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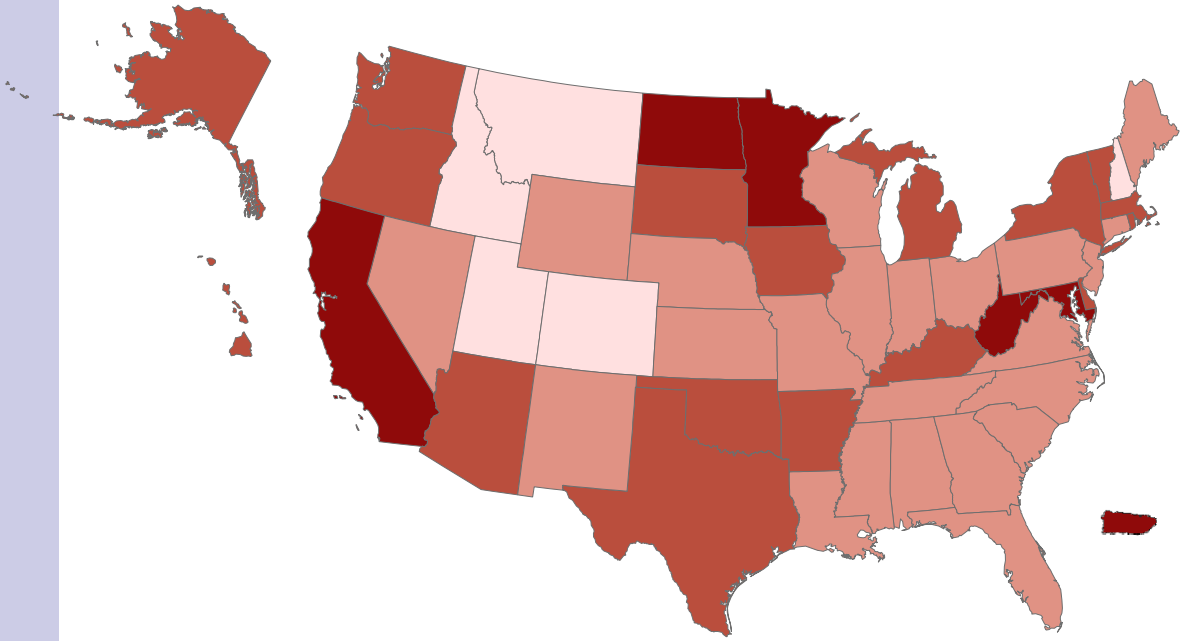

Volume I

National and State-Level Estimates of Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Eligibles and Program Reach, 2012

Final Report

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National and State-Level Estimates of Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Eligibles and Program Reach, 2012

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 2012. 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 WIC eligibility and coverage rates from 2000 through 2012. Estimates of WIC eligibility are provided for the seven FNS regions and each State for 2012.

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 2012 national estimates use the 2013 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 2012 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 2012 Puerto Rico Community Survey (PRCS) and estimates of the population in other territories. Standard errors 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 incomes are less than 185 percent of the federal poverty guideline, and they are adjunctively income eligible if they participate in another safety net program.[1] Specifically, individuals in families that participate in the Supplemental Nutrition Assistance Program

[1] Participation in one of these programs is taken as proof that a person is income eligible for WIC.

(SNAP), the Temporary Assistance for Needy Families (TANF) program, or the Medicaid program (either directly or as a member of a family in which a pregnant woman or an infant is certified as eligible to receive Medicaid benefits) are adjunctively eligible for WIC. 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 Were Eligible for WIC in the Average Month of 2012, and What Portion Received Benefits?

In Calendar Year (CY) 2012, the methods described above suggest that 14.1 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 13.6 million to 14.5 million.

Infants accounted for 17.2 percent of the total WIC-eligible individuals; children ages 1 through 4 comprised 62.8 percent of all eligible individuals (with approximately equal shares across the single years of age); pregnant women accounted for 8.9 percent; and the remaining 11.1 percent were postpartum women.

Estimating the number of people who are eligible for WIC allows an estimation of WIC coverage rates—the percent of WIC-eligible people who receive benefits from the program. During CY 2012, 8.9 million individuals participated in the program in an average month, producing a total coverage rate (participants divided by eligibles) of 63.1 percent. Coverage rates vary across the subgroups. The coverage rate for children was estimated at 53.4 percent, lower than the rates for other eligible groups. Infants and postpartum non-breastfeeding women had the highest coverage rates at 85.1 and 84.6 percent, respectively.

Exhibit ES.1: WIC National-Level Eligibles and Coverage Rates by Participant Group in an Average Month: CY 2012

NOTE: This table includes estimates for the territories

Participant Group	Number Eligible	Percent of Total Eligible	Number Participating	Coverage Rate
Infants	2,420,597	17.2%	2,059,436	85.1%
Total Children Ages 1-4	8,823,888	62.8%	4,716,344	53.4%
Children Age 1[a]	2,185,171	15.5%		
Children Age 2[a]	2,196,651	15.6%		
Children Age 3[a]	2,232,286	15.9%		
Children Age 4[a]	2,209,780	15.7%		
Pregnant Women	1,245,423	8.9%	883,053	70.9%
Postpartum Women	1,563,454	11.1%	1,203,489	77.0%
Breastfeeding Women	839,736	6.0%	591,393	70.4%
Non-Breastfeeding Women	723,718	5.1%	612,097	84.6%
All Participant Groups	**14,053,362**	**100.0%**	**8,862,323**	**63.1%**

Source: 2013 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.

Did WIC Eligibility Change from 2011 to 2012?

Our best estimate of total WIC eligibility in 2012 is 1.6 percent lower than our best estimate for 2011 (Exhibit ES.2). However, when specific participant groups are considered, the changes from 2011 vary from the overall change in both magnitude and direction.

The decrease in the estimated number of WIC-eligible infants (3.8 percent) is more than double the overall decrease. This decline in eligibility is a result of both a decrease in the estimated population of infants and a decline in the portion of infants meeting program eligibility requirements. The estimate of the total infant population used in creating the estimates is 1.8 percent lower than the infant population figure used for the 2011 estimates; also, the portion of infants meeting eligibility requirements declined from 63 percent to 61 percent. Among children however, the changes were more modest. Between 2011 and 2012 the estimated population decreased by 1.1 percent, while the portion of children meeting eligibility requirements increased very slightly (from 54.3 percent to 54.5 percent), resulting in a net decrease in the eligible population of children of 0.7 percent.

Among women, the change in eligibility of pregnant women follows the change for infants (i.e., a 3.8 percent decrease). While postpartum women as a group show only a slight decline (1.0 percent), each of the two subgroups show larger and opposite changes – the

number of non-breastfeeding women eligible for WIC decreases by 5.7 percent and the number of breastfeeding women eligible for WIC *increases* by 3.5 percent. This increase among breastfeeding women is a result of an apparent increase in breastfeeding rates, according to the survey used for this analysis (the Infant Feeding Survey, conducted annually by Abbott Laboratories).

However, from a statistical standpoint, we cannot rule out the possibility that all of these changes in WIC eligibility estimates are due solely to sampling variability in the CPS-ASEC survey data. When tested at a 90 percent level of confidence, none of the changes described above are statistically significant. In other words, we cannot be 90 percent certain that these changes in eligibility are true changes, rather than being due to sampling variability in the surveys.

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 2011 to 2012

NOTE: This table includes estimates for the territories.

Participant Group	Total Eligibles		Percent Change
	2012	2011	
Infants	2,420,597	2,516,309	-3.8%
Total Children Ages 1-4	8,823,888	8,888,005	-0.7%
Pregnant Women	1,245,423	1,294,668	-3.8%
Postpartum Breastfeeding Women	839,736	811,356	3.5%
Postpartum Non-Breastfeeding Women	723,718	767,116	-5.7%
Total WIC Eligibles	**14,053,362**	**14,277,453**	**-1.6%**

Source: 2013 and 2012 CPS-ASEC; 2004 and 2008 SIPP panels; 2001-2002, 2003-2004, 2005-2006 NHANES

Note: Changes in the number of eligibles between 2011 and 2012 are not statistically significant at the 90 percent confidence level -- all changes could be due solely to sampling variability in the survey.

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 1.1 percent per year, resulting in a total 2012 eligibility estimate 12.6 percent higher than the 2000 estimate (Exhibit ES.3). Most of the increase in total WIC eligibility since 2000 is due to a 19.2 percent increase in the estimated number of young children eligible for the program. The number of eligible infants and eligible pregnant women has declined in recent years, and is estimated to be only 0.1 percent higher in 2012 than in 2000, while the population of eligible postpartum women is estimated to have increased by 10.1 percent. During the same period, the number of annual births in the United States mainland and territories declined by about 3 percent; 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.[2]

Exhibit ES.3: Growth in WIC Eligible Population, 2000-2012

NOTE: This table includes estimates for the territories

Participant Group	Cumulative Growth	Average Annual Growth
Infants	0.1%	0.0%
Total Children Ages 1-4	19.2%	1.6%
Pregnant Women	0.1%	0.0%
All Postpartum Women	10.1%	0.9%
All Participant Groups	**12.6%**	**1.1%**

Source: 2013 CPS-ASEC, ACS, PRCS, Census International Data Base, WIC Administrative Data

How does the Coverage Rate Vary Over Time?

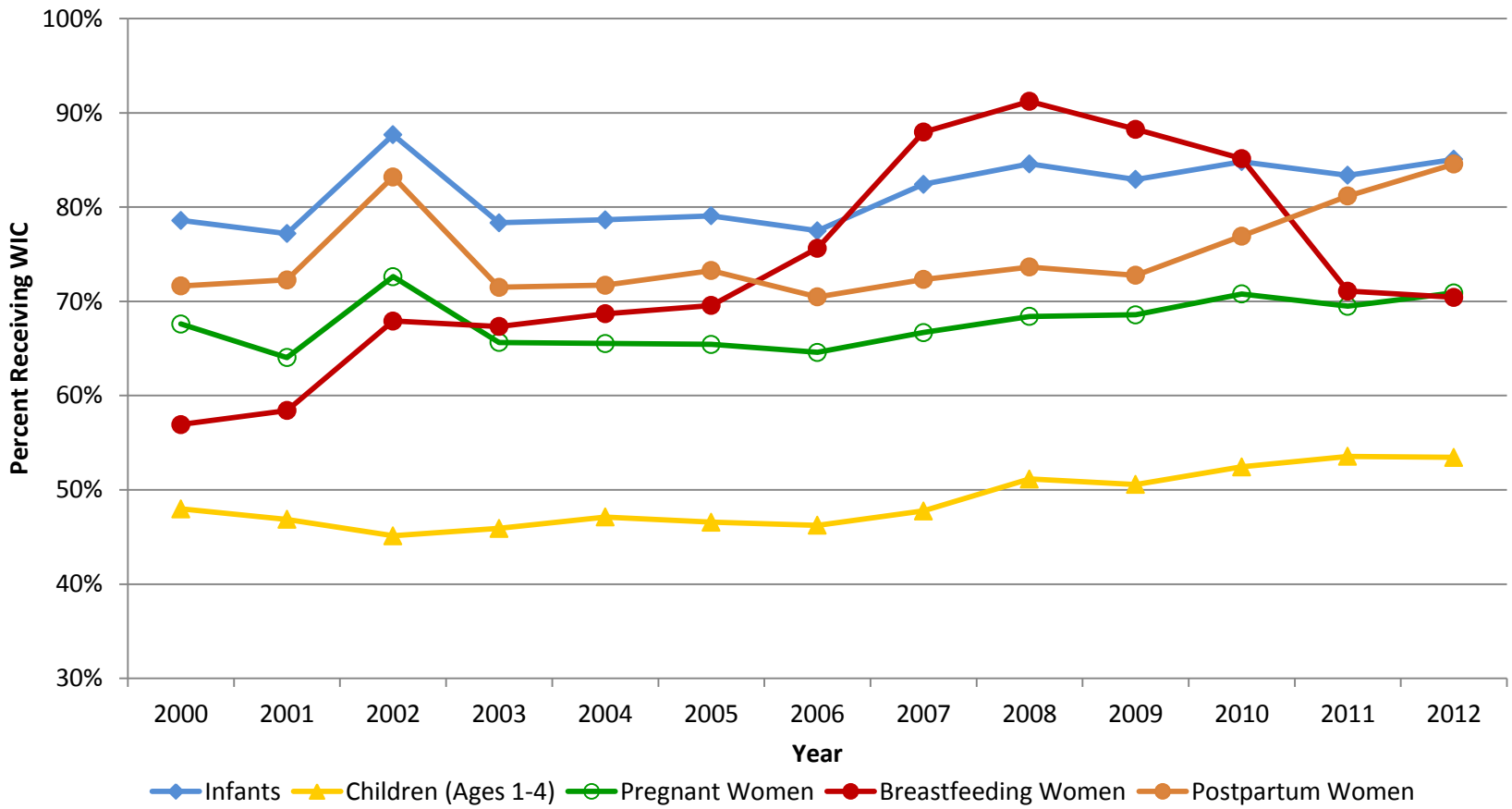
Estimated coverage rates by subpopulation fluctuate over the 2000 to 2012 time frame (Exhibit ES.4). The current estimated coverage rate of about 85 percent for infants is higher than the estimated rate for 2000 (just under 80 percent) but lower than the highest rate estimated for the period (88 percent in 2002). It 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 53 percent in 2012.

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 to the availability of the new census, a change that affects the WIC eligibility and coverage estimates for years 2010 and later;[3] the increase in the estimated coverage rates for infants and women in 2002 is also related to weighting changes.

[2] Data published by the Center for Disease Control, National Vital Statistics Reports, Volume 50, Number 5,Table 10, February 12, 2002 and Volume 62 Number 9, Table 5, December 30, 2013.

[3] For details see Martinez-Schiferl et al. (2012), and Johnson et al. (2014).

Exhibit ES.4: Coverage Rate: Percent of Eligible Population Receiving WIC Benefits, CY 2000 to CY 2012



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 and 2012 estimates are also affected by an update to an adjustment factor and changes in weight adjustment procedures.

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

WIC coverage rates for all participants vary somewhat across the regions (Exhibit ES.5). The highest coverage rate is 74.2 percent in the Western region, and the lowest is 53.8 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 the years 2009 to 2011.[4] 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 1.220 million people, we can say with 90 percent confidence that the actual number of eligible people is in the range from 1.156 to 1.283 million. Thus, the actual coverage rates could be somewhat higher or lower than shown.

