	1.2%	Southeast	20.9%
Missouri	1.8%	Midwest	15.3%
Montana	0.3%	Southwest	16.0%
Nebraska	0.6%	Mountain Plains	7.6%
Nevada	0.9%	Western	20.6%
New	0.2%		
New Jersey	2.0%	**Total**	100.0%
New Mexico	0.9%		

Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, Census International Data Base

Notes:

[a] State and regional eligibility estimates include those eligible for WIC via Indian Tribal Organizations.

[b] Estimates for the other island territories (territories other than Puerto Rico) are included in regional totals but not shown separately due to small sample constraints.

WIC Eligibility Rates across States and Regions

A State's or region's share of WIC eligibility is due in large part to that State's or region's share of total population. (California has the largest population and, not surprisingly, has the most WIC eligibles.) However, States and regions do show some variation in their WIC eligibility rates—the portions of demographically eligible people who appear to meet other eligibility requirements.

As shown earlier, the national-level analysis suggests that 62.7 percent of infants and 54.3 percent of young children were eligible for WIC in the average month of 2011. However, at the regional level, the percentage of infants who appear eligible for WIC varies from 54.8 percent in the Mid-Atlantic to 72.1 percent in the Southwest; and the percentage of children who appear eligible for WIC varies from 48.1 percent in the Northeast to 60.6 percent in the Southwest (Table 11).

WIC eligibility rates for infants, children, and pregnant women appeared to decrease between 2010 and 2011 in most of the regions. However, the degree of change varied across the regions. For infants, while the national WIC eligibility rate decreased by 1.1 percentage points between 2010 and 2011, the regional changes ranged from no change in the Midwest to a larger reduction in the eligibility rate (2.0 percentage points) in the Western region. The national eligibility rate for children (age 1 through 4) decreased by 1.3 percentage points between 2010 and 2011, and all the regions also showed reductions, but the magnitude of the reduction ranged from 0.4 percentage points in the Southeast to 2.0 percentage points in the Southwest. The regional pattern of change in the eligibility rates for pregnant women follows that for infants, although the changes are smaller (in percentage points) for pregnant women than for infants.

The eligibility rate for postpartum women rose due to the increase in breastfeeding rates according to the IFS (discussed earlier in the national context). The increase is seen in all of the regions, ranging from an increase of 0.6 percentage points in the Mid-Atlantic region to 2.9 percentage points in the Northeast and Western regions.

WIC Coverage Rates

The WIC eligibility estimates at the national, regional, and State levels can be compared with program administrative data to estimate program coverage rates—defined as the number of individuals enrolled in the WIC program divided by the number eligible (these are alternately referred to as participation rates). At the national level, the WIC coverage rate for 2011 is estimated at 62.7 percent overall, with the highest rate for infants (83.4 percent of eligible infants appear to be enrolled in the program), and the lowest for children (53.6 percent) (Table 12). Among eligible women, postpartum women appear to have a higher coverage rate than pregnant women, with 76.0 percent of eligible postpartum women enrolled compared with 69.5 percent of eligible pregnant women.

Table 11: WIC Eligibles by FNS Region and Participant Group, CY 2010 and CY 2011

	Infants	Children (age 1 to 4)	Pregnant Women	All Postpartum Women	Total
Eligiblility Rate, 2010					
Northeast	56.8%	49.4%	39.1%	34.3%	47.2%
Mid-Atlantic	56.4%	49.9%	38.8%	33.0%	47.2%
Southeast	69.9%	60.4%	48.2%	39.7%	57.5%
Midwest	61.3%	53.4%	42.2%	35.0%	50.7%
Southwest	73.5%	62.7%	50.6%	42.6%	60.0%
Mountain Plains	57.2%	50.1%	39.4%	34.0%	47.6%
Western	64.2%	56.8%	44.2%	40.0%	54.1%
Total	**63.8%**	**55.6%**	**44.0%**	**37.6%**	**52.9%**
Eligiblility Rate, 2011					
Northeast	56.3%	48.1%	38.8%	37.2%	46.7%
Mid-Atlantic	54.8%	48.2%	37.7%	33.6%	45.9%
Southeast	69.1%	60.0%	47.6%	41.6%	57.3%
Midwest	61.3%	52.1%	42.2%	37.3%	50.2%
Southwest	72.1%	60.6%	49.7%	43.4%	58.6%
Mountain Plains	55.4%	49.2%	38.1%	35.5%	46.9%
Western	62.2%	55.0%	42.8%	42.9%	53.0%
Total	**62.7%**	**54.3%**	**43.2%**	**39.5%**	**52.2%**
Percent Change in Eligibility Rate, 2011 vs 2010					
Northeast	-0.8%	-2.7%	-0.8%	8.4%	-1.1%
Mid-Atlantic	-2.8%	-3.3%	-2.8%	1.8%	-2.7%
Southeast	-1.2%	-0.7%	-1.2%	4.7%	-0.3%
Midwest	-0.1%	-2.4%	-0.1%	6.5%	-1.0%
Southwest	-1.9%	-3.3%	-1.9%	1.8%	-2.4%
Mountain Plains	-3.1%	-1.7%	-3.1%	4.4%	-1.4%
Western	-3.2%	-3.0%	-3.2%	7.2%	-2.0%
Total	**-1.8%**	**-2.3%**	**-1.8%**	**5.1%**	**-1.5%**

Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, Census International Data Base

Table 12: WIC Coverage Rates by FNS Region and Participant Group, CY 2010 and CY 2011

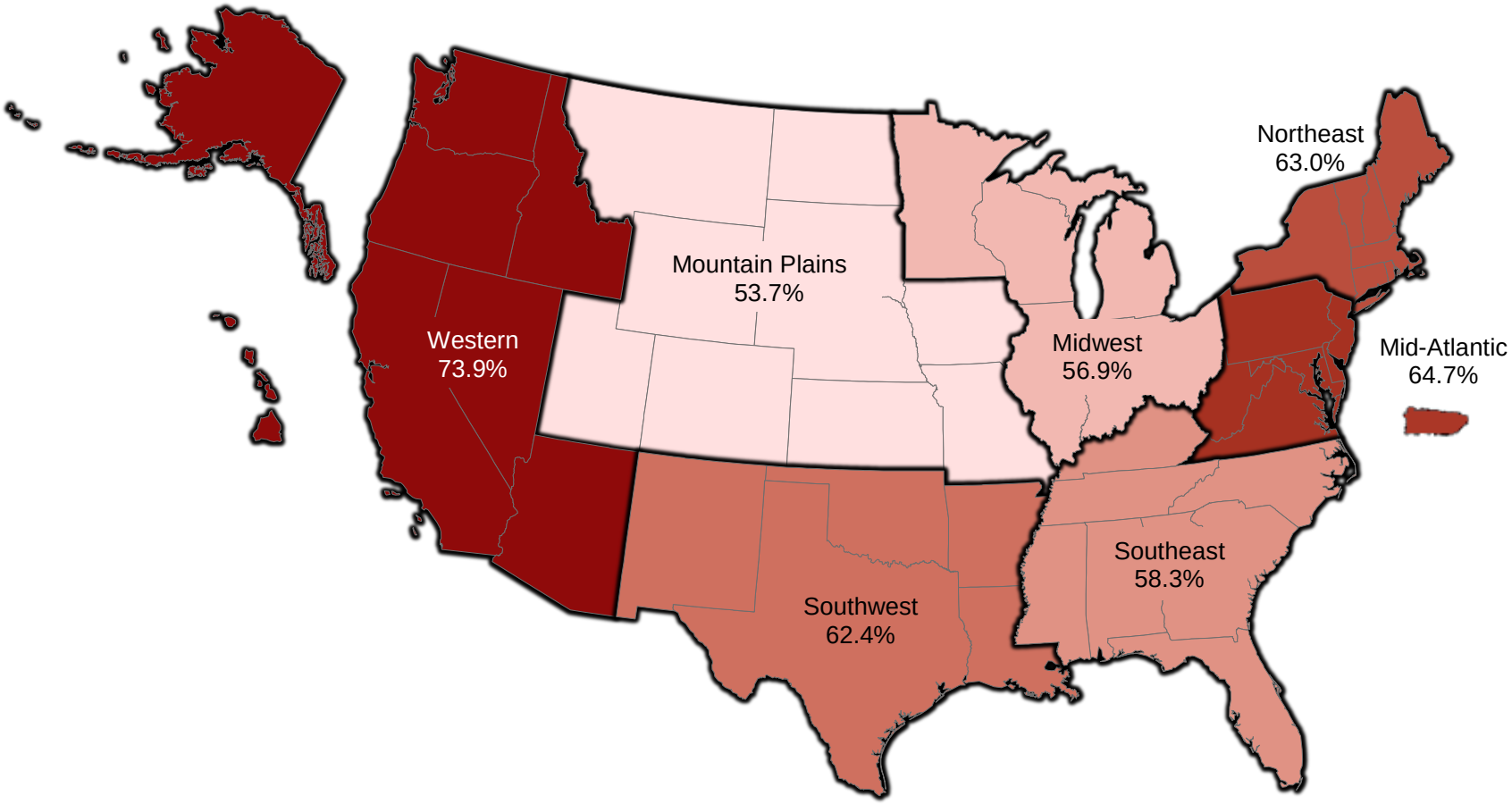
	Infants	Children (age 1 to 4)	Pregnant Women	All Postpartum Women	Total
Coverage Rate, 2010					
Northeast	84.8%	52.8%	70.0%	82.1%	63.0%
Mid-Atlantic	85.5%	53.3%	69.2%	78.6%	62.8%
Southeast	83.6%	47.5%	68.8%	76.6%	58.6%
Midwest	82.8%	47.0%	68.5%	70.2%	57.4%
Southwest	87.0%	52.2%	73.2%	87.7%	63.9%
Mountain Plains	76.7%	43.7%	58.7%	71.4%	53.6%
Western	88.6%	64.4%	78.4%	90.0%	72.5%
Total	**84.8%**	**52.4%**	**70.8%**	**80.6%**	**62.6%**
Coverage Rate, 2011					
Northeast	81.9%	54.7%	66.9%	74.1%	63.0%
Mid-Atlantic	86.8%	55.4%	69.7%	79.1%	64.7%
Southeast	83.2%	47.5%	67.6%	73.8%	58.3%
Midwest	79.6%	47.6%	65.6%	65.5%	56.9%
Southwest	82.0%	52.0%	69.4%	82.5%	62.4%
Mountain Plains	76.1%	44.5%	60.1%	66.9%	53.7%
Western	89.0%	67.3%	79.0%	82.9%	73.9%
Total	**83.4%**	**53.6%**	**69.5%**	**76.0%**	**62.7%**
Percent Change in Coverage Rate, 2011 vs 2010					
Northeast	-3.4%	3.6%	-4.5%	-9.8%	0.0%
Mid-Atlantic	1.5%	4.0%	0.8%	0.6%	3.0%
Southeast	-0.5%	0.0%	-1.8%	-3.7%	-0.5%
Midwest	-3.9%	1.3%	-4.2%	-6.7%	-1.0%
Southwest	-5.7%	-0.4%	-5.3%	-6.0%	-2.4%
Mountain Plains	-0.8%	1.8%	2.5%	-6.2%	0.2%
Western	0.5%	4.6%	0.7%	-7.9%	2.0%
Total	**-1.7%**	**2.1%**	**-1.8%**	**-5.7%**	**0.2%**

Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, Census International Data Base

The 2011 WIC coverage rate appears to vary somewhat by region. Considering all WIC-eligible individuals combined, the overall WIC coverage rate is lowest in the Mountain Plains region, at 53.7 percent in 2011 (Figure 2 and Table 13). The overall WIC coverage rate is highest in the Western region (73.9 percent in 2011). Some regions, while having an overall coverage rate similar to the national rate, have rates in some subgroups that are noticeably higher or lower than the national rate (Figures 3 through 6 map the coverage rates by region for infants, children, pregnant women, and postpartum women, respectively). For example, the Northeast and Southwest have overall coverage rates within half a percentage point of the national rate, but subgroup rates as much as 6.5 percentage points above (postpartum women in the Southwest) and 2.6 percentage points below (pregnant women in the Northeast) the national rate. However, as mentioned above, all the WIC eligibility estimates are affected by sampling variability. Thus, the actual coverage rates could be somewhat higher or lower than shown.

Figure 2: WIC Coverage Rate for All Participants by FNS Region, CY 2011

National Coverage Rate: 62.7%



Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, WIC Administrative Data

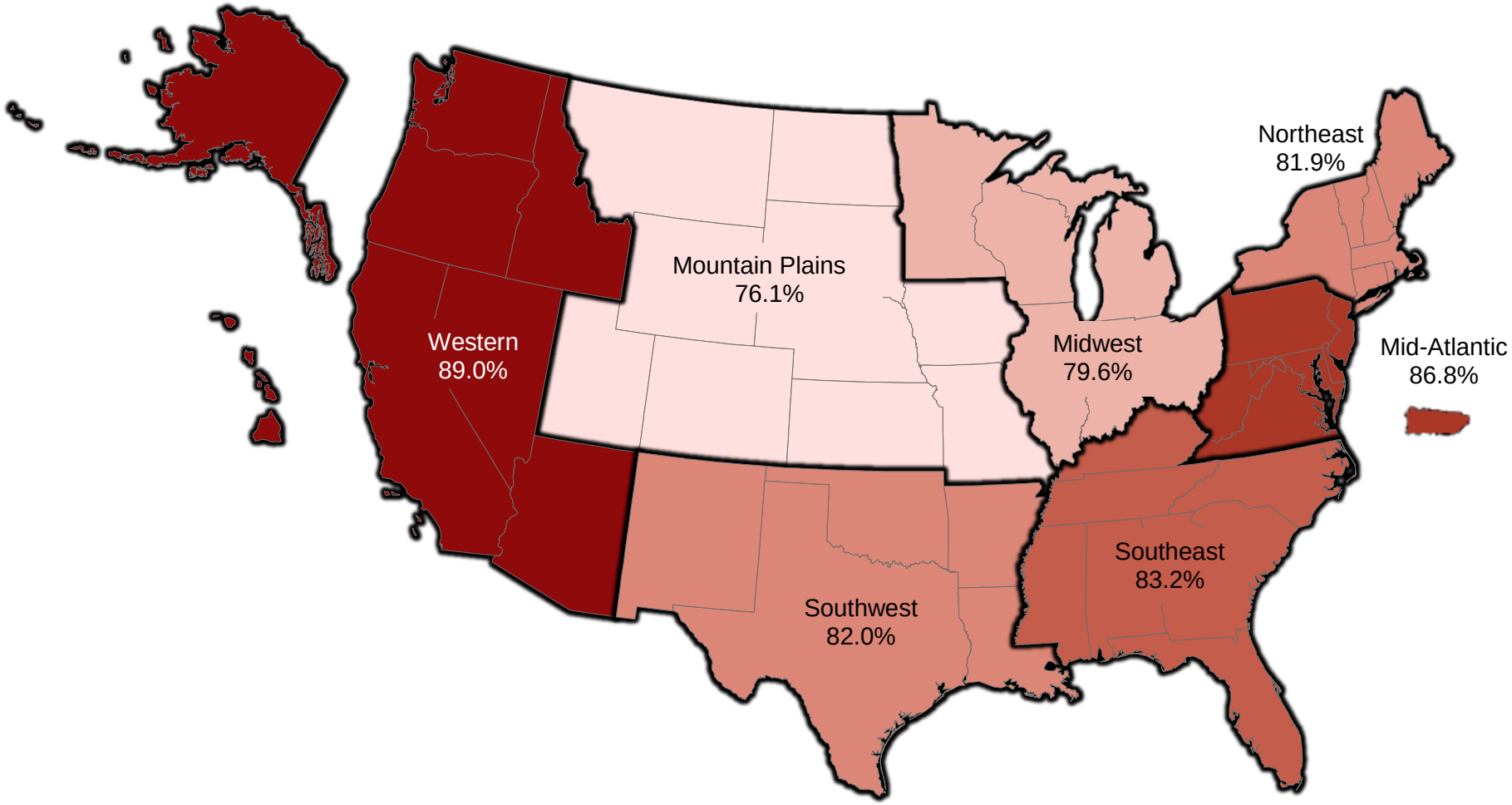
Table 13: WIC Eligibles and Coverage Rates by FNS Region and Participant Group, CY 2011

	Infants	Children (age 1 to 4)	Pregnant Women	All Post-Partum Women	Total
Eligibles					
Northeast	220,734	745,478	113,570	145,098	1,224,880
Mid-Atlantic	275,015	988,832	141,498	168,040	1,573,385
Southeast	523,653	1,876,799	269,425	314,180	2,984,057
Midwest	388,857	1,366,019	200,071	235,566	2,190,513
Southwest	416,382	1,398,047	214,233	249,257	2,277,919
Mountain Plains	185,360	685,266	95,370	118,365	1,084,360
Western	506,308	1,827,564	260,501	347,965	2,942,339
Total	**2,516,309**	**8,888,005**	**1,294,668**	**1,578,471**	**14,277,453**
Participants					
Northeast	180,829	407,834	75,977	107,478	772,118
Mid-Atlantic	238,705	548,062	98,657	132,857	1,018,281
Southeast	435,887	891,171	182,103	231,882	1,741,043
Midwest	309,529	650,643	131,298	154,318	1,245,788
Southwest	341,358	726,522	148,611	205,519	1,422,010
Mountain Plains	141,007	304,615	57,336	79,224	582,182
Western	450,643	1,230,785	205,704	288,324	2,175,456
Total	**2,097,958**	**4,759,632**	**899,686**	**1,199,602**	**8,956,878**
Coverage Rates					
Northeast	81.9%	54.7%	66.9%	74.1%	63.0%
Mid-Atlantic	86.8%	55.4%	69.7%	79.1%	64.7%
Southeast	83.2%	47.5%	67.6%	73.8%	58.3%
Midwest	79.6%	47.6%	65.6%	65.5%	56.9%
Southwest	82.0%	52.0%	69.4%	82.5%	62.4%
Mountain Plains	76.1%	44.5%	60.1%	66.9%	53.7%
Western	89.0%	67.3%	79.0%	82.9%	73.9%
Total	**83.4%**	**53.6%**	**69.5%**	**76.0%**	**62.7%**

Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, Census International Data Base, WIC Administrative Data