Exhibit ES.5: WIC Eligibles and Coverage Rates by FNS Region, CY 2012

NOTE: This table includes estimates for the territories

				Confidence Interval for Eligibility Estimate[a]	
FNS Region	**Eligibles**	**Participants**	**Coverage Rate**	Lower bound	Upper bound
Northeast	1,219,580	783,792	64.3%	1,156,325	1,282,835
Mid-Atlantic	1,588,855	1,010,364	63.6%	1,500,228	1,677,482
Southeast	2,966,650	1,721,595	58.0%	2,848,149	3,085,151
Midwest	2,099,738	1,222,703	58.2%	2,007,948	2,191,528
Southwest	2,202,458	1,390,197	63.1%	2,107,455	2,297,462
Mountain Plains	1,056,789	568,340	53.8%	999,135	1,114,444
Western	2,919,291	2,165,332	74.2%	2,802,952	3,035,630
Total	**14,053,362**	**8,862,323**	**63.1%**	**13,617,886**	**14,488,839**

Source: 2013 CPS-ASEC, 2012 ACS, 2012 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 2012, 14.1 million individuals were estimated to be eligible for WIC benefits. The eligibility estimate is 1.6 percent lower than it was for 2011, due to a decrease in the total population of infants and young children, as well as a drop among infants in the portion meeting program eligibility requirements. The program covered 63.1 percent of the WIC-eligible individuals—approximately 8.9 million people. Infants and non-breastfeeding postpartum women had the highest coverage rates at 85.1 and 84.6 percent, respectively. The coverage rate for children ages 1 through 4 was 53.4 percent. Coverage rates also varied by region. The estimated regional coverage rates ranged from a high of 74.2 percent in the Western region to a low of 53.8 percent for the Mountain Plains.

[4] For 2009 regional coverage rates see Betson et al. (2011). For 2010 regional coverage rates see Martinez-Schiferl et al. (2012). For 2011 regional coverage rates see Johnson et al. (2014).

Introduction

This report provides estimates of WIC eligibility for calendar year (CY) 2012. 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 WIC participant subcategory— 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).[5] 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 et al. (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. Additional modifications were made to the methodology for adjusting population weights for the 2011 report (see Johnson et al., 2014), and have been continued in this report.

This report begins by reviewing the specific methods and assumptions used to develop the estimates. Then estimates of the total WIC-eligible population in 2012 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 process is followed by a discussion of the steps used to produce the territorial estimates. The 2012 WIC eligible population then is compared with the 2011 results. The next section presents State and regional level eligibility results, and the section following presents the coverage rates

[5] See Ver Ploeg and Betson (2003) for the CNSTAT report.

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 2012, 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 2012 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 2012.[6]

Overview of Methods for Estimates for 2012

The national, territorial, and State estimates of WIC eligibility are developed through separate but interrelated procedures, discussed below.

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 later in this section.

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).[7] 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.[8] We use the CPS-ASEC data collected in spring 2013 to estimate WIC eligibility during calendar year 2012.

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

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

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

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

Table 1: Steps and Sources for 2012 Estimates of WIC Eligibility of Infants and Young Children (Ages 1-4), Using Data from the 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, and Census Bureau International Data Base

Step	Description	Sources for 2012 Updates to Estimates and Adjustment Factors
Demographic eligibility	Identify infants and children (ages 1-4) in the survey.	2013 CPS-ASEC - National Estimates 2012 ACS - State Estimates 2012 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: Postcensal population estimates from the Census Bureau and the March CPS-ASEC for 2010, 2011, 2012, and 2013 State and Puerto Rico Estimates: Postcensal population estimates from the Census Bureau for CY 2012
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.	2013 CPS-ASEC - National Estimates 2012 ACS - State Estimates 2012 PRCS - Puerto Rico Estimates 2010 Census - Other Island Territories Estimates
Adjunctive eligibility	Add in as eligible those infants/children whose household reports food stamps, 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 the narrowly defined family with subfamilies separate.	2013 CPS-ASEC 2012 ACS 2012 PRCS
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 2012 - Puerto Rico Census Bureau International Data Base - Other Island Territories

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 adjustment factors are computed by comparing four years of Census Bureau population estimates and four years of CPS-ASEC weighted counts for each subgroup. A four-year period is used in order to minimize large year-to-year swings in the factors. Specifically, for the CY 2012 WIC eligibility estimates, the population adjustment factors are computed using Census Bureau population data for 2010, 2011, 2012, and 2013, and CPS-ASEC data collected in those same four years.[9] The Census population estimates used in the adjustment factors are vintage 2012 postcensal estimates for all four years.[10] Table 2 shows the resulting adjustment factors. No adjustment was performed for white infants and children (i.e. the factor was computed to be "1"). However, among black and "other" infants and children, some subgroups were adjusted upwards (the computed factor was greater than "1") and some downwards (the factor was less than "1"). The adjustments range from a 10.4 percent reduction in weights (for black females age 1) to a 5.5 percent increase (for females of other races age 2 and for males of other races age 1).[11] (Note that for purposes of defining racial subgroups for the population adjustment factors, the "white" and "black" groups include only infants and children for whom a single race was reported. Infants and children for whom more than one race was reported and those 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 specific race.[12]

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 (2012) 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

[9] See Johnson et al. (2014) for more details on the weight adjustment procedures, including a refinement that was added as part of the 2011 update and retained for the 2012 update.

[10] Since the vintage 2012 postcensal estimates are only available beginning with April 2010, estimates for March of 2010 were imputed in order to maintain consistency with the timing of the CPS-ASEC (primarily conducted in March) and with prior methodology. Linear interpolation between the postcensal estimates for April 2010 and March 2011 was used to impute population estimates for March 2010.

[11] See Ver Ploeg and Betson (2003) for a discussion of the CPS undercount of infants.

[12] See OMB (1997).

this step are an average of the guidelines released in 2011 (which would have been used by WIC programs for the first half of calendar year 2012), and the guidelines released in 2012 (which would have been used by WIC programs in the second half of calendar year 2012).

Individuals also are considered eligible for WIC through adjunctive eligibility. An individual is adjunctively income eligible for WIC 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.[13,14, 15] Thus, the next step is to count the infants 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: Population Adjustment Factors

	Weight Adjustment Factors:					
	Females			Males		
	White	Black	Other	White	Black	Other
Infants	1.000	1.044	1.043	1.000	1.000	1.000
Children (age 1)	1.000	0.896	0.971	1.000	0.902	1.055
Children (age 2)	1.000	1.034	1.055	1.000	1.000	1.002
Children (age 3)	1.000	1.000	1.000	1.000	0.962	1.000
Children (age 4)	1.000	0.988	1.001	1.000	1.000	1.047

Notes:
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.

[13] Participation in one of these programs is taken as proof that a person is income eligible for WIC.

[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 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. These data do not indicate whether each person receives SNAP, only if the household receives SNAP and the total number of SNAP recipients. However, in the absence of more information, we treat all infants and children in SNAP-recipient households as if they are themselves in the SNAP assistance unit. See Table 1 for additional information on how adjunctive eligibility is operationalized 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 are generally certified for only 6 months. 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, if the family income had risen by the point they returned for recertification.

The annual-to-monthly adjustment factor is computed using the Survey of Income and Program Participation (SIPP);[17] 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.[18] For the 2012 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; however, for young children the impacts of the six-month certification period, the cross-year variation in income, and the cross-year variation in program participation are offsetting.

Note that the current annual-to-month adjustment factor for young children does not take into account the potential impact of a recent policy change — the fact that states now have the option to certify young children for 12 months instead of 6 months. The option was enacted as part of the Healthy, Hunger-Free Kids Act of 2010, PL 111-296, passed in December 2010. According to WIC State Plans, at least eight states had implemented 12-month certification for young children by the middle of 2012. (Since 12-month certification is not

[17] More information on the SIPP can be found at the Census Bureau website: http://www.census.gov/sipp/
[18] The details of these procedures are summarized in Betson et al. (2011).

applied retroactively, the change in policy does not affect eligibility until 6 months following implementation.) Thus, our WIC eligibility estimates for young children may be slightly understated. Analysis conducted in the previous year of this contract suggested that young children's eligibility would be four percent higher if 12-month certification was fully phased in in all states.[19] However, since only a minority of states had adopted the policy in time to affect 2012 eligibility—and in most of those, the policy was not yet fully phased in—the estimates for young children's eligibility are likely understated by a very small amount due to the use of the 1.0 annual-to-monthly factor.

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 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 2012.

[19] Under the assumption that the 12 month certification period for children is fully phased in in all states, the annual-to-monthly adjustment factor is calculated as 1.04. For details, see Appendix E in Johnson et al. (2014).

Table 3: Steps and Sources for 2012 Estimates of WIC Eligibility of Pregnant and Postpartum Women, Using Data from the 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, and Census Bureau International Data Base

Step	Description	Sources for 2012 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.	2012 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.

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 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 2012, for example, the IFS data showed 61 percent of WIC mothers breastfeeding in the hospital, and 31 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. Analysis of the 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.

[20] See Yelowitz (2002)

[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.

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 lower also. 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).

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 2012 and applying the same methods used for the U.S. population.[23] Since Puerto Rico accounts for 89 percent of WIC-eligible persons 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 all the territories based on decennial Census data. However, it should be noted that the 2012 PRCS captures a combination of 2011 and 2012 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 of infants and children eligible for WIC in the other territories (American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, and the Virgin Islands), are based on two adjustments to Census's population estimates for those territories. The first adjustment uses a special tabulation of the 2010 decennial Census to estimate the portion of the population that is income eligible. The second adjustment uses the relationship between adjunctive eligibility and income eligibility in Puerto Rico and the mainland in 2012 to estimate the number of additional infants and children in the other island territories made eligible through adjunctive eligibility.

[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/.

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 2012.[24] Like the 2012 PRCS, the 2012 ACS captures a combination of 2011 and 2012 income. This is not ideal for estimation of 2012 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 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 Integrated Public Use Microdata Series (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

[24] ACS documentation is available on the Census Bureau website, http://www.census.gov/acs/www/about_the_survey/american_community_survey/.
[25] See Ruggles et al. (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.

breastfeeding. For the other adjustments—addressing annual-to-monthly income differences and nutritional risk—the national factors were used in each State.[27]

The ACS population weights are adjusted by state and by exact age, 0 through 4. Specifically, the ACS person weights for infants and children are proportionally adjusted so that the sums of the persons by age are equal to the Census Bureau population estimates for each State. This method differs somewhat from the method used for the CPS-ASEC in that the ACS method only considers the Census and ACS population estimates for the current year, not for the prior three years as well. Also, the ACS weight adjustments do not vary by racial group, since the Census Bureau does not release population estimates for racial subgroups by single year of age at the state level.

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 rates.[28] Using information gathered through its Infant Feeding Survey, Abbott Laboratories publishes both in-hospital and at-six-month breastfeeding rates for women participating in WIC by State (see Table B7 in Appendix B).

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.

[27] Note that (as mentioned in the discussion of annual-to-monthly adjustment of the national estimates) if a State began implementing 12-month certification for children during 2012, the use of the national annual-to-monthly factor could slightly underestimate eligibility in that state.

[28] For example, in 2012 the in-hospital breastfeeding rate for all infants (not just infants enrolled in WIC) ranged from 44 percent in Mississippi to 88 percent in Montana according to the IFS.

[29] Respondents provide their income over the 12 months preceding the month they are surveyed; households surveyed in January 2012 thus provided their 2011 income, households surveyed in July 2012 provided their income from July 2011 through June 2012, and so on.

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 (by summing the states within each FNS Region) 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: 2012

This section presents the 2012 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 2012 are compared with 2011 eligibility estimates.

Table 4 shows that 14.053 million individuals are estimated to have been eligible for WIC in the average month of CY 2012 across the fifty States, the District of Columbia, Puerto Rico, and the four other island territories.[30] Of course, this is an estimate and could differ from the true number of eligibles 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 13.6 million to 14.5 million.[31]

The overall estimate includes 2.421 million infants (61 percent of all infants in the United States and territories) and 8.824 million children age 1 through 4 (55 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, 1.245 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 is also derived from the number of eligible infants and the estimates of breastfeeding rates calculated as summarized in Table 3 above. There were an estimated 0.840 million women eligible as breastfeeding mothers in the average

[30] Table 4 provides unrounded eligibility estimates for consistency with Table 5, which shows the precise impact of each adjustment.
[31] See Table 16 for the statistical information that underlies the computation of this confidence interval.

month of CY 2012, and an estimated 0.724 million eligible non-breastfeeding postpartum women.

Table 4: Estimates of the Total Average Monthly Number of Individuals Eligible for WIC by Participant Group, CY 2012

NOTE: This table includes estimates for the territories

	2012		
Participant Group	**Eligibles**	**Non-Eligibles[a]**	**Total[b]**
Infants	2,420,597	1,521,068	3,941,665
Total Children Ages 1-4	8,823,888	7,359,759	16,183,647
Children Age 1	2,185,171	1,824,689	4,009,860
Children Age 2	2,196,651	1,848,811	4,045,462
Children Age 3	2,232,286	1,814,250	4,046,536
Children Age 4	2,209,780	1,872,010	4,081,789
Pregnant Women	1,245,423		
Postpartum Breastfeeding Women	839,736		
Postpartum Non-Breastfeeding Women	723,718		
All Postpartum Women	1,563,454		
Total WIC Eligibles	**14,053,362**		

Source: 2013 CPS-ASEC for U.S. estimate, 2012 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 2013 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 2012 PRCS and annual Census Bureau population estimates.

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 2013 CPS-ASEC (reflecting income in CY 2012) to compensate for the difference between CPS-ASEC weighted population counts and Census Bureau population counts. The total number of infants is adjusted upward from 3.873 to 3.895 million (0.6 percent) while the total number of children is adjusted downward from 16.044 million to 15.990 million (0.3 percent).[32] Overall, the population of infants and children ages 0 through 4, as measured in the CPS-ASEC data, is almost unchanged, decreasing by only 0.2 percent.

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 2012, the CPS-ASEC data (with adjusted weights) include 1.713 million infants and 6.992 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 (2.112 million compared with 1.713 million) and increases the estimate for young children by 25 percent (8.753 million compared with 6.992 million). Medicaid accounted for most of those adjunctively eligible for WIC in 2012 (0.294 million infants and 1.350 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]

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 six 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 three percent for infants and one percent for children as shown in Table 1. Total WIC eligibility in the U.S. (not including territories) in 2012 is estimated at 2.377 million for infants and 8.665 million for

[32] Note that because the weight adjustments use four years of data, the adjusted weighted figures do not exactly match Census Bureau population estimates for 2012.