Figure 3: WIC Coverage Rate for Infants by FNS Region, CY 2011

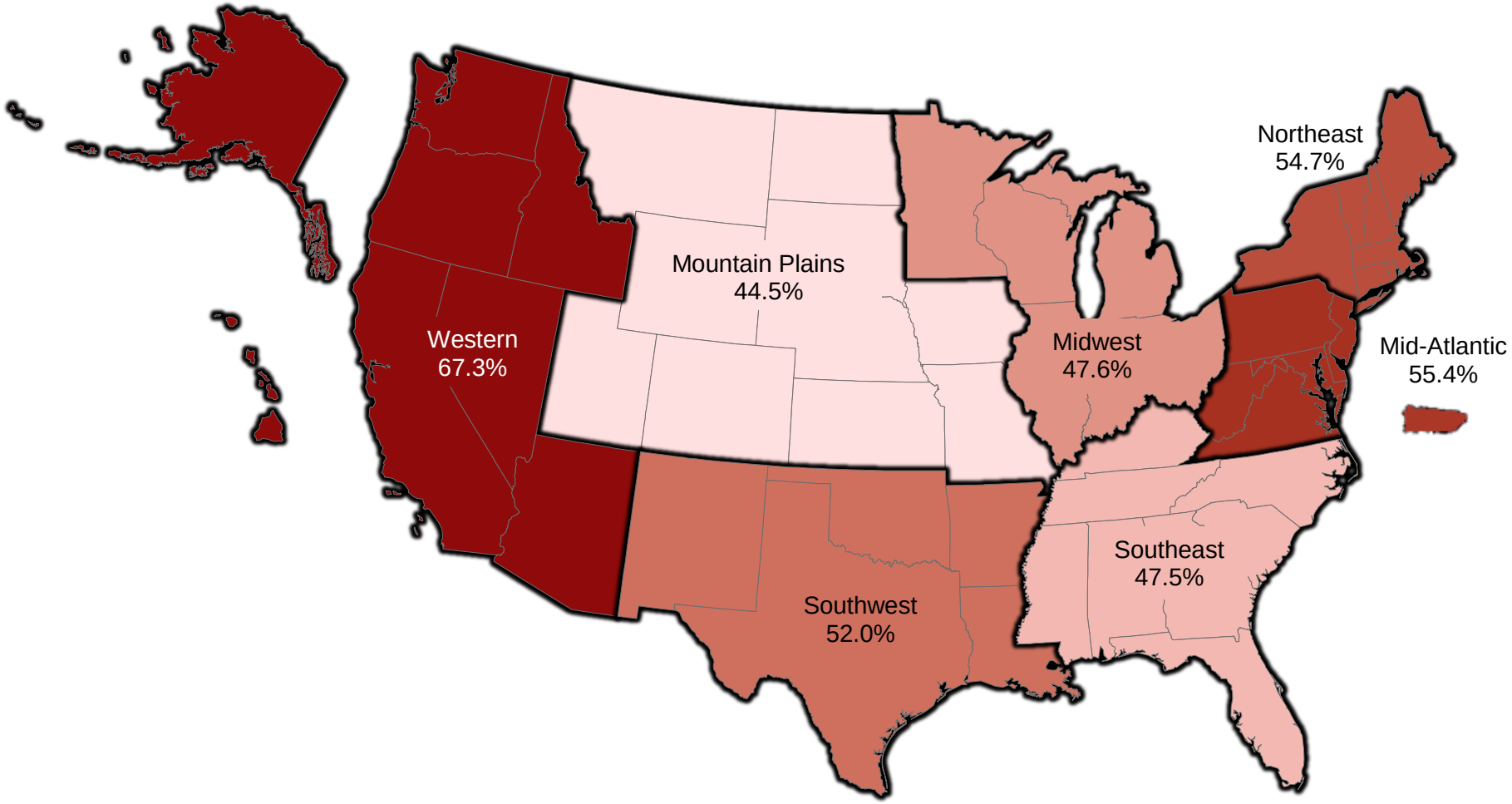
National Coverage Rate: 83.4%



Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, WIC Administrative Data

Figure 4: WIC Coverage Rate for Children (Ages 1-4) by FNS Region, CY 2011

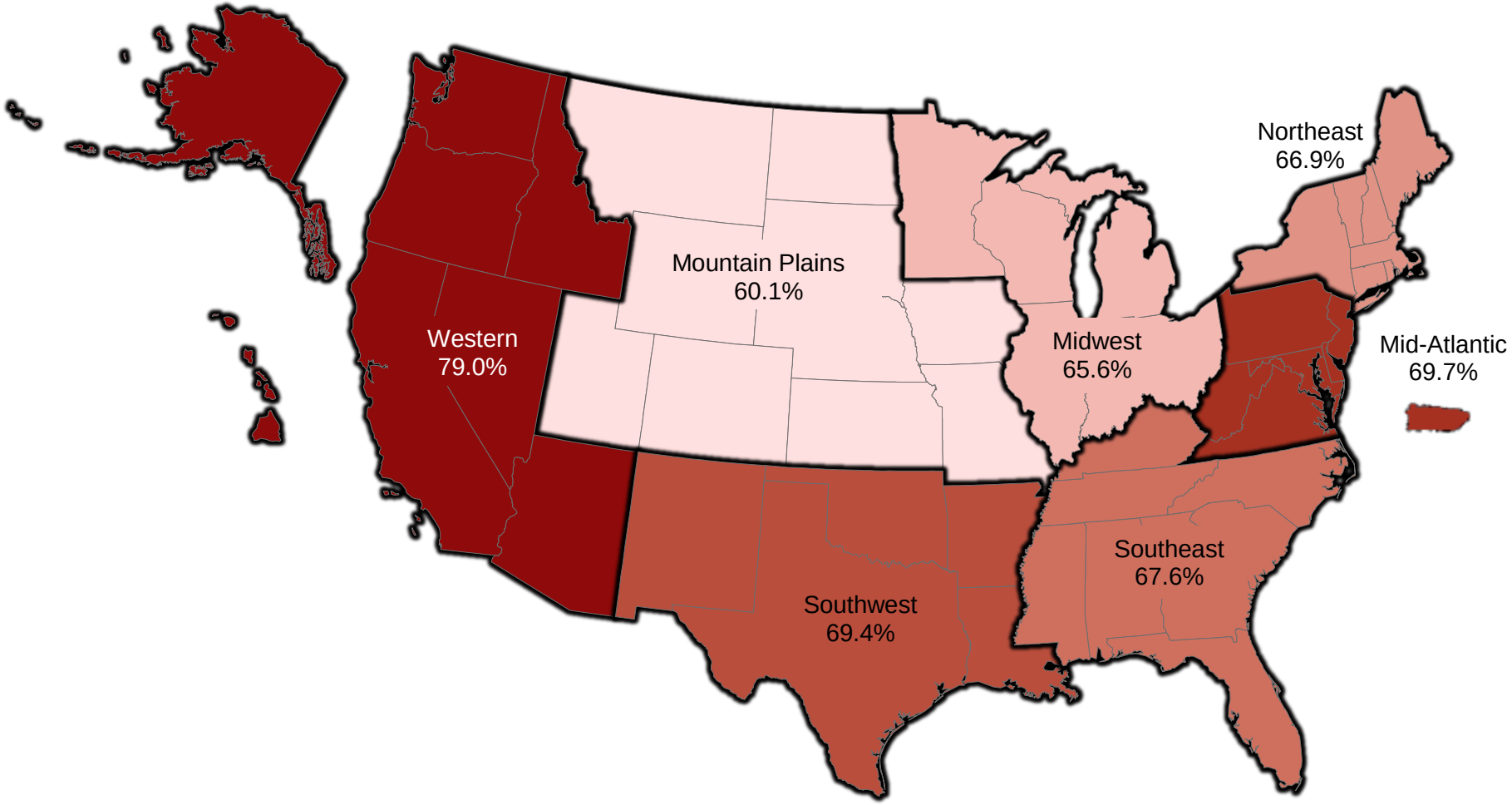
National Coverage Rate: 53.6%



Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, WIC Administrative Data

Figure 5: WIC Coverage Rate for Pregnant Women by FNS Region, CY 2011

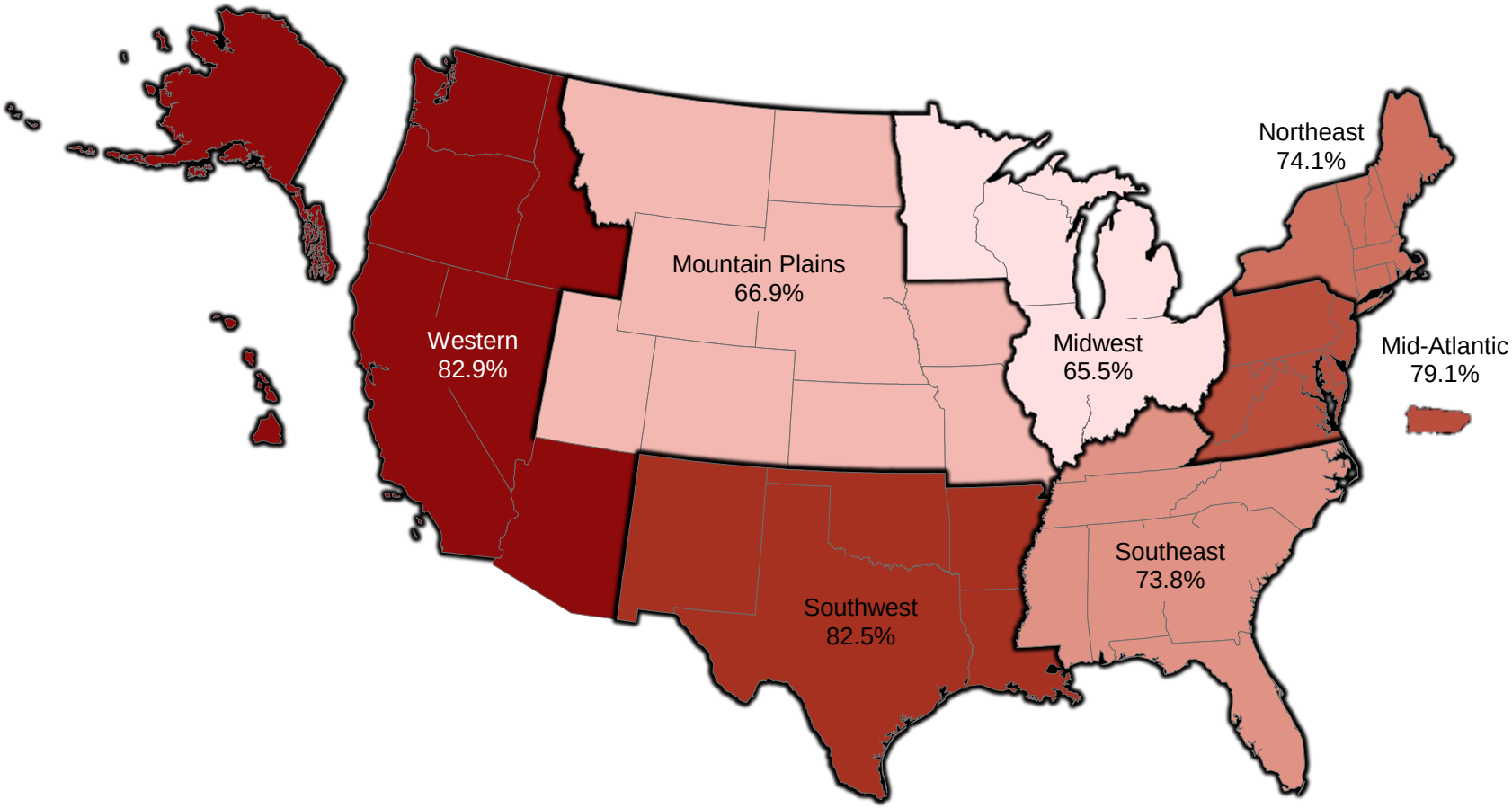
National Coverage Rate: 69.5%



Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, WIC Administrative Data

Figure 6: WIC Coverage Rate for All Postpartum Women by FNS Region, CY 2011

National Coverage Rate: 76.0%



Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, WIC Administrative Data

Coverage rate estimates for 2011 show substantial variation between States (Table 14 and Figure 7).[45] In 2011, the State coverage rates range from 44 percent in Montana to 87 percent in Vermont. Focusing on the four States with the largest numbers of WIC eligibles, California's overall coverage rate is well above the national average, at 82 percent; the coverage rate in Florida is slightly below the national average, at 60 percent, and the rates in Texas and New York are slightly above the national average (64 and 65 percent, respectively). The State map (Figure 7) shows a contiguous area of low WIC participation rates from Montana in the north through Idaho, Utah, and Colorado, and into New Mexico. The high overall rate in the Western region is primarily due to the very high rate in California. The Northeast includes one State with a very high coverage rate (Vermont), as well as States with rates within a few points of the national average (Massachusetts, New York, and Rhode Island), and States with lower than average rates (Connecticut, Maine, and New Hampshire).

Between 2010 and 2011, national-level coverage rates appear to have fallen for infants and women, but increased for children, with almost no change when all eligibles are considered as a group (Table 8). However, the coverage rates estimated at the regional level do show some changes from the 2010 estimates (Table 12 and Figure 8). In the Western region, the coverage rate appears to have increased from 72.5 percent in 2010 to 73.9 percent in 2011. In the Southwest, the coverage rate appears to have fallen from 63.9 percent to 62.4 percent between the two years. As mentioned above, some changes in estimates between 2010 and 2011 are due to methodological changes, so year-to-year changes should be interpreted with caution.

Considering all WIC subgroups together (Figure 8), the coverage rates in the Western region have been consistently higher than in any other region across the entire period from 2000 to 2011, while the coverage rates in the Mountain Plains have generally been lower than in other regions. Coverage rates have risen slightly since the middle part of the decade in all regions. The regional-level coverage rates for infants across the decade (Figure 9) show a spike in the rate in 2002; this is due to a drop in the national-level infant eligibility estimate for that year (2.2 million for 2002, relative to 2.5 million in both 2001 and 2003). Coverage rates across time by region are shown for children in Figure 10, for pregnant women in Figure 11, and for postpartum women in Figure 12.

[45] Table B.2 in the Appendix shows the same information as Table 14, but the States are categorized by region rather than alphabetically.

Table 14: WIC Eligibles and Coverage Rates by State and FNS Region, CY 2011

	Eligibles	Participants	Coverage Rate		Eligibles	Participants	Coverage Rate
State[a]							
Alabama	234,929	143,562	61.1%	New York	783,538	512,659	65.4%
Alaska	40,939	26,244	64.1%	North Carolina	478,477	267,198	55.8%
Arizona	332,799	198,472	59.6%	North Dakota	27,251	14,026	51.5%
Arkansas	157,458	93,559	59.4%	Ohio	479,586	278,781	58.1%
California	1,799,515	1,469,758	81.7%	Oklahoma	200,181	126,007	62.9%
Colorado	208,414	104,782	50.3%	Oregon	175,055	111,764	63.8%
Connecticut	109,316	56,036	51.3%	Pennsylvania	449,881	256,620	57.0%
Delaware	35,582	22,529	63.3%	Puerto Rico	232,447	195,317	84.0%
D.C.	24,504	16,459	67.2%	Rhode Island	37,597	24,413	64.9%
Florida	822,148	493,613	60.0%	South Carolina	237,888	130,640	54.9%
Georgia	524,132	306,249	58.4%	South Dakota	34,159	22,556	66.0%
Hawaii	51,999	36,797	70.8%	Tennessee	301,084	161,539	53.7%
Idaho	90,105	43,705	48.5%	Texas	1,542,052	988,807	64.1%
Illinois	574,785	294,732	51.3%	Utah	150,567	72,715	48.3%
Indiana	301,118	167,013	55.5%	Vermont	18,117	15,782	87.1%
Iowa	121,220	70,605	58.2%	Virginia	264,798	156,670	59.2%
Kansas	135,379	75,246	55.6%	Washington	295,601	193,727	65.5%
Kentucky	210,544	141,180	67.1%	West Virginia	72,773	49,000	67.3%
Louisiana	250,221	148,925	59.5%	Wisconsin	231,633	120,856	52.2%
Maine	46,292	26,259	56.7%	Wyoming	24,501	12,913	52.7%
Maryland	206,636	147,387	71.3%				
Massachusetts	199,196	120,203	60.3%	**FNS Region**[b]			
Michigan	415,640	253,859	61.1%	Northeast	1,224,880	772,115	63.0%
Minnesota	187,751	130,545	69.5%	Mid-Atlantic	1,573,385	1,018,278	64.7%
Mississippi	174,855	97,056	55.5%	Southeast	2,984,057	1,741,037	58.3%
Missouri	255,843	145,588	56.9%	Midwest	2,190,513	1,245,786	56.9%
Montana	46,325	20,310	43.8%	Southwest	2,277,919	1,422,009	62.4%
Nebraska	80,701	43,442	53.8%	Mountain Plains	1,084,360	582,183	53.7%
Nevada	134,975	76,182	56.4%	Western	2,942,339	2,175,451	73.9%
New Hampshire	30,823	16,763	54.4%				
New Jersey	281,433	169,075	60.1%	**Total**	**14,277,453**	**8,956,859**	**62.7%**
New Mexico	128,007	64,711	50.6%				

Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, Census International Data Base, WIC Administrative Data