[33] In 2012, 27.8 million non-disabled children (age 18 and under) were enrolled in Medicaid in June, 20.5 million children (under age 18) were enrolled in SNAP sometime during the fiscal year, and 3.3 million children (age 19 and under) received TANF benefits in the average month. Medicaid caseload data are from Kaiser (2014), SNAP caseload data are from Gray and Eslami (2014), 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 2013 CPS-ASEC	3,873,054	4,025,460	3,973,737	4,009,402	4,035,414	16,044,013				19,917,068
Number (non-U.S. Territory) after adjustment for CPS under/over count	3,894,846	3,963,309	3,996,781	3,997,484	4,032,677	15,990,251				19,885,097
Number with annual income <185% FPG	1,712,910	1,713,940	1,706,366	1,765,143	1,806,156	6,991,605				8,704,515
Number of additional people adjunctively eligible above 185% FPG[a]	399,522	454,103	472,801	449,068	385,338	1,761,310				2,160,833
Through SNAP	94,557	110,286	98,669	99,734	74,882	383,571				478,128
Through TANF	11,215	3,082	9,084	6,787	8,630	27,583				38,798
Through Medicaid	293,750	340,735	365,049	342,547	301,826	1,350,157				1,643,907
Total number income and adjunctively eligible	2,112,432	2,168,043	2,179,167	2,214,211	2,191,494	8,752,915				10,865,348
Number after monthly income adjustment	2,450,422	2,168,043	2,179,167	2,214,211	2,191,494	8,752,915				11,203,337
Total Eligibles - Number after adjustment for nutritional risk (infants and children)	2,376,909	2,146,363	2,157,376	2,192,069	2,169,579	8,665,386				11,042,295
Starting point for estimates of women is fully eligible infants							2,376,909	2,376,909	2,376,909	7,130,727
Number after adjustment for length of pregnancy and income of woman during pregnancy							1,265,704			1,265,704
Number after adjustment for multiple births and infant deaths							1,260,768	2,367,639	2,367,639	5,996,046
Number after adjustment for breastfeeding								824,580	710,656	1,535,237
Total Eligibles - Number after adjustment for nutritional risk (pregnant and postpartum women)							1,222,945	824,580	710,656	2,758,181

CY 2012 - 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	43,688	38,808	39,276	40,217	40,201	158,502	22,478	15,156	13,062	252,886

Source: 2012 PRCS and Census International Data Base

Total Eligibles - States and Territories U.S. Total	**2,420,597**	**2,185,171**	**2,196,651**	**2,232,286**	**2,209,780**	**8,823,888**	**1,245,423**	**839,736**	**723,718**	**14,053,362**

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.

children; with the territories included, 2.421 million infants and 8.824 million children are estimated to be eligible for WIC.

The estimates for pregnant women begin from the final estimate of 2.377 million WIC-eligible infants in the U.S. in the average month of CY 2012. 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 1.223 million women eligible for WIC during pregnancy in the U.S. (excluding the territories) during the average month of CY 2012.

The estimates for postpartum women—breastfeeding and non-breastfeeding—also begin from the estimate of 2.377 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 2012 is 0.825 million, and the estimate of postpartum non-breastfeeding women is 0.711 million. (These figures exclude the territories.)

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 2012 (Table 6). Focusing first on basic demographics, the WIC-eligible infants and children are almost evenly divided between boys (51 percent) and girls (49 percent), and are predominantly white (66 percent of infants and 67 percent of children), with most of the remainder being black (21 percent of infants and 20 percent of children); other WIC-eligible children report another race or multiple races. Small sample size prevents the "other" category from being subdivided. Thirty-six percent of the WIC-eligible infants and children are Hispanic (39 percent of infants and 36 percent of children).

Turning to the family characteristics of the eligible infants and children, most live in two-parent families (62 percent of infants and 55 percent of children). Most of the remainder live in single-parent families (34 percent of infants and 39 percent of children), and a small portion live with a non-parent caretaker (5 percent overall). Large households are relatively common, with one quarter of WIC-eligible infants and children living 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

Table 6: Estimates of the Average Monthly Percent of Infants and Children (Ages 1-4) Eligible for WIC by Income and Adjunctive Eligibility in the 2013 CPS-ASEC by Demographic Characteristics, CY 2012

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	1,960,597	457,294	2,417,891	6,990,906	1,761,135	8,752,041	8,951,502	2,218,429	11,169,932
Gender									
Male	49.0	56.7	50.4	50.6	51.5	50.7	50.2	52.6	50.7
Female	51.0	43.3	49.6	49.4	48.5	49.3	49.8	47.4	49.3
Race									
White	64.7	71.0	65.9	65.1	72.8	66.6	65.0	72.4	66.5
Black	20.8	20.2	20.7	21.6	14.9	20.2	21.4	16.0	20.3
Other	14.5	8.8	13.4	13.3	12.3	13.1	13.6	11.6	13.2
Ethnicity									
Hispanic	40.3	34.3	39.2	37.2	29.6	35.7	37.9	30.5	36.4
Non-Hispanic	59.7	65.7	60.8	62.8	70.4	64.3	62.1	69.5	63.6
Living arrangement									
Two-parent family	61.2	66.3	62.2	52.8	65.4	55.3	54.6	65.6	56.8
Single-parent family	35.0	29.8	34.0	42.0	29.0	39.4	40.5	29.2	38.2
No-parent family	3.8	3.9	3.8	5.2	5.6	5.3	4.9	5.3	4.9
Related non-parent caretaker	2.1	3.9	2.4	3.1	5.6	3.6	2.9	5.3	3.3
Unrelated non-parent caretaker	1.7	0.0	1.4	2.1	0.0	1.6	2.0	0.0	1.6
Household size (number of persons)									
2	4.9	0.6	4.1	6.0	3.6	5.6	5.8	3.0	5.2
3	22.5	25.8	23.1	20.0	19.7	19.9	20.5	21.0	20.6
4	25.3	30.2	26.3	27.5	31.8	28.4	27.0	31.4	27.9
5	22.0	21.2	21.8	21.5	22.7	21.8	21.6	22.4	21.8
6 or more	25.3	22.2	24.7	24.9	22.2	24.4	25.0	22.2	24.5
Number with working parent(s)	60.7	79.2	64.2	65.7	85.4	69.7	64.6	84.2	68.5
Annual family income relative to poverty[b]									
Less than 50% FPL	30.5	0.0	24.8	29.3	0.0	23.4	29.6	0.0	23.7
50% to <100% FPL	28.5	0.0	23.1	29.3	0.0	23.4	29.1	0.0	23.3
100% to <130% FPL	17.1	0.0	13.9	16.6	0.0	13.3	16.7	0.0	13.4
130% to <185% FPL	23.6	4.9	20.1	24.4	5.5	20.6	24.2	5.4	20.5
185% to <200% FPL	0.2	9.4	1.9	0.3	12.2	2.7	0.3	11.6	2.5
200% to <250% FPL	0.0	27.2	5.2	0.1	29.3	6.0	0.1	28.9	5.8
250% FPL and above	0.0	58.4	11.1	0.0	53.1	10.7	0.0	54.2	10.8
Benefit receipt									
No benefit receipt	23.3	0.0	18.9	23.2	0.0	18.5	23.2	0.0	18.6
SNAP, TANF, & Medicaid	6.2	2.8	5.5	7.8	1.4	6.5	7.5	1.7	6.3
SNAP & TANF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SNAP & Medicaid	39.0	16.4	34.7	38.2	16.6	33.9	38.4	16.5	34.0
TANF & Medicaid	0.3	2.8	0.7	0.5	1.4	0.7	0.5	1.7	0.7
SNAP only	6.3	4.5	5.9	5.9	3.8	5.4	5.9	3.9	5.5
TANF only	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.1	0.0
Medicaid only	25.0	73.5	34.2	24.4	76.7	34.9	24.5	76.0	34.7

Source: 2013 CPS-ASEC

Notes:

FPG - Federal Poverty Guidelines

FPL - Federal Poverty Level

[a] These estimates are tabulated from the fully adjusted person weights on the 2013 CPS-ASEC. They are adjusted to account for the under or over count of infants and children in the CPS relative to Census estimates, monthly income, and nutritional risk. See Appendix TablesA.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.

percent of both infants and 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 (66 percent of adjunctively-eligible infants and children compared with 55 percent of those who are income-eligible) and more likely to have working parents (84 percent vs. 65 percent).

The families of adjunctively-eligible infants and children also tend to have higher incomes. Among those only eligible through adjunctive eligibility rules, just over half (54 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 2012 PRCS and adjusted the number for the 2012 Census under/over count (Table 7). Using the adjusted population counts, 78 percent of infants (31,813) as well as 81 percent of children (136,480) 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. Factoring in adjunctive eligibility increased these eligibility estimates by seven percent for infants (2,279) and by four percent for children (5,389). 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 2012 PRCS to take into account the impact of certification periods and changes during a year in income and program

[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).

[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 (1.3 percent in 2012 according to USDA, 2012, p 43).

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 38,360 infants (94 percent of the total adjusted infant population) and 140,450 children age 1 to 4 (83 percent of the total adjusted population). Note that these eligibility rates are considerably higher than those of the mainland U.S. (61 percent for infants and 54 percent for children).

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 for single year of age (from the Census Bureau's International Database) and the percent of infants and children who are income eligible (from the 2010 decennial Census data). Our methods therefore use the 2012 population estimates, but assume that the percentage of the population that is income eligible for WIC is the same as in the 2010 decennial Census (67.4 percent). While this percentage represents the most recently available evidence on income eligibility in the other island territories, it does not account for adjunctive eligibility. 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 2012. That information implies roughly an increase of 13 percent in the number of WIC-eligible infants, and an increase of 11 percent in the number of WIC-eligible children, due to adjunctive eligibility. These procedures result in an estimate of 76 percent of infants and 75 percent of 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 5,328 (86 percent of total infants), and the average monthly number of eligible children is 18,052 (74 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 (43,688, including Puerto Rico and the other island territories). After adjustments for length of pregnancy, income during pregnancy, and multiple births, we estimate that in 2012 across the territories there were 22,478 WIC-eligible pregnant women, 15,156 WIC-eligible postpartum breastfeeding women, and 13,062 WIC-eligible non-breastfeeding women (Table 7).

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 2012

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 2012 PRCS	37,334	39,042	42,997	44,444	45,542	172,025				209,359
Number after adjustment for PRCS under/over count	40,612	40,386	42,567	42,961	43,071	168,985				209,597
Number with annual income <185% FPG	31,813	32,271	34,105	35,096	35,008	136,480				168,292
Number of additional people adjunctively eligible above 185% FPG[a]	2,279	2,324	1,000	978	1,087	5,389				7,668
Through SNAP	1,061	1,520	141	426	544	2,630				3,691
Through TANF	0	0	0	0	0	0				0
Through Medicaid	1,218	805	859	552	543	2,759				3,977
Total number income and adjunctively eligible	34,092	34,595	35,105	36,074	36,094	141,869				175,960
Number after monthly income adjustment	39,546	34,595	35,105	36,074	36,094	141,869				181,415
Total Eligibles - Number after adjustment for nutritional risk (infants and children)	38,360	34,249	34,754	35,713	35,733	140,450				178,810
Starting point for estimates of women is fully eligible infants							38,360	38,360	38,360	115,080
Number after adjustment for length of pregnancy and income of woman during pregnancy							20,427			20,427
Number after adjustment for multiple births and infant deaths							20,347	38,210	38,210	96,768
Number after adjustment for breastfeeding								13,308	11,469	24,777
Total Eligibles - Number after adjustment for nutritional risk (pregnant and postpartum women)							19,737	13,308	11,469	44,513

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	6,207	6,165	6,114	6,091	6,041	24,411				30,618
Number after the other islands full-eligibility factor	4,735	4,605	4,567	4,550	4,513	18,235				22,970
Number after monthly income adjustment	5,493	4,605	4,567	4,550	4,513	18,235				23,727
Total Eligibles - Number after adjustment for nutritional risk (infants and children)	5,328	4,559	4,521	4,504	4,467	18,052				23,380
Starting point for estimates of women is fully eligible infants							5,328	5,328	5,328	15,984
Number after adjustment for length of pregnancy and income of woman during pregnancy							2,837			2,837
Number after adjustment for multiple births and infant deaths							2,826	5,307	5,307	13,440
Number after adjustment for breastfeeding								1,848	1,593	3,441
Total Eligibles - Number after adjustment for nutritional risk (pregnant and postpartum women)							2,741	1,848	1,593	6,183
Total Eligibles - U.S. Territories Total	**43,688**	**38,808**	**39,276**	**40,217**	**40,201**	**158,502**	**22,478**	**15,156**	**13,062**	**252,886**

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 2012 to 2011

Overall, the number of people estimated as eligible for WIC in 2012 is 1.6 percent lower than the number estimated as eligible in 2011 (Table 8). The differences from the 2011 estimates vary by type of individual—infants, young children, pregnant women, and postpartum women – but all of these major groups show decreases.

Changes in the size of the eligible population are a result of two other changes – the change in total population size and the change in eligibility rate (i.e. the percentage of that population estimated to be eligible). From 2011 to 2012 the total population of infants as defined by these procedures decreased by 1.8 percent and the population of young children by 1.1 percent, while the eligibility rate among infants decreased by 2.1 percent but increased slightly among young children by 0.4 percent.[37] Note that Table 8 displays *percentage* changes rather than *percentage point* changes to aid in decomposing the changes in the eligibility estimates. For each subgroup, the change in total eligibles is equal to the starting-point number of eligibles (in 2011), increased (or decreased) by the percentage change in total population, and increased (or decreased) again by the percentage change in the eligibility rate. For example, for children age two, the 1.9 percent increase in eligibility from 2011 to 2012 is due to a one percent increase in population and 0.9 percent increase in the eligibility rate; mathematically, the 2011 eligibility figure times 1.01 times 1.009 equals the 2012 eligibility figure. Thus, for each change in eligibility, the relative contributions of the population change and the eligibility rate change can be easily observed.