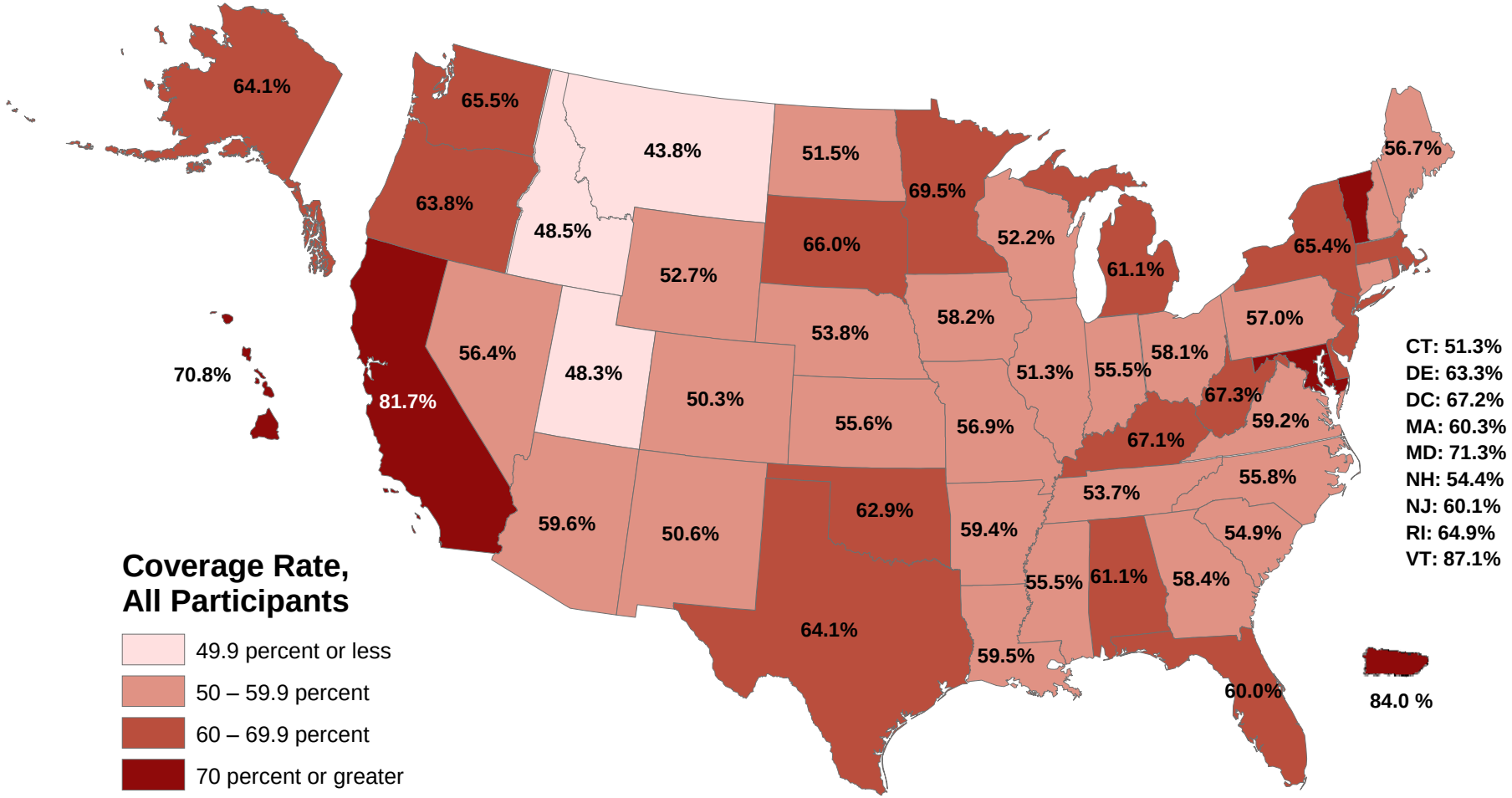
Notes:

[a] State and regional eligibility estimates and participant data include those eligible for WIC and/or receiving WIC via Indian Tribal Organizations.

[b] Estimates for the other island territories (territories other than Puerto Rico) are included in regional totals but not shown separately due to small sample constraints.

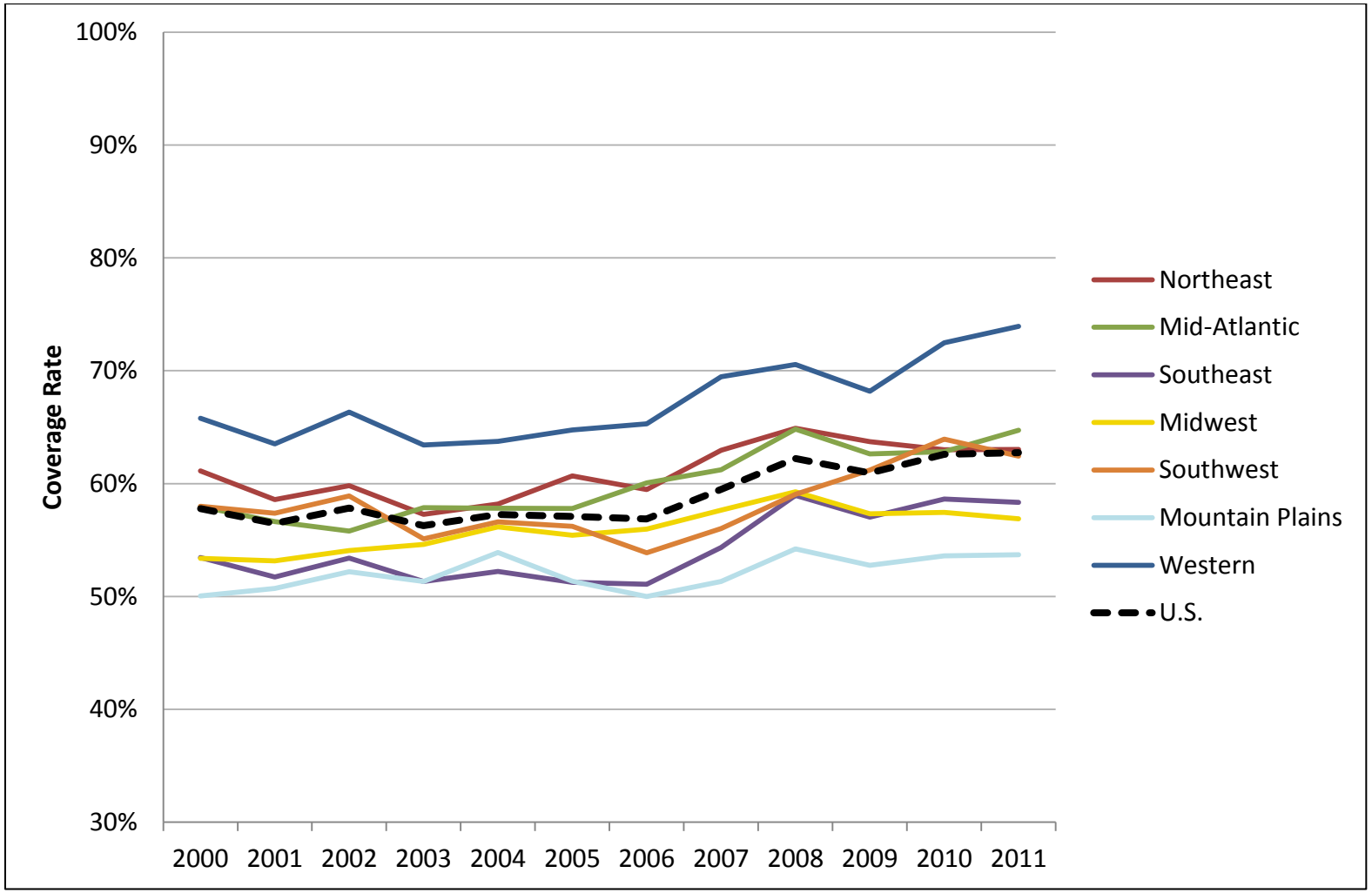
Figure 7: WIC Coverage Rates for All Participants, by State, CY 2011

National Coverage Rate: 62.7%



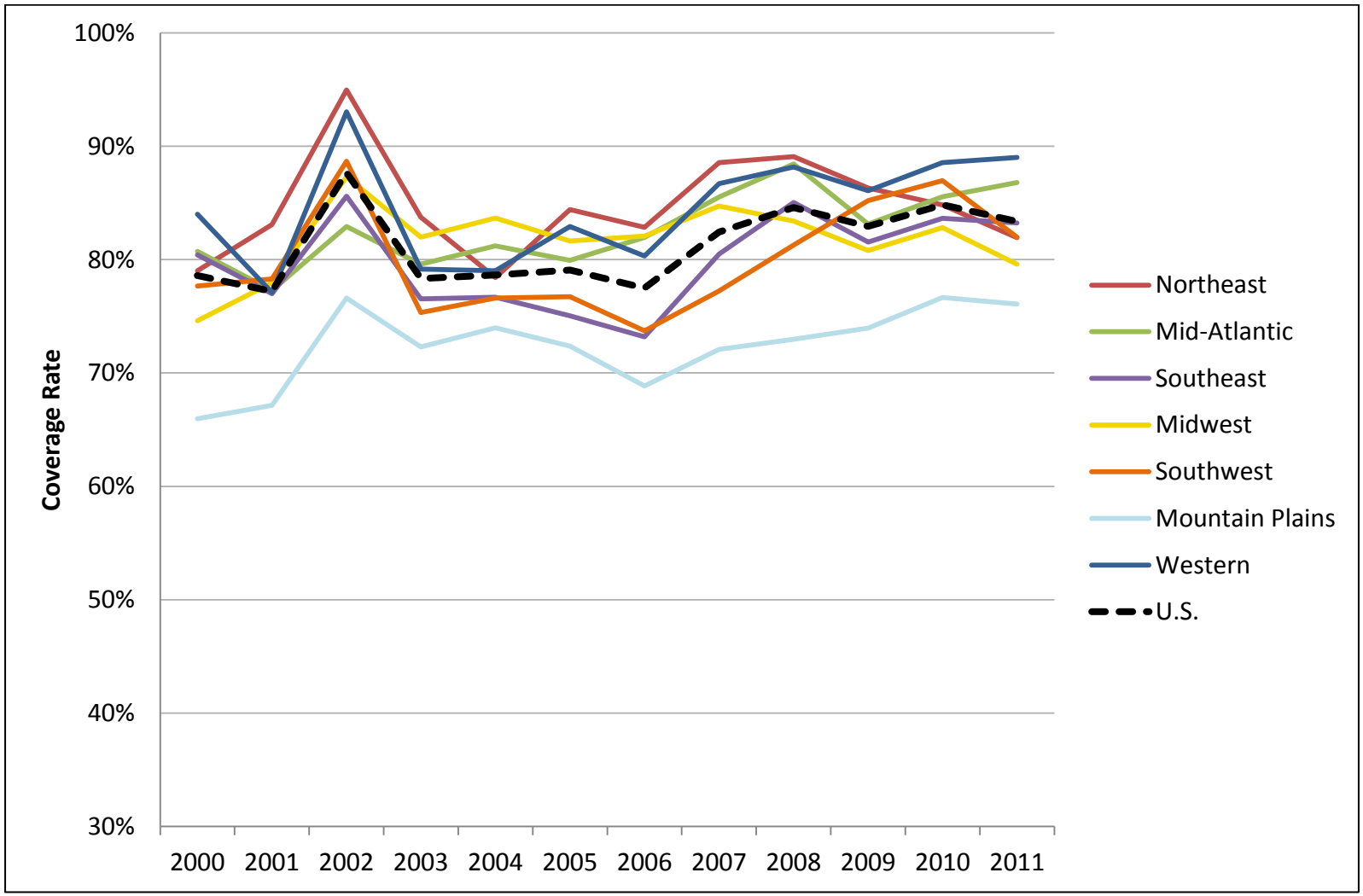
Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, WIC Administrative Data

Figure 8: All Participants Coverage Rate by FNS Region, 2000–2011[a]



Notes:
[a] The upward trend in coverage rates between 2009 and 2010 reflects, in part, the decline in the number of eligibles in 2010 due to new Census population weights.
See Appendix Table D.2 for source information.

Figure 9: Infants Coverage Rate by FNS Region, 2000–2011[a]

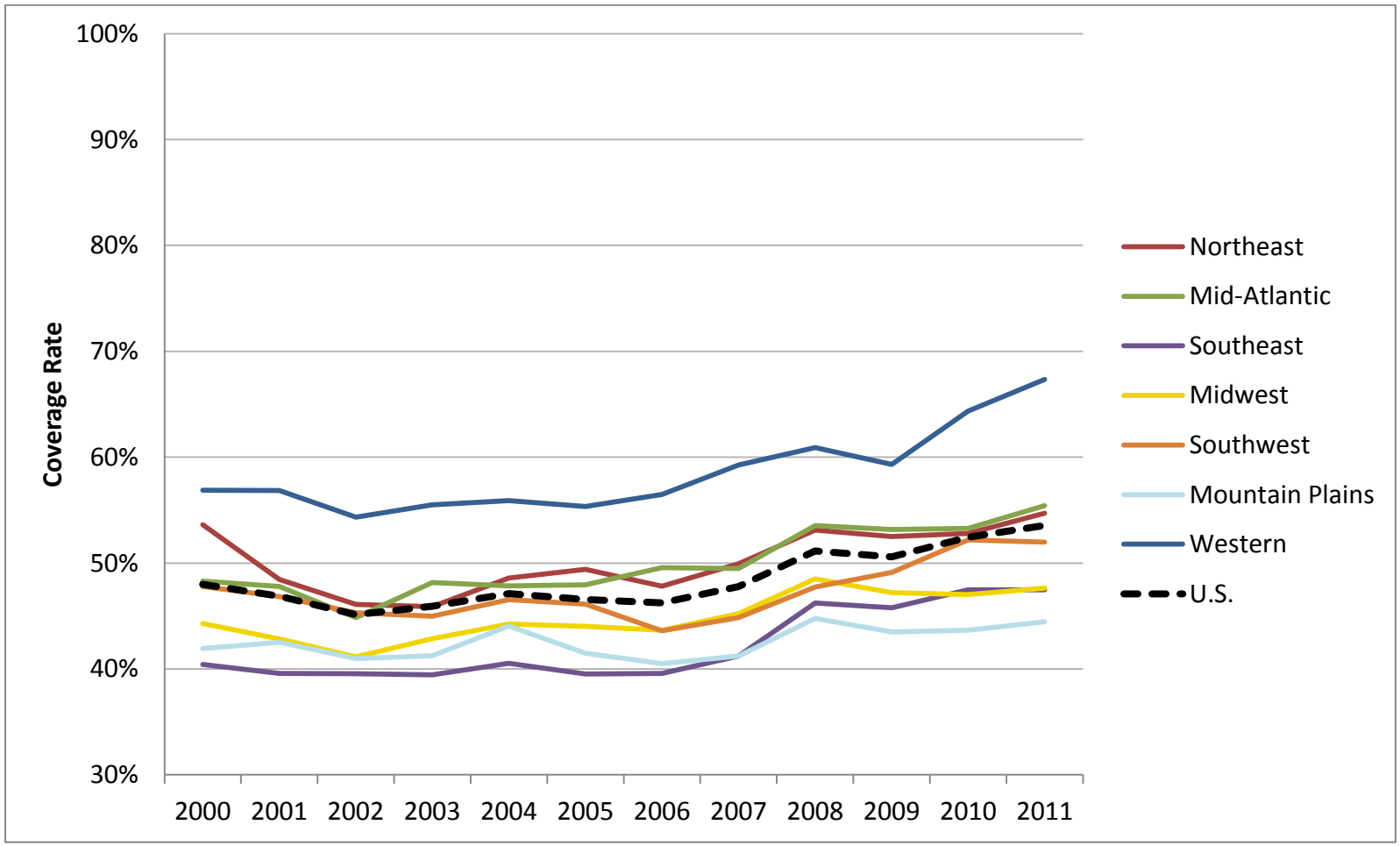


Notes:

[a] The upward trend in coverage rates between 2009 and 2010 reflects, in part, the decline in the number of eligibles in 2010 due to new Census population weights.

See Appendix Table D.2 for source information.

Figure 10: Children (Ages 1-4) Coverage Rate by FNS Region, 2000–2011[a]

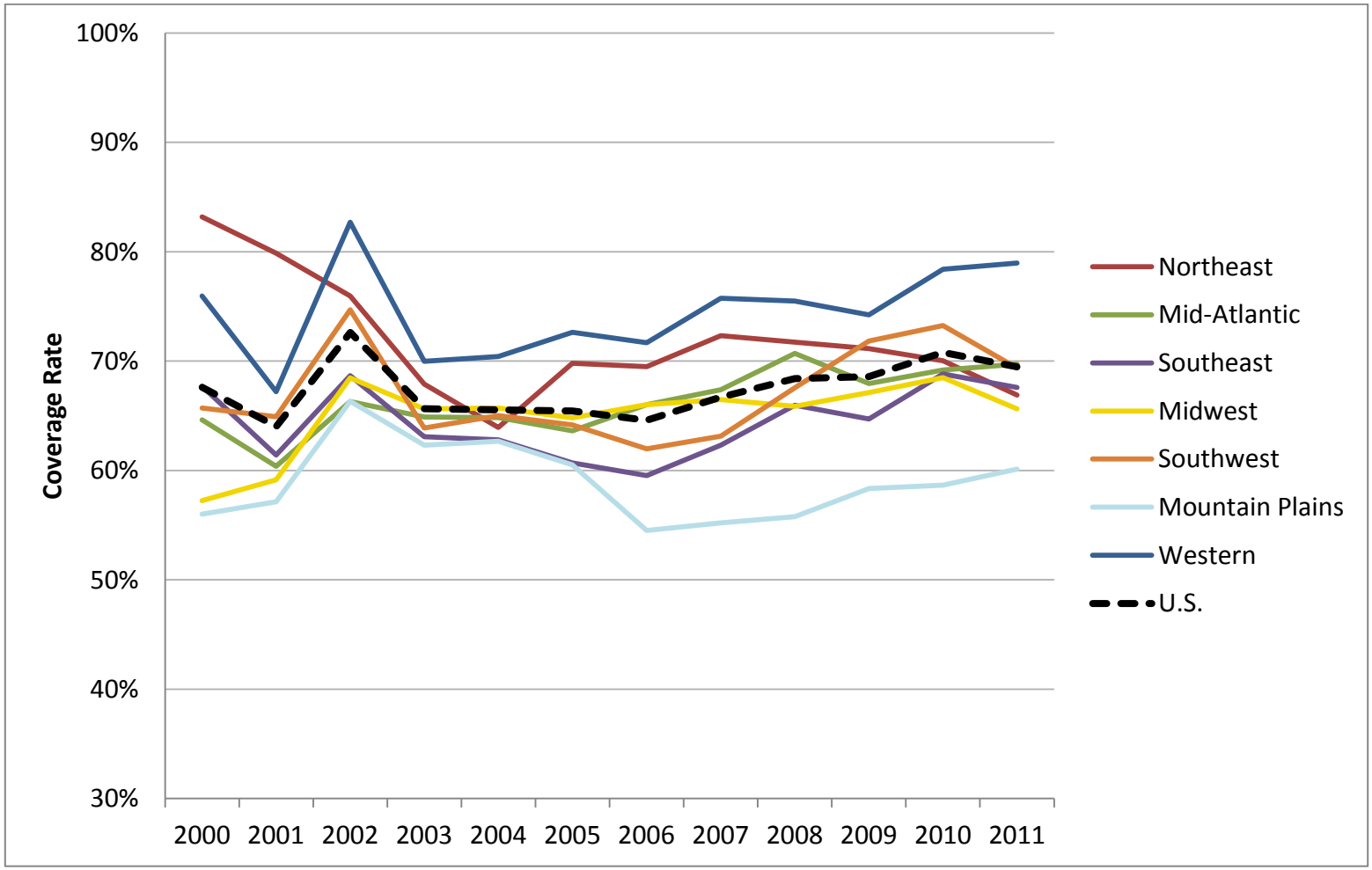


Notes:

[a] The upward trend in coverage rates between 2009 and 2010 reflects, in part, the decline in the number of eligibles in 2010 due to new Census population weights.