The change in the eligibility rate is also likely due to a combination of factors, including changing economic conditions (for example, the unemployment rate fell slightly from 8.9 percent in 2011 to 8.1 percent in 2012[38]) and changes in the extent to which families are receiving benefits from the programs that confer adjunctive eligibility (for example, the average SNAP caseload increased from 44.7 million households in 2011 to 46.6 million in 2012).[39]

Combining the changes in population and the change in the eligibility rate, the 2012 estimate for WIC-eligible infants is 3.8 percent lower than the 2011 estimate, and the 2012 estimate for WIC-eligible children is 0.7 percent lower than the 2011 estimate. The decrease in the estimate for pregnant women (3.8 percent) follows the decrease among infants since this estimate begins with the number of eligible infants. The eligibility estimate for postpartum women decreased one percent. However, note that from a statistical standpoint, we cannot

[37] The Census Bureau's most recent postcensal population estimates for March 2013 vs. March 2012 show somewhat smaller declines in these populations — 0.01 percent in the infant population and 0.8 percent in the population of young children. These percentages differ from those used in this analysis since the population estimates used for this analysis are not tied solely to the annual Census population estimates.

[38] See the Bureau of Labor Statistics website, http://data.bls.gov, series ID LNU04000000.

[39] See the Food and Nutrition Service website, http://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap, "Participation and Costs, 1969-2013."

rule out the possibility that these changes are all due solely to sampling variability in the CPS-ASEC survey data.[40]

While all four major groups showed a decrease in eligibility, within two of these groups (children and postpartum women), some subgroups actually showed an increase. Among children, those aged 2 and 3 each increased by about two percent. This was due to a combination of increases in the total population of 2-3 year olds, as well as an increase in their eligibility rate. Among postpartum women, the number of eligible breastfeeding women increased by 3.5 percent. This increase is due to an increase in breastfeeding rates from 2011 to 2012 according to the data used for this analysis. Figure 1 shows breastfeeding rates from 2000 to 2012. For WIC mothers, the IFS survey shows an increase in the in-hospital breastfeeding rate from 59 percent in 2011 to 61 percent in 2012, and an increase in the rate at six months from 27 percent to 31 percent. Since these 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 have 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. [41]

[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.

[41] 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 2011 to 2012, the IFS 2012 rate of 41.3 percent for all mothers breastfeeding at six months is still substantially below the six-month breastfeeding rate of 47.8 percent for 2009 from the National Immunization Survey (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). Also, the National Immunization Survey shows a different trend; for example, for all mothers, there are no year-to-year declines in the six-month rate over the period from 2000 to their (provisional) 2010 data.

Table 8: Estimates of the Total Average Monthly Number of Individuals Eligible for WIC by Participant Group: A Comparison of CY 2011 and 2012

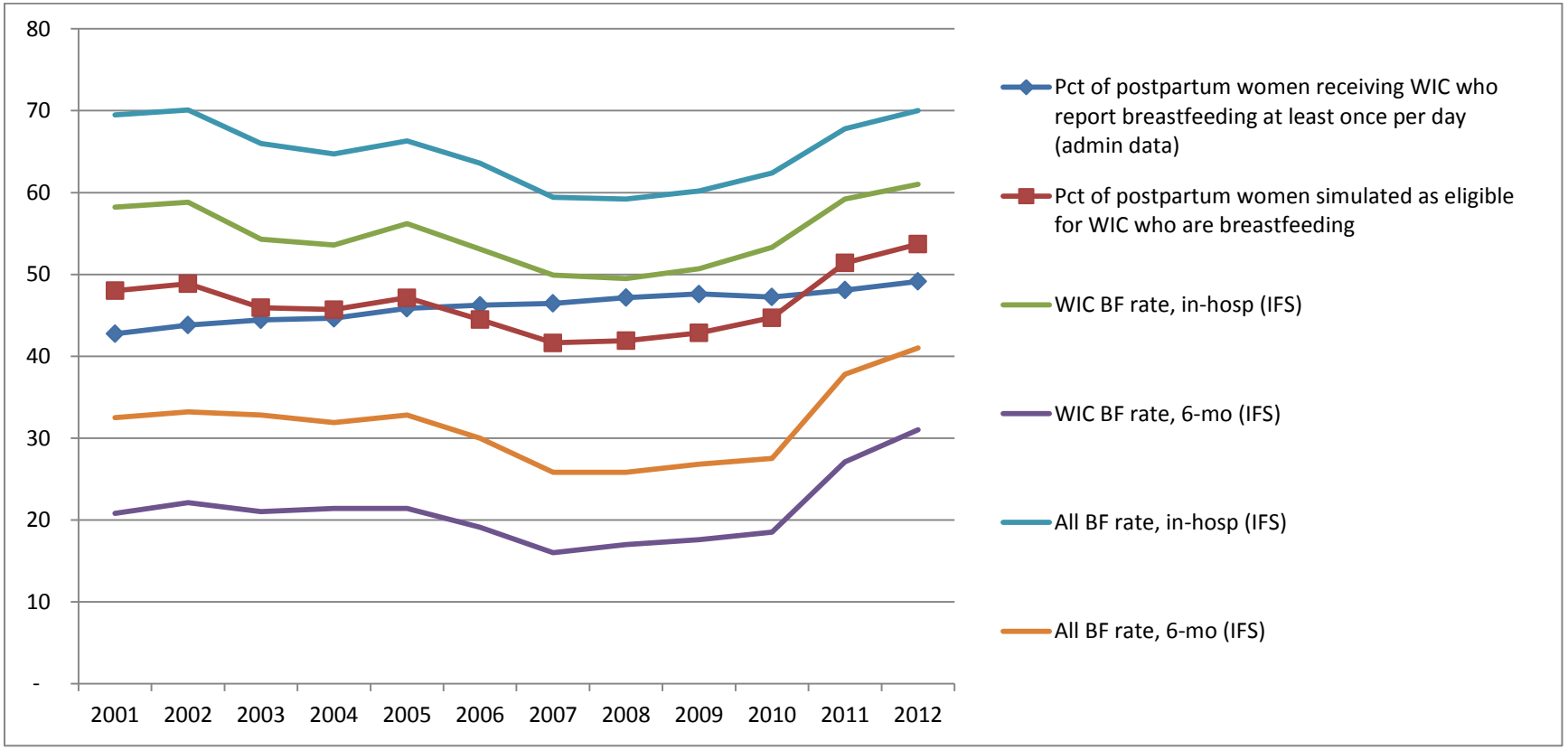
NOTE: This table includes estimates for the territories.

	Total		Percent	Total Eligibles		Percent	Eligibility Rate		Percent	Coverage Rate		Percent
Participant Group	2012	2011	Change	2012	2011	Change	2012	2011	Change	2012	2011	Change
Infants	3,941,665	4,012,975	-1.8%	2,420,597	2,516,309	-3.8%	61.4	62.7	-2.1%	85.1	83.4	2.0%
Total Children Ages 1-4	16,183,647	16,365,464	-1.1%	8,823,888	8,888,005	-0.7%	54.5	54.3	0.4%	53.4	53.6	-0.2%
Children Age 1	4,009,860	4,120,473	-2.7%	2,185,171	2,325,258	-6.0%	54.5	56.4	-3.4%			
Children Age 2	4,045,462	4,005,439	1.0%	2,196,651	2,154,671	1.9%	54.3	53.8	0.9%			
Children Age 3	4,046,536	4,046,978	0.0%	2,232,286	2,180,779	2.4%	55.2	53.9	2.4%			
Children Age 4	4,081,789	4,192,574	-2.6%	2,209,780	2,227,296	-0.8%	54.1	53.1	1.9%			
Pregnant Women				1,245,423	1,294,668	-3.8%				70.9	69.5	2.0%
All Postpartum Women				1,563,454	1,578,471	-1.0%				77.0	76.0	1.3%
Breastfeeding Women				839,736	811,356	3.5%				70.4	71.1	-0.9%
Non-Breastfeeding Women				723,718	767,116	-5.7%				84.6	81.2	4.2%
Total WIC Eligibles				**14,053,362**	**14,277,453**	**-1.6%**				**63.1**	**62.7**	**0.5%**

Source: March 2013 and March 2012 CPS; 2004 and 2008 SIPP panels; 2001-2002, 2003-2004, 2005-2006 NHANES

Note: Changes in the number of eligibles between 2011 and 2012 are not statistically significant at the 90 percent confidence level -- all changes could be due solely to sampling variability in the survey.

Figure 1: Breastfeeding Rates Over Time



Regional and State Estimates of WIC Eligibility: 2012

As explained above, the large sample size of the ACS allows WIC eligibility to be estimated for each State and the District of Columbia. 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 women, infants and children who are estimated to meet program eligibility requirements. As mentioned above in the context of the national estimates, all the WIC eligibility estimates are affected by sampling variability.

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 (with 22 and 21 percent of all WIC eligibles, respectively), while the Northeast and Mountain Plains regions have the fewest WIC-eligible individuals (about nine percent and eight 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).[42]

Table 9: Distribution of WIC Eligibles by FNS Region for each Participant Group, CY 2012

	Infants	Children (age 1 to 4)	Pregnant Women	All Postpartum Women	Total
Distribution of Eligibles					
Northeast	8.5%	8.8%	8.5%	8.4%	8.7%
Mid-Atlantic	11.4%	11.3%	11.4%	11.1%	11.3%
Southeast	21.5%	21.1%	21.5%	20.4%	21.1%
Midwest	15.0%	14.9%	15.0%	15.2%	14.9%
Southwest	15.7%	15.7%	15.7%	15.3%	15.7%
Mountain Plains	7.4%	7.6%	7.4%	7.4%	7.5%
Western	20.6%	20.6%	20.6%	22.2%	20.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, Census International Data Base

[42] If a State had 12-month certification of young children in place in 2012, the use of the national-level "annual-to-monthly" factor (which assumes 6-month certification for all states) 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 2012

	Percent Share of National WIC Eligibles		Percent Share of National WIC Eligibles
State[a]			
Alabama	1.7%	New York	5.6%
Alaska	0.3%	North Carolina	3.3%
Arizona	2.3%	North Dakota	0.1%
Arkansas	1.1%	Ohio	3.4%
California	12.7%	Oklahoma	1.4%
Colorado	1.5%	Oregon	1.2%
Connecticut	0.8%	Pennsylvania	3.3%
Delaware	0.3%	Puerto Rico	1.6%
D.C.	0.2%	Rhode Island	0.2%
Florida	6.1%	South Carolina	1.6%
Georgia	3.7%	South Dakota	0.3%
Hawaii	0.4%	Tennessee	2.1%
Idaho	0.6%	Texas	10.5%
Illinois	3.8%	Utah	1.1%
Indiana	2.2%	Vermont	0.2%
Iowa	0.8%	Virginia	2.0%
Kansas	0.9%	Washington	2.1%
Kentucky	1.4%	West Virginia	0.5%
Louisiana	1.8%	Wisconsin	1.4%
Maine	0.3%	Wyoming	0.2%
Maryland	1.5%		
Massachusetts	1.3%	**FNS Region**[b]	
Michigan	2.9%	Northeast	8.7%
Minnesota	1.2%	Mid-Atlantic	11.3%
Mississippi	1.3%	Southeast	21.1%
Missouri	1.8%	Midwest	14.9%
Montana	0.3%	Southwest	15.7%
Nebraska	0.5%	Mountain Plains	7.5%
Nevada	1.0%	Western	20.8%
New Hampshire	0.3%		
New Jersey	2.1%	**Total**	100.0%
New Mexico	0.8%		

Source: 2013 CPS-ASEC, 2012 ACS, 2012 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 total WIC eligibles 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 the population of women, infants, and children who appear to meet other eligibility requirements – that is unrelated to the State or region's share of total population. As shown earlier, the national-level analysis suggests that 61.4 percent of infants and 54.5 percent of young children were eligible for WIC in the average month of 2012. However, at the regional level, the percentage of infants who appear eligible for WIC varies from 53.8 percent in the Northeast to 69.5 percent in the Southeast; and the percentage of children who appear eligible for WIC varies from 48.8 percent in the Mountain Plans to 60.9 percent in the Southwest (Table 11).

Table 11: WIC Eligibles by FNS Region and Participant Group, CY 2011 and CY 2012

	Infants	Children (age 1 to 4)	Pregnant Women	All Postpartum Women	Total
Eligiblility Rate, 2012					
Northeast	53.8%	50.1%	37.0%	34.6%	46.9%
Mid-Atlantic	55.8%	49.2%	38.5%	35.3%	47.0%
Southeast	69.5%	60.3%	47.8%	42.9%	57.7%
Midwest	58.8%	51.0%	40.5%	38.6%	49.2%
Southwest	67.7%	60.9%	46.7%	42.9%	57.7%
Mountain Plains	54.4%	48.8%	37.5%	35.1%	46.4%
Western	61.4%	55.2%	42.3%	43.0%	52.9%
Total	**61.4%**	**54.5%**	**42.3%**	**39.8%**	**52.1%**
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, 2012 vs 2011					
Northeast	-4.6%	4.2%	-4.6%	-7.0%	0.5%
Mid-Atlantic	1.9%	2.0%	1.9%	4.9%	2.3%
Southeast	0.6%	0.5%	0.6%	3.0%	0.8%
Midwest	-4.0%	-2.3%	-4.0%	3.6%	-2.1%
Southwest	-6.1%	0.4%	-6.1%	-1.1%	-1.5%
Mountain Plains	-1.7%	-0.8%	-1.7%	-1.1%	-1.1%
Western	-1.2%	0.3%	-1.2%	0.2%	-0.1%
Total	**-2.1%**	**0.4%**	**-2.1%**	**0.8%**	**-0.2%**

Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, Census International Data Base

WIC eligibility rates for infants and pregnant women appeared to decrease between 2011 and 2012 in most of the regions. However, the degree of change varied across the regions. For infants, while the national WIC eligibility rate decreased by 2.1 percent between 2011 and 2012, the regional changes ranged from a 1.9 percent increase in the Mid-Atlantic to a reduction of 6.1 percent in the Southwest. The regional pattern of change in the eligibility rates for pregnant women follows that for infants, although the eligibility rates themselves are smaller for pregnant women than for infants. The eligibility rates for children and postpartum women rose slightly, by 0.4 percent and 0.8 percent, respectively. At the regional level, the direction and magnitude of changes are more varied. For children, the eligibility rate decreased 2.3 percent in the Midwest while rising 4.2 percent in the Northeast. For postpartum women, the eligibility rate decreased 7.0 percent in the Northeast, while rising 4.9 percent in the Mid-Atlantic.

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 2012 is estimated at 63.1 percent overall (Table 12), with the highest rate for infants (85.1 percent of eligible infants appear to be enrolled in the program), and the lowest for children (53.4 percent). Among eligible women, postpartum women appear to have a higher coverage rate than pregnant women, with 77.0 percent of eligible postpartum women enrolled compared with 70.9 percent of eligible pregnant women.

The 2012 WIC coverage rate appears to vary somewhat by region (Table 12 and Figure 2). Considering all WIC-eligible individuals combined, the overall WIC coverage rate is lowest in the Mountain Plains region, at 53.8 percent and highest in the Western region, at 74.2 percent. 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 Mid-Atlantic and Southwest have overall coverage rates similar to the national rate, but in the Southwest the rate for postpartum women is about 10 percentage points higher than the national rate, while in the Mid-Atlantic the rate for pregnant women is 3.6 percentage points lower than 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.

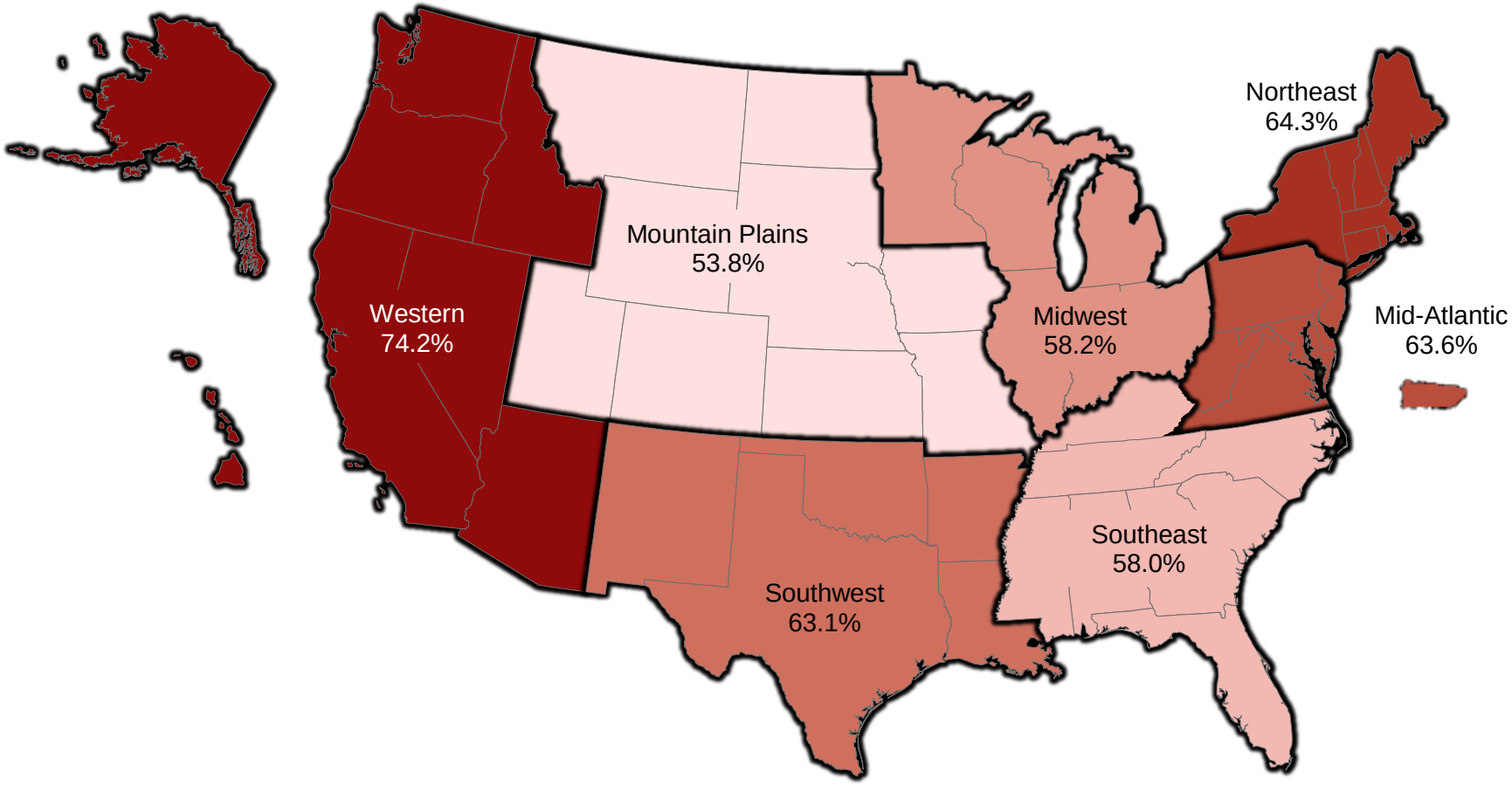
Table 12: WIC Eligibles and Coverage Rates by FNS Region and Participant Group, CY 2012

	Infants	Children (age 1 to 4)	Pregnant Women	All Post-Partum Women	Total
Eligibles					
Northeast	205,918	775,876	105,947	131,840	1,219,580
Mid-Atlantic	275,073	999,170	141,528	173,085	1,588,855
Southeast	519,758	1,859,806	267,421	319,665	2,966,650
Midwest	362,522	1,313,563	186,521	237,132	2,099,738
Southwest	378,826	1,389,709	194,910	239,014	2,202,458
Mountain Plains	179,622	669,362	92,417	115,389	1,056,789
Western	498,880	1,816,403	256,679	347,330	2,919,291
Total	**2,420,597**	**8,823,888**	**1,245,423**	**1,563,454**	**14,053,362**
Participants					
Northeast	178,578	422,634	75,232	107,348	783,792
Mid-Atlantic	236,565	543,228	95,311	135,261	1,010,364
Southeast	426,990	882,005	178,915	233,685	1,721,595
Midwest	303,583	634,740	129,532	154,849	1,222,703
Southwest	334,671	701,715	146,500	207,312	1,390,197
Mountain Plains	135,975	297,390	55,777	79,197	568,340
Western	443,074	1,234,632	201,787	285,838	2,165,332
Total	**2,059,436**	**4,716,344**	**883,053**	**1,203,489**	**8,862,323**
Coverage Rates					
Northeast	86.7%	54.5%	71.0%	81.4%	64.3%
Mid-Atlantic	86.0%	54.4%	67.3%	78.1%	63.6%
Southeast	82.2%	47.4%	66.9%	73.1%	58.0%
Midwest	83.7%	48.3%	69.4%	65.3%	58.2%
Southwest	88.3%	50.5%	75.2%	86.7%	63.1%
Mountain Plains	75.7%	44.4%	60.4%	68.6%	53.8%
Western	88.8%	68.0%	78.6%	82.3%	74.2%
Total	**85.1%**	**53.4%**	**70.9%**	**77.0%**	**63.1%**

Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, Census International Data Base, WIC Administrative Data