See Appendix Table D.2 for source information.

Figure 11: Pregnant Women Coverage Rate by FNS Region, 2000–2011 [a]

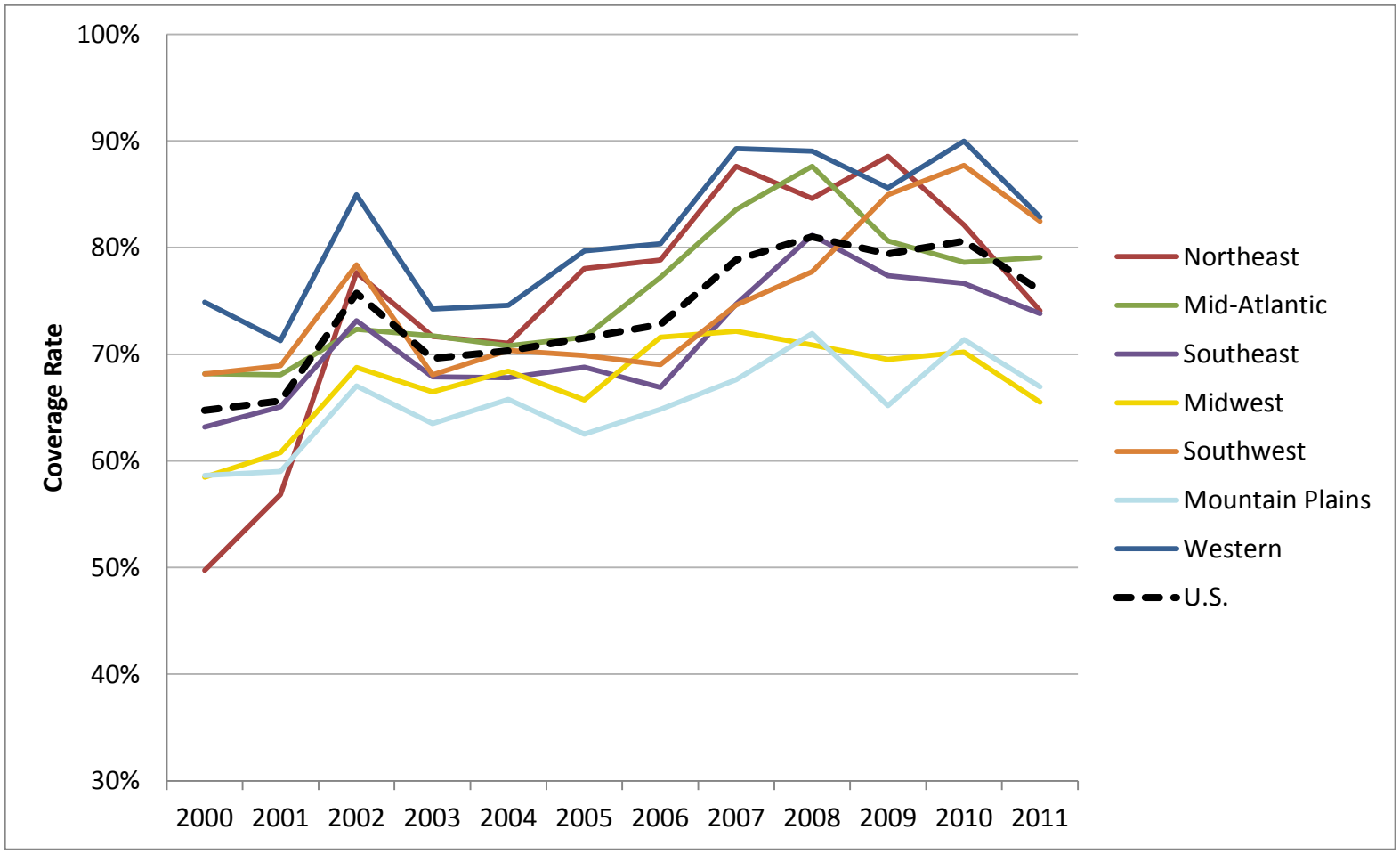


Notes:

[a] The upward trend in coverage rates between 2009 and 2010 reflects, in part, the decline in the number of eligibles in 2010 due to new Census population weights.

See Appendix Table D.2 for source information.

Figure 12: Postpartum Women Coverage Rate by FNS Region, 2000–2011[a]



Notes:
[a] The upward trend in coverage rates between 2009 and 2010 reflects, in part, the decline in the number of eligibles in 2010 due to new Census population weights.
See Appendix Table D.2 for source information.

Measures of Precision of the Estimates of Eligibility

Standard errors of estimates were produced for the 2011 national, State, and regional estimates.[46] The national-level estimates are all derived from the CPS-ASEC using the generalized variance estimates described in the technical documentation for the March 2012 CPS-ASEC.[47] The standard errors for the State-level estimates were derived using a generalized variance model described in the annual ACS report based on one year accuracy of the data.[48] Tables 15 and 16 show these standard errors and also the coefficient of variation, which is the ratio of the standard deviation to the eligibility estimate. Since the coefficient of variation is expressed in percentage terms, it allows easier comparisons of the relative precision of various estimates.

The coefficients of variation for the 2011 national eligibility estimates for infants and pregnant women are the highest among all participant groups at 4.6 percent (Table 15). While the coefficient of variation for postpartum women is slightly lower at 3.3 percent, the relative error for the estimate for all children drops to 2.4 percent, reflecting the larger sample size for this estimation group**.** The greatest precision of eligibility estimates is for the total of all WIC eligibles (1.9 percent).

At the State level, the precision of the estimates is considerably lower than at the national level (Table 16). Given the large range of coefficient of variation (2.5 percent for California to 19.5 percent for Vermont), caution should be exercised when using the State estimates, especially for smaller States. At the regional level, however, the relative precision of the estimates is quite high.

The statistics can be used to estimate a confidence interval around the estimates of WIC eligibility. For example, we can be 90 percent sure that the actual number of WIC eligible people (overall, by subgroup, by region, or by State) is *at minimum* equal to our best guess minus 1.65 times the standard error, and is *at most* equal to our best guess plus 1.65 times the standard error. As an illustration of the computation, consider the overall WIC eligibility estimate for the Northeast. Our best estimate is that there are 1,224,880 people eligible for WIC in the Northeast in the average month of 2011. The standard error of that estimate is 38,347. We can be 90 percent sure that the true number falls within the range from (1,224,880 minus (1.65 * 38,347)) to (1,224,880 plus (1.65 * 38,347)), or from 1,161,607 to 1,288,153. For a 95 percent level of confidence, the process is the same, but a factor of 1.96 is applied to the standard error.

[46] Estimates of WIC eligibility in the other island territories are not based upon samples but on Census Bureau estimates of the population by age and are not subject to sampling variability. While non-sampling error can still be present in the other island estimates, standard errors for the other island territories cannot be computed because of the non-sample based methodology used in the estimation.

[47] These reports can be found at http://www.census.gov/cps/methodology/techdocs.html.

[48] These reports can be found at http://www.census.gov/acs/www/data_documentation/pums_documentation/.

Table 15: WIC Eligibles and Standard Errors by FNS Region and Participant Group, CY 2011

	Infants	Children (1-4)	Pregnant Women	All Post-Partum Women	Total
Eligibles[a]					
Northeast	220,734	745,478	113,570	145,098	1,224,880
Mid-Atlantic	234,706	837,389	120,759	142,754	1,335,608
Southeast	523,653	1,876,799	269,425	314,180	2,984,057
Midwest	388,857	1,366,019	200,071	235,566	2,190,513
Southwest	416,382	1,398,047	214,233	249,257	2,277,919
Mountain Plains	185,360	685,266	95,370	118,365	1,084,360
Western	502,426	1,814,529	258,503	345,530	2,920,988
Total	**2,472,118**	**8,723,527**	**1,271,931**	**1,550,750**	**14,018,325**
Standard Error[a]					
Northeast	16,929	29,501	8,710	8,131	38,347
Mid-Atlantic	17,621	31,873	9,066	7,980	40,594
Southeast	30,946	56,980	15,922	13,547	71,829
Midwest	24,887	44,902	12,805	10,808	57,142
Southwest	26,139	45,670	13,449	11,506	58,782
Mountain Plains	15,139	27,920	7,789	6,898	35,441
Western	30,002	55,523	15,437	14,608	70,676
Total	**113,815**	**211,622**	**58,559**	**50,504**	**265,902**
Coefficient of Variation[b]					
Northeast	7.7%	4.0%	7.7%	5.6%	3.1%
Mid-Atlantic	7.5%	3.8%	7.5%	5.6%	3.0%
Southeast	5.9%	3.0%	5.9%	4.3%	2.4%
Midwest	6.4%	3.3%	6.4%	4.6%	2.6%
Southwest	6.3%	3.3%	6.3%	4.6%	2.6%
Mountain Plains	8.2%	4.1%	8.2%	5.8%	3.3%
Western	6.0%	3.1%	6.0%	4.2%	2.4%
Total	**4.6%**	**2.4%**	**4.6%**	**3.3%**	**1.9%**

Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, Census International Data Base, WIC Administrative Data

Notes:

[a] Estimates for the territories, including Puerto Rico, are not included in regional totals or standard errors.