Figure 2: WIC Coverage Rate for All Participants by FNS Region, CY 2012

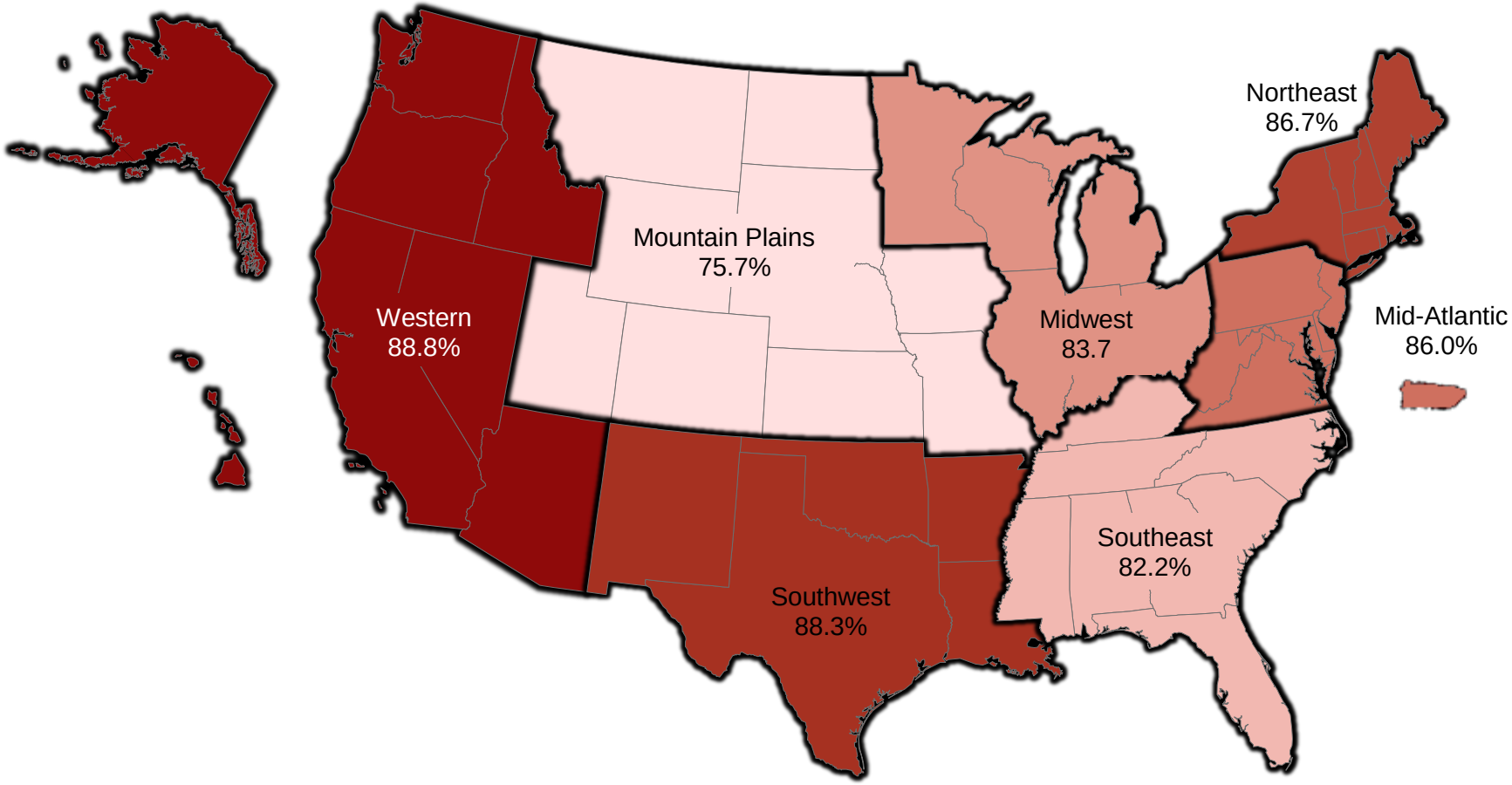
National Coverage Rate: 63.1%



Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, WIC Administrative Data

Figure 3: WIC Coverage Rate for Infants by FNS Region, CY 2012

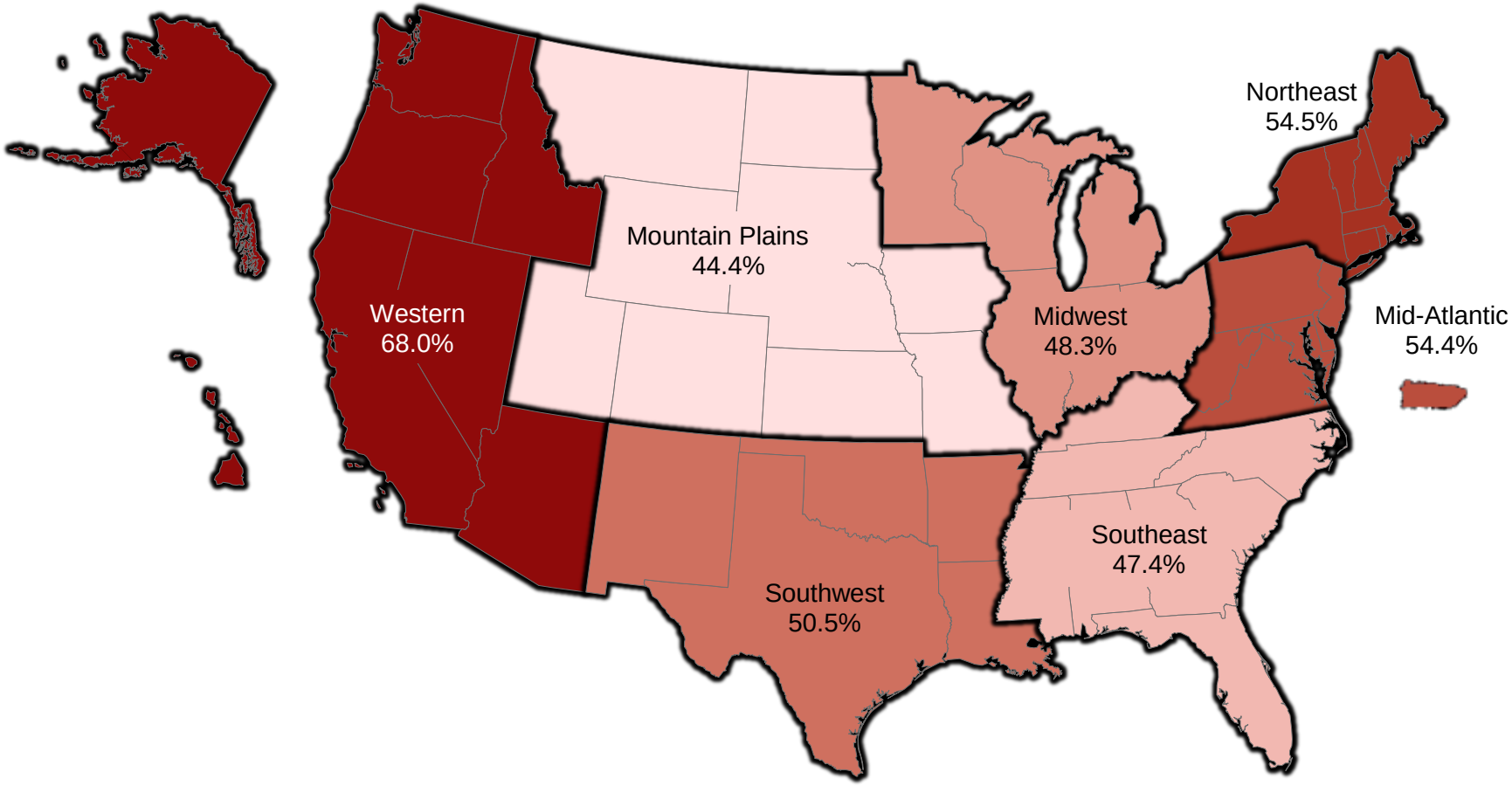
National Coverage Rate: 85.1%



Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, WIC Administrative Data

Figure 4: WIC Coverage Rate for Children (Ages 1-4) by FNS Region, CY 2012

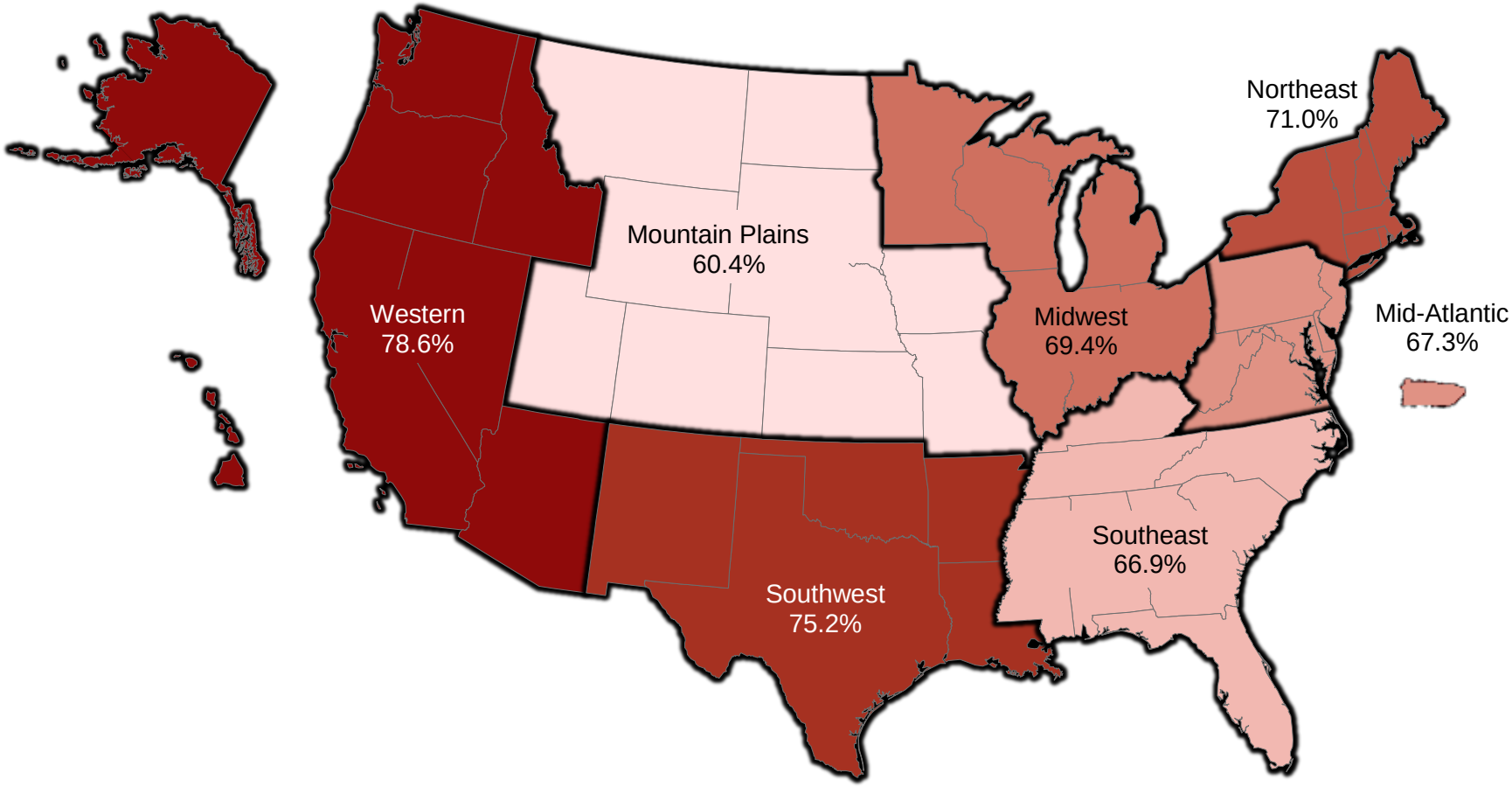
National Coverage Rate: 53.4%



Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, WIC Administrative Data

Figure 5: WIC Coverage Rate for Pregnant Women by FNS Region, CY 2012

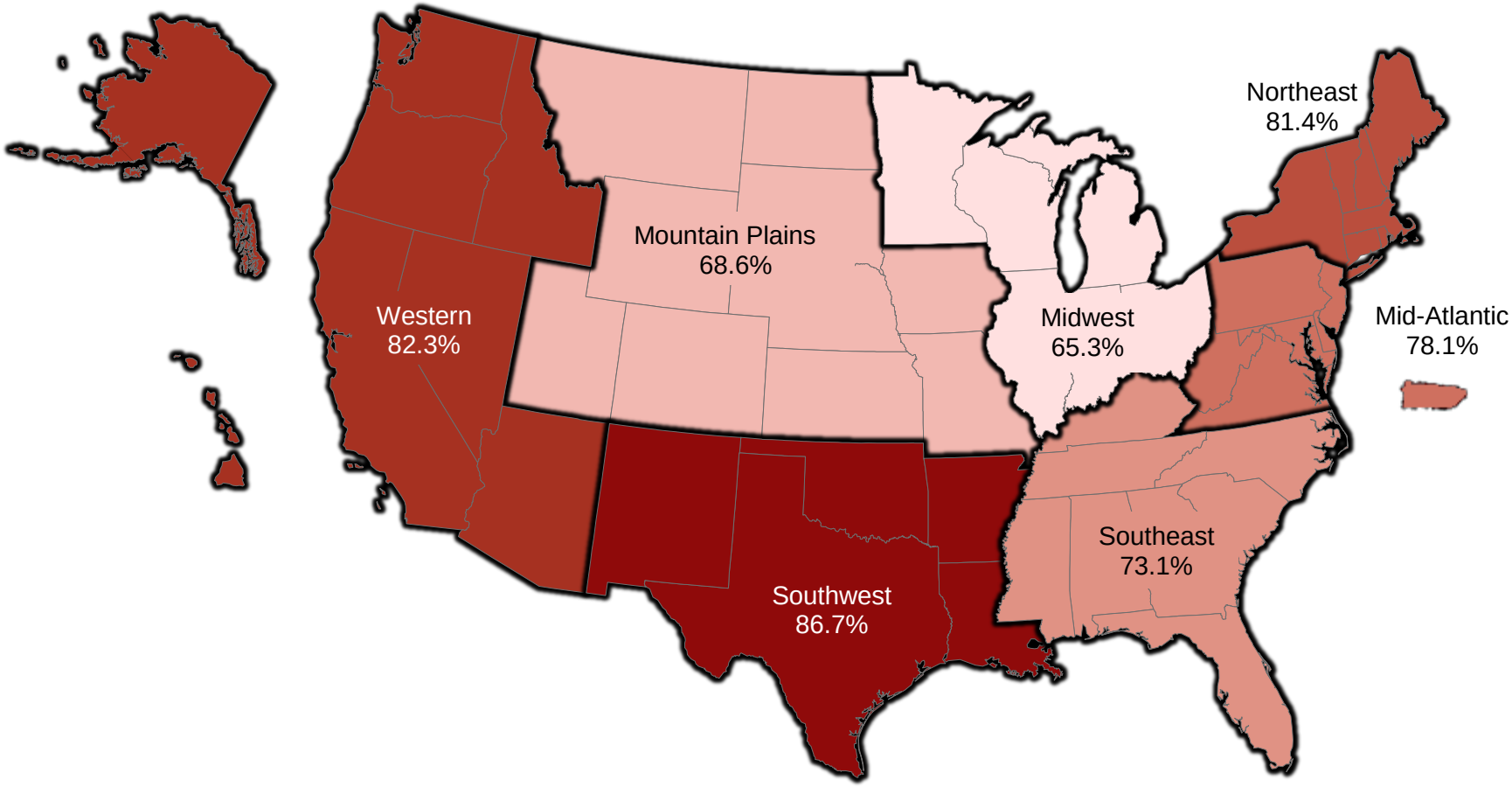
National Coverage Rate: 70.9%



Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, WIC Administrative Data

Figure 6: WIC Coverage Rate for All Postpartum Women by FNS Region, CY 2012

National Coverage Rate: 77.0%



Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, WIC Administrative Data

Coverage rate estimates for 2012 show substantial variation between States (Table 13 and Figure 7).[43] In 2012, the State coverage rates range from 44 percent in New Hampshire to 82 percent in California (and 86 percent in Puerto Rico). While California's rate is well above the national rate, the coverage rates of the other four States with the largest numbers of WIC eligibles range from slightly below the national rate (Florida, at 58 percent) to slightly above the national rate (New York and Texas, both at 66 percent).

Between 2011 and 2012, national-level coverage rates appear to have increased for infants and pregnant women by 2.0 percent and for postpartum women by 1.3 percent, but decreased slightly for children (0.2 percent), resulting in an overall increase in the coverage rate of 0.5 percent (Table 14). At the regional level, coverage rates show somewhat larger changes from 2011 (Table 14 and Figure 8), ranging from a 9.9 percent increase in the Northeast for postpartum women to a 3.4 percent decrease in the Mid-Atlantic among pregnant women.

Considering all WIC subgroups together, the coverage rates in the Western region have been consistently higher than in any other region across the entire period from 2000 to 2012, while the coverage rates in the Mountain Plains have generally been lower than in other regions (Figure 8).[44] In all regions, coverage rates have risen slightly since the middle part of the decade. 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.

Note that while this analysis can point to cross-State and cross-region variations in coverage rates, it does not allow us to understand the reasons that the WIC coverage rates appear to vary. That would require more in-depth analysis of variations in the characteristics of the eligible individuals across States and regions, as well as variations in procedures for administering the WIC program.

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

[44] The high rates in the Western region have been primarily due to the high rates in California.

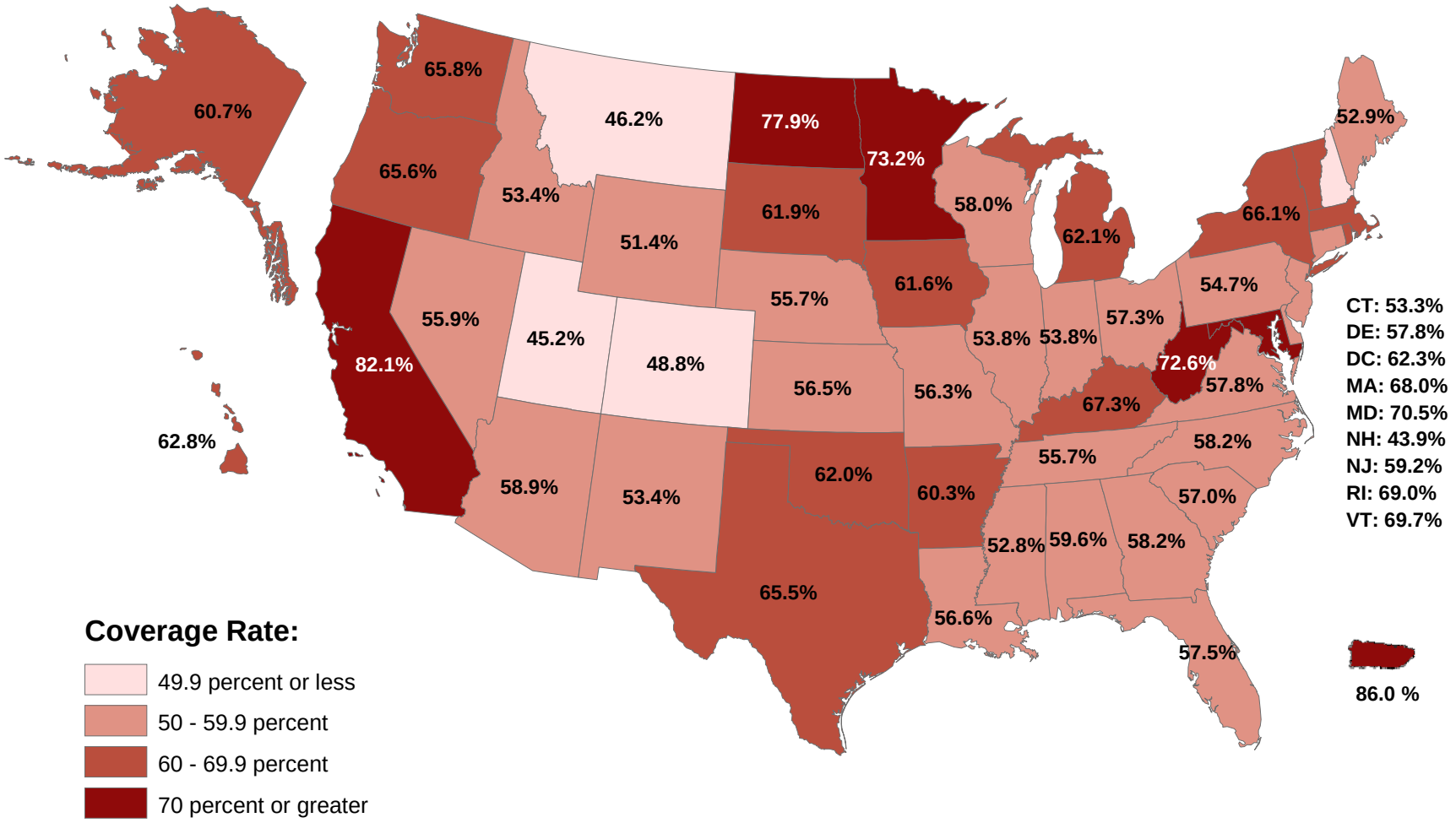
Table 13: WIC Eligibles and Coverage Rates by State and FNS Region, CY 2012