[b] The coefficient of variation is defined as the ratio of the standard deviation to the eligibility estimate.

Table 16: WIC Eligibles Standard Errors by State and FNS Region, CY 2011

	Eligibles	Standard Error	Coefficient of Variation[a]		Eligibles	Standard Error	Coefficient of Variation[a]
State[b]							
Alabama	234,929	12,894	5.5%	New York	783,538	25,713	3.3%
Alaska	40,939	5,157	12.6%	North Carolina	478,477	19,196	4.0%
Arizona	332,799	15,556	4.7%	North Dakota	27,251	4,145	15.2%
Arkansas	157,458	10,400	6.6%	Ohio	479,586	19,223	4.0%
California	1,799,515	45,231	2.5%	Oklahoma	200,181	11,768	5.9%
Colorado	208,414	12,055	5.8%	Oregon	175,055	10,936	6.2%
Connecticut	109,316	8,513	7.8%	Pennsylvania	449,881	18,536	4.1%
Delaware	35,582	4,785	13.4%	Puerto Rico	232,447	12,767	5.5%
D.C.	24,504	3,965	16.2%	Rhode Island	37,597	4,922	13.1%
Florida	822,148	26,661	3.2%	South Carolina	237,888	12,941	5.4%
Georgia	524,132	20,319	3.9%	South Dakota	34,159	4,689	13.7%
Hawaii	51,999	5,821	11.2%	Tennessee	301,084	14,813	4.9%
Idaho	90,105	7,698	8.5%	Texas	1,542,052	40,438	2.6%
Illinois	574,785	21,412	3.7%	Utah	150,567	10,133	6.7%
Indiana	301,118	14,710	4.9%	Vermont	18,117	3,526	19.5%
Iowa	121,220	9,072	7.5%	Virginia	264,798	13,662	5.2%
Kansas	135,379	9,595	7.1%	Washington	295,601	14,590	4.9%
Kentucky	210,544	12,093	5.7%	West Virginia	72,773	6,968	9.6%
Louisiana	250,221	13,299	5.3%	Wisconsin	231,633	12,738	5.5%
Maine	46,292	5,492	11.9%	Wyoming	24,501	3,965	16.2%
Maryland	206,636	11,947	5.8%				
Massachusetts	199,196	11,702	5.9%	**FNS Region**[c]			
Michigan	415,640	17,692	4.3%	Northeast	1,224,880	38,347	3.1%
Minnesota	187,751	11,354	6.0%	Mid-Atlantic	1,335,608	40,594	3.0%
Mississippi	174,855	10,979	6.3%	Southeast	2,984,057	71,829	2.4%
Missouri	255,843	13,462	5.3%	Midwest	2,190,513	57,142	2.6%
Montana	46,325	5,471	11.8%	Southwest	2,277,919	58,782	2.6%
Nebraska	80,701	7,325	9.1%	Mountain Plains	1,084,360	35,441	3.3%
Nevada	134,975	9,510	7.0%	Western	2,920,988	70,676	2.4%
New Hampshire	30,823	4,499	14.6%				
New Jersey	281,433	14,244	5.1%	**Total**	**14,018,325**	**265,902**	**1.9%**
New Mexico	128,007	9,263	7.2%				

Source: 2012 CPS-ASEC, 2011 ACS, 2011 PRCS, Census International Data Base, WIC Administrative Data

Notes:

[a] The coefficient of variation is defined as the ratio of the standard deviation to the eligibility estimate.

[b] State and regional eligibility estimates include those eligible for WIC via Indian Tribal Organizations.

[c] Estimates for the territories, including Puerto Rico, are not included in regional totals or standard errors.

Validating the Results

While one would like to assess the accuracy of the eligibility estimates, this cannot be known with certainty since it is impossible to observe eligibility. However, it is important that the estimates are reasonable. One comparison that can produce confidence in the eligibility estimates is to examine whether the FNS participation estimates ever exceed the eligibility estimates by State or region. While it is quite possible that some ineligible individuals do participate, there also are eligible individuals who fail to enroll in the program or who have been inappropriately denied benefits. Thus, any occurrences where the number of participants exceeds the estimated count of eligibles would lead to concerns about the estimation methods.

The FNS estimates of participation may be subject to measurement error, and the estimates of eligibility are likely to be subject to measurement error and potential bias. However, the eligibility estimates are based upon a sample and hence subject to sampling variability, while the FNS participation estimates are not subject to sampling variability. Consequently, even if a participation estimate exceeds the eligibility estimate, one cannot conclude there is something fundamentally wrong with the methodology. A different sample could lead to a different conclusion about the relationship between participation and eligibility. At the level of detail shown in this report, there are no cases where estimated eligibility falls short of FNS participation figures.

Summary

This report estimates that 14.3 million individuals were eligible for WIC during an average month of 2011 across the fifty States, the District of Columbia, Puerto Rico and four other island territories. The estimate includes 2.5 million infants (approximately 63 percent of all infants in the United States and territories), 8.9 million children age 1 through 4 (54 percent of all young children), 1.3 million pregnant women, and 1.6 million postpartum women.

Compared to estimates of WIC eligibility in 2010, the estimates for 2011 show a decline in the number of infants and children who are WIC eligible. The number of infants who were WIC eligible declined by 0.7 percent, while the number of WIC eligible children decreased by 3.6 percent. Two factors are responsible for this decline in the number of WIC eligible infants and children: changes in the total numbers of infants and children used as the base for the estimation (due in part to methodological changes and updated data from the Census Bureau) and an improving economy reflected in a decline in proportion of infants and children eligible during the year (the eligibility rate). The large reduction in the number of WIC-eligible children reflects both of these factors: the total number of children aged 1 through 4 years old was estimated to decline by 1.3 percent while the percentage of young children who were WIC eligible fell from 55.6 percent to 54.3 percent. The smaller reduction in infants who are WIC eligible reflects changes that tended to offset each other. The total number of infants in the population increased by 1.1 percent, while the percentage of infants estimated eligible for WIC fell from 63.8 percent in 2010 to 62.7 percent in 2011.

While WIC eligibility for infants, children, and pregnant women was estimated to decline compared to 2010, the number of postpartum women was estimated to increase by 6.2 percent. The increase is due to an increase in the incidence of breastfeeding from the 2010 IFS survey to the 2011 survey. The increase in the breastfeeding rates resulted in a substantial increase (22.1 percent) in the estimated number of postpartum breastfeeding women, and a related drop (6.6 percent) in the estimate of women eligible as non-breastfeeding mothers in the average month of the year. Breastfeeding postpartum women can gain WIC eligibility for up to one year, while non-breastfeeding mothers can be WIC eligible for only the first six months. Therefore, all else equal, if the share of postpartum women who are breastfeeding increases, the number of postpartum women eligible for WIC in the average month will also increase.

Estimates of eligibles across the regions vary, with the largest shares of infants eligible in the Southeast and Western regions and the lowest in the Mountain Plains and Northeast regions. The geographic distribution of individuals who are WIC-eligible reflect population and income differences, as well as differences in adjunctive eligibility (due to participation in Medicaid, SNAP, and TANF). Two States, California (12.6 percent) and Texas (10.8 percent), together account for roughly one quarter of all WIC eligible individuals.

The WIC coverage rate (the ratio of the number of participants relative to the number of eligibles) was 62.7 percent in 2011. Nationwide, infants have the highest coverage rate at 83.4 percent and children age 1 through 4 have the lowest rate at 53.6 percent. Coverage rates also vary by FNS region, with a coverage rate of 73.9 percent in the Western region and 53.7 percent in the Mountain Plains. Since 2000, coverage rates have been increasing. In 2011, the overall coverage rate showed a small increase compared to 2010. However, this increase in overall coverage rate was due to a substantial increase in the coverage of children (from 52.4 percent to 53.6 percent) offsetting declines in coverage of all other groups.

There are five appendices to this report. The first provides more detailed tables for the national and territorial estimates, and the second provides more detailed tables for the State and regional eligibility estimates. The third appendix provides coverage rate maps for all regions. The fourth appendix shows the WIC eligibility and coverage results for 2000 through 2011. The fifth appendix gives more information on the updated "annual-to-monthly" adjustment factor used for the 2011 computations. Interested readers should consult Betson et al. (2011) for more details on all methods used to produce these estimates.

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