	Eligibles	Participants	Coverage Rate		Eligibles	Participants	Coverage Rate
State[a]							
Alabama	237,339	141,347	59.6%	New York	792,255	524,076	66.1%
Alaska	40,443	24,545	60.7%	North Carolina	462,173	268,833	58.2%
Arizona	324,215	190,862	58.9%	North Dakota	17,455	13,605	77.9%
Arkansas	155,437	93,695	60.3%	Ohio	476,825	273,157	57.3%
California	1,788,014	1,468,723	82.1%	Oklahoma	197,522	122,394	62.0%
Colorado	210,253	102,583	48.8%	Oregon	169,283	111,016	65.6%
Connecticut	105,520	56,254	53.3%	Pennsylvania	460,184	251,891	54.7%
Delaware	37,935	21,929	57.8%	Puerto Rico	223,323	192,041	86.0%
D.C.	26,073	16,248	62.3%	Rhode Island	34,937	24,113	69.0%
Florida	858,262	493,285	57.5%	South Carolina	227,259	129,551	57.0%
Georgia	517,367	301,046	58.2%	South Dakota	35,309	21,865	61.9%
Hawaii	59,118	37,132	62.8%	Tennessee	291,610	162,507	55.7%
Idaho	82,538	44,037	53.4%	Texas	1,478,063	967,774	65.5%
Illinois	531,554	285,864	53.8%	Utah	151,906	68,729	45.2%
Indiana	303,240	163,165	53.8%	Vermont	22,030	15,357	69.7%
Iowa	110,511	68,023	61.6%	Virginia	274,177	158,479	57.8%
Kansas	131,391	74,276	56.5%	Washington	296,695	195,088	65.8%
Kentucky	194,758	131,081	67.3%	West Virginia	65,149	47,310	72.6%
Louisiana	253,269	143,234	56.6%	Wisconsin	202,724	117,588	58.0%
Maine	47,769	25,289	52.9%	Wyoming	24,104	12,401	51.4%
Maryland	206,752	145,725	70.5%				
Massachusetts	180,026	122,446	68.0%	**FNS Region**[b]			
Michigan	411,393	255,618	62.1%	Northeast	1,219,580	783,792	64.3%
Minnesota	174,002	127,312	73.2%	Mid-Atlantic	1,588,855	1,010,364	63.6%
Mississippi	177,883	93,946	52.8%	Southeast	2,966,650	1,721,595	58.0%
Missouri	256,640	144,612	56.3%	Midwest	2,099,738	1,222,703	58.2%
Montana	44,112	20,390	46.2%	Southwest	2,202,458	1,390,197	63.1%
Nebraska	75,111	41,856	55.7%	Mountain Plains	1,056,789	568,340	53.8%
Nevada	135,250	75,581	55.9%	Western	2,919,291	2,165,332	74.2%
New Hampshire	37,044	16,257	43.9%				
New Jersey	289,434	171,468	59.2%	**Total**	**14,053,362**	**8,862,323**	**63.1%**
New Mexico	118,167	63,101	53.4%				

Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, Census International Data Base, WIC Administrative Data

Figure 7: WIC Coverage Rates for All Participants, by State, CY 2012

National Coverage Rate: 63.1%



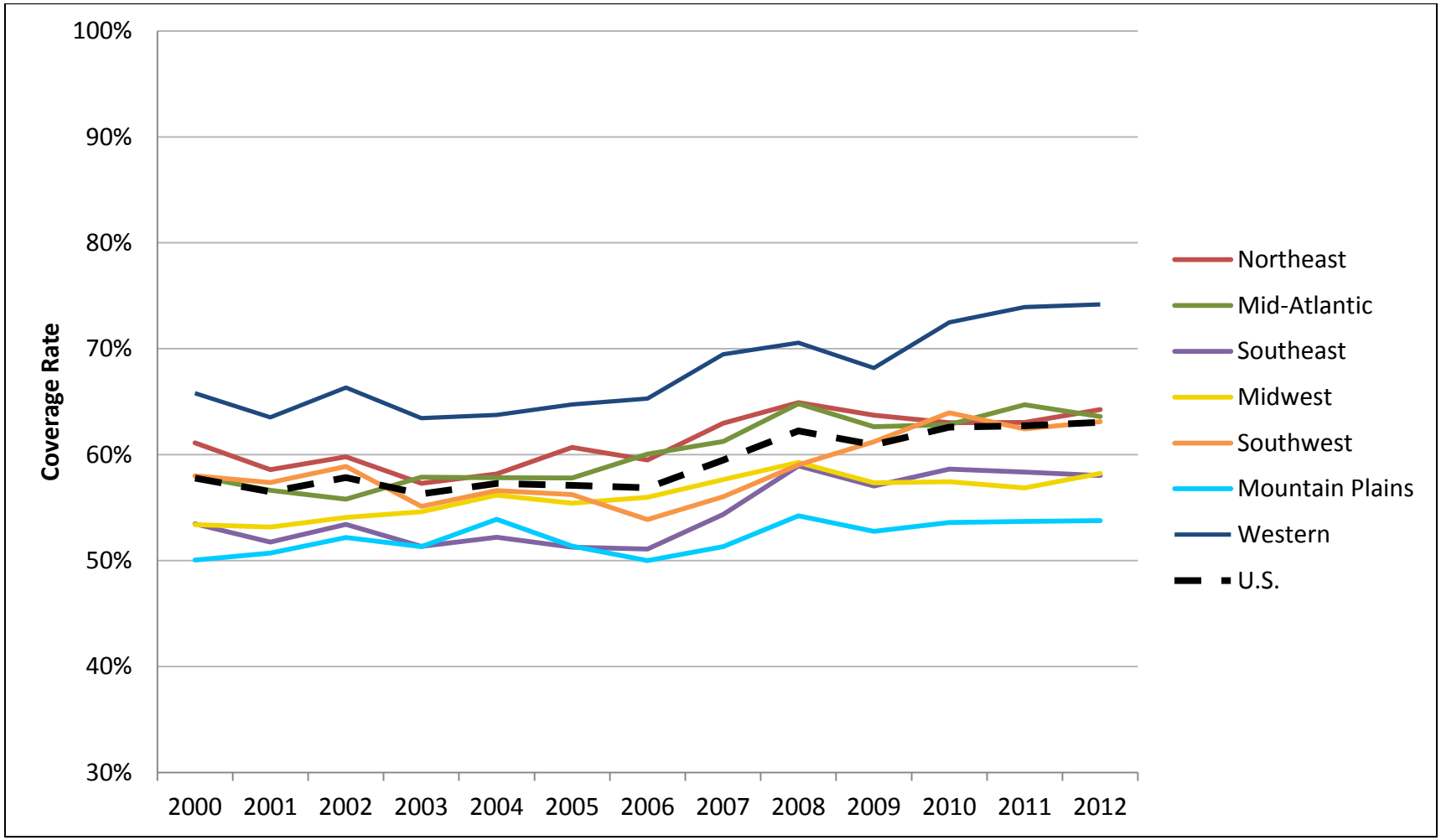
Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, WIC Administrative Data

Table 14: WIC Coverage Rates by FNS Region and Participant Group, CY 2012 and CY 2011

	Infants	Children (age 1 to 4)	Pregnant Women	All Postpartum Women	Total
Coverage Rate, 2012					
Northeast	86.7%	54.5%	71.0%	81.4%	64.3%
Mid-Atlantic	86.0%	54.4%	67.3%	78.1%	63.6%
Southeast	82.2%	47.4%	66.9%	73.1%	58.0%
Midwest	83.7%	48.3%	69.4%	65.3%	58.2%
Southwest	88.3%	50.5%	75.2%	86.7%	63.1%
Mountain Plains	75.7%	44.4%	60.4%	68.6%	53.8%
Western	88.8%	68.0%	78.6%	82.3%	74.2%
Total	**85.1%**	**53.4%**	**70.9%**	**77.0%**	**63.1%**
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, 2012 vs 2011					
Northeast	5.9%	-0.4%	6.1%	9.9%	2.0%
Mid-Atlantic	-0.9%	-1.9%	-3.4%	-1.2%	-1.7%
Southeast	-1.3%	-0.1%	-1.0%	-1.0%	-0.5%
Midwest	5.2%	1.5%	5.8%	-0.3%	2.4%
Southwest	7.8%	-2.8%	8.4%	5.2%	1.1%
Mountain Plains	-0.5%	-0.1%	0.4%	2.5%	0.2%
Western	-0.2%	0.9%	-0.4%	-0.7%	0.3%
Total	**2.0%**	**-0.2%**	**2.0%**	**1.3%**	**0.5%**

Source: 2013 CPS-ASEC, 2012 ACS, 2012 PRCS, Census International Data Base, WIC Administrative Data

Figure 8: All Participants Coverage Rate by FNS Region, 2000–2012[a]

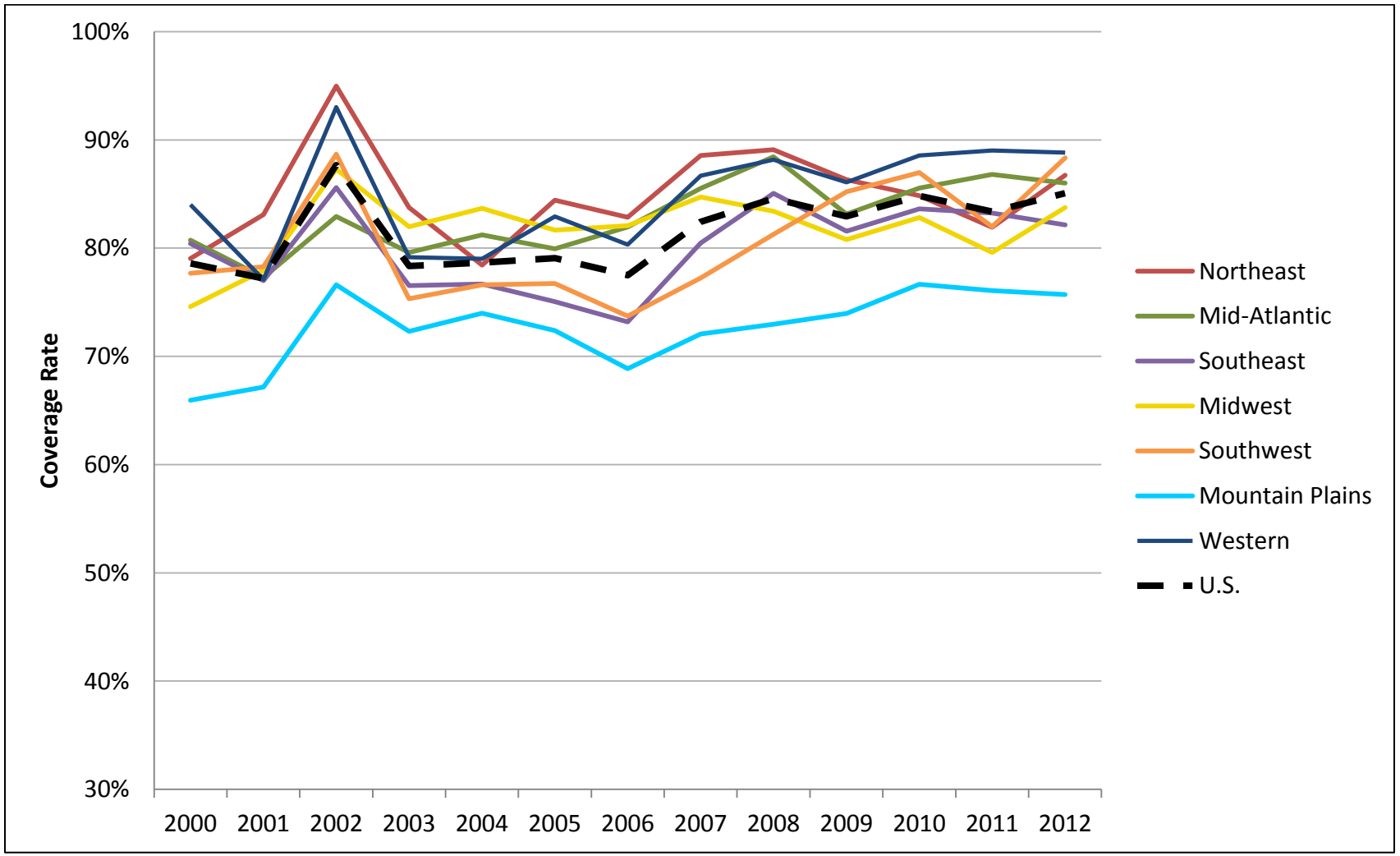


Notes:

[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, 2000–2012[a]

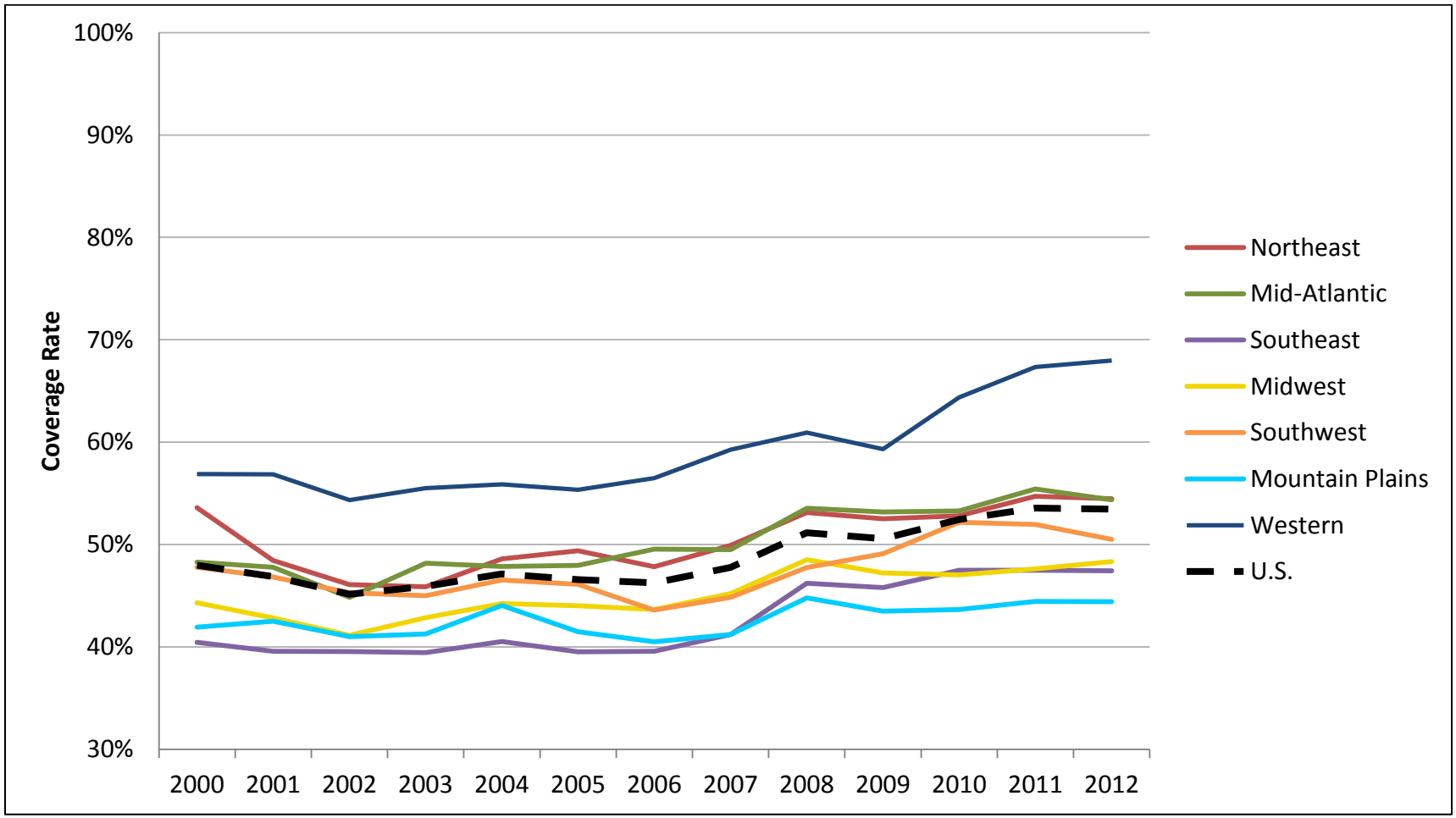


Notes:

[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, 2000–2012[a]

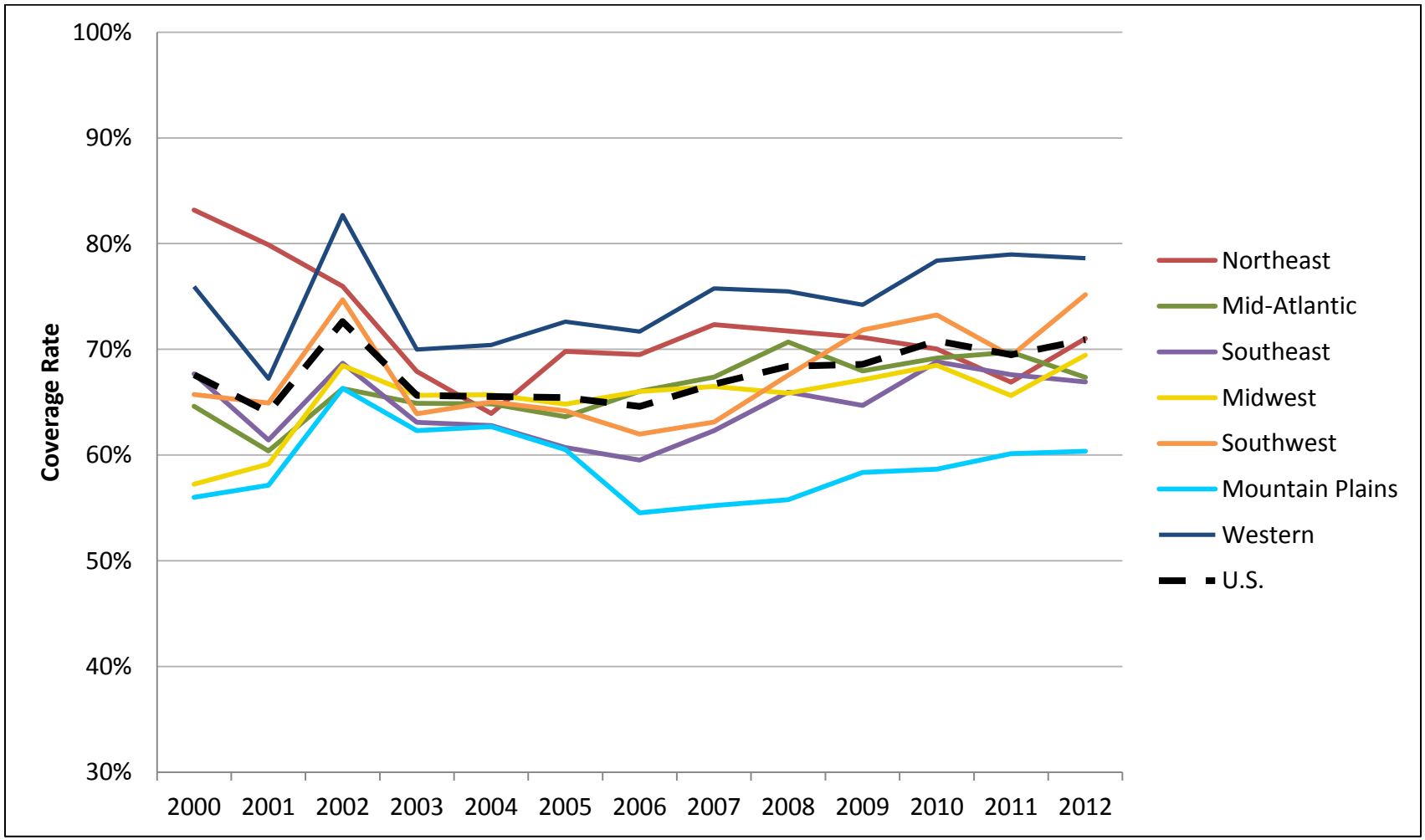


Notes:

[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, 2000–2012 [a]

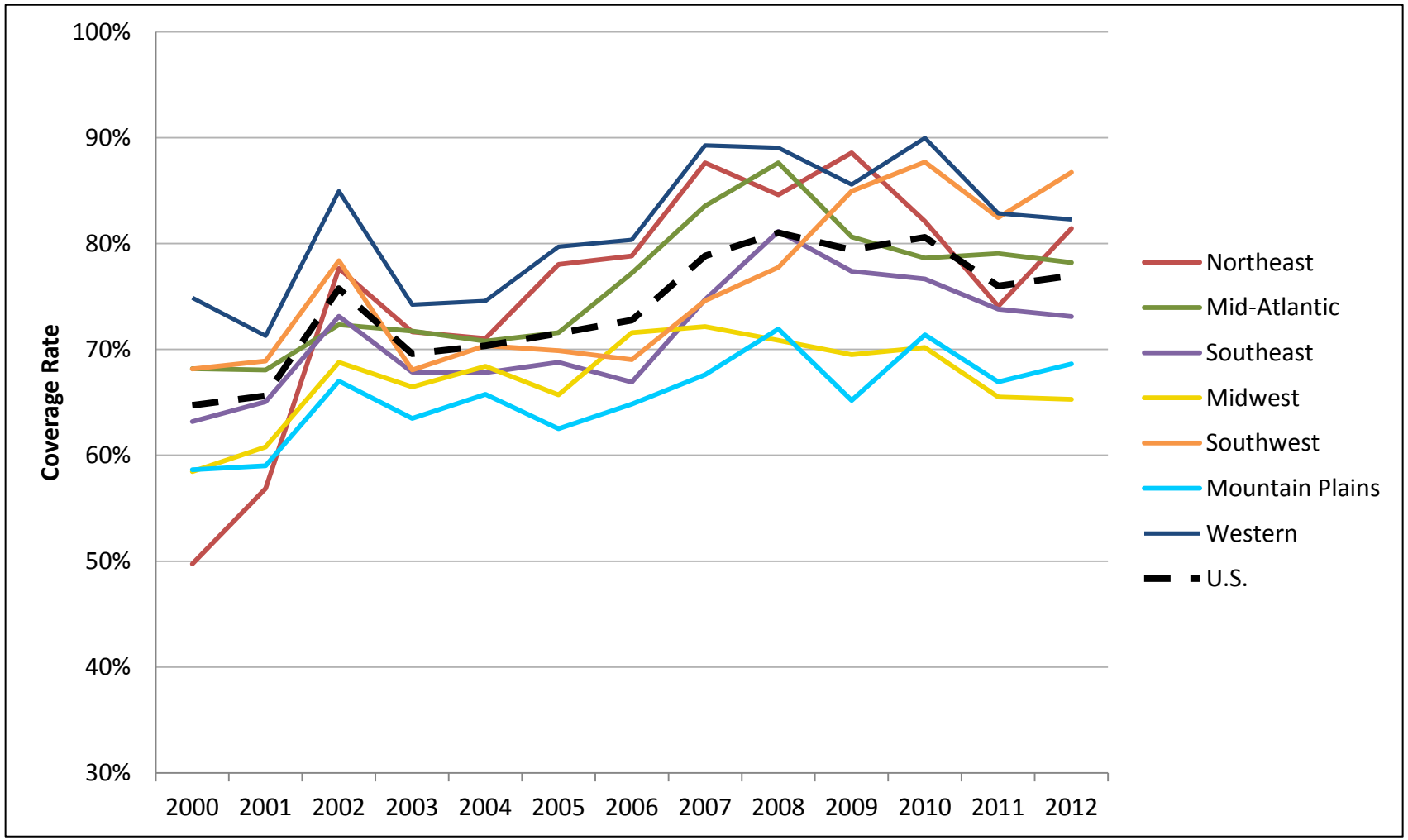


Notes:

[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, 2000–2012[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 2012 national, State, and regional estimates.[45] The national-level estimates are all derived from the CPS-ASEC using the generalized variance estimates described in the technical documentation for the March 2013 CPS-ASEC.[46] 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.[47] 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 2012 national eligibility estimates for infants and pregnant women are the highest among all participant groups at 4.7 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 18.5 percent for North Dakota), 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 1,219,580 people eligible for WIC in the Northeast in the average month of 2012. The standard error of that estimate is 38,336. We can be 90 percent sure that the true number falls within the range from (1,219,589 minus (1.65 * 38,336)) to (1,219,580 plus (1.65 * 38,336)), or from 1,156,325 to 1,282,835. For a 95 percent level of confidence, the process is the same, but a factor of 1.96 is applied to the standard error.

[45] 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.

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

[47] 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 2012

	Infants	Children (age 1-4)	Pregnant Women	All Post-Partum Women	Total
Eligibles[a]					
Northeast	205,918	775,876	105,947	131,840	1,219,580
Mid-Atlantic	235,723	855,030	121,282	147,669	1,359,704
Southeast	519,758	1,859,806	267,421	319,665	2,966,650
Midwest	362,522	1,313,563	186,521	237,132	2,099,738
Southwest	378,826	1,389,709	194,910	239,014	2,202,458
Mountain Plains	179,622	669,362	92,417	115,389	1,056,789
Western	494,542	1,802,040	254,447	344,528	2,895,556
Total	**2,376,909**	**8,665,386**	**1,222,945**	**1,535,237**	**13,800,476**
Standard Error[a]					
Northeast	16,058	30,335	8,262	7,395	38,336
Mid-Atlantic	17,553	32,373	9,031	8,244	41,191
Southeast	30,832	56,699	15,864	13,879	71,819
Midwest	23,629	43,720	12,157	11,091	55,630
Southwest	24,388	45,554	12,548	11,227	57,578
Mountain Plains	14,706	27,536	7,566	6,770	34,942
Western	29,692	55,343	15,277	14,647	70,508
Total	**111,619**	**210,936**	**57,429**	**51,119**	**263,925**
Coefficient of Variation[b]					
Northeast	7.8%	3.9%	7.8%	5.6%	3.1%
Mid-Atlantic	7.4%	3.8%	7.4%	5.6%	3.0%
Southeast	5.9%	3.0%	5.9%	4.3%	2.4%
Midwest	6.5%	3.3%	6.5%	4.7%	2.6%
Southwest	6.4%	3.3%	6.4%	4.7%	2.6%
Mountain Plains	8.2%	4.1%	8.2%	5.9%	3.3%
Western	6.0%	3.1%	6.0%	4.3%	2.4%
Total	**4.7%**	**2.4%**	**4.7%**	**3.3%**	**1.9%**

Source: 2013 CPS-ASEC, 2012 ACS, 2012 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 2012

	Eligibles	Standard Error	Coefficient of Variation[a]		Eligibles	Standard Error	Coefficient of Variation[a]
State[b]							
Alabama	237,339	12,522	5.3%	New York	792,255	25,457	3.2%
Alaska	40,443	4,916	12.2%	North Carolina	462,173	18,267	4.0%
Arizona	324,215	14,923	4.6%	North Dakota	17,455	3,226	18.5%
Arkansas	155,437	9,955	6.4%	Ohio	476,825	18,566	3.9%
California	1,788,014	44,346	2.5%	Oklahoma	197,522	11,347	5.7%
Colorado	210,253	11,689	5.6%	Oregon	169,283	10,433	6.2%
Connecticut	105,520	8,136	7.7%	Pennsylvania	460,184	18,211	4.0%
Delaware	37,935	4,793	12.6%	Puerto Rico	223,323	12,522	5.6%
D.C.	26,073	3,961	15.2%	Rhode Island	34,937	4,533	13.0%
Florida	858,262	26,705	3.1%	South Carolina	227,259	12,227	5.4%
Georgia	517,367	19,614	3.8%	South Dakota	35,309	4,629	13.1%
Hawaii	59,118	6,030	10.2%	Tennessee	291,610	14,111	4.8%
Idaho	82,538	7,107	8.6%	Texas	1,478,063	38,725	2.6%
Illinois	531,554	19,891	3.7%	Utah	151,906	9,839	6.5%
Indiana	303,240	14,297	4.7%	Vermont	22,030	3,637	16.5%
Iowa	110,511	8,317	7.5%	Virginia	274,177	13,579	5.0%
Kansas	131,391	9,122	6.9%	Washington	296,695	14,157	4.8%
Kentucky	194,758	11,253	5.8%	West Virginia	65,149	6,291	9.7%
Louisiana	253,269	12,978	5.1%	Wisconsin	202,724	11,510	5.7%
Maine	47,769	5,400	11.3%	Wyoming	24,104	3,778	15.7%
Maryland	206,752	11,574	5.6%				
Massachusetts	180,026	10,831	6.0%	**FNS Region**[c]			
Michigan	411,393	17,085	4.2%	Northeast	1,219,580	38,336	3.1%
Minnesota	174,002	10,531	6.1%	Mid-Atlantic	1,359,704	41,191	3.0%
Mississippi	177,883	10,679	6.0%	Southeast	2,966,650	71,819	2.4%
Missouri	256,640	13,081	5.1%	Midwest	2,099,738	55,630	2.6%
Montana	44,112	5,184	11.8%	Southwest	2,202,458	57,578	2.6%
Nebraska	75,111	6,795	9.0%	Mountain Plains	1,056,789	34,942	3.3%
Nevada	135,250	9,236	6.8%	Western	2,895,556	70,508	2.4%
New Hampshire	37,044	4,731	12.8%				
New Jersey	289,434	13,987	4.8%	**Total**	**13,800,476**	**263,925**	**1.9%**
New Mexico	118,167	8,649	7.3%				

Source: 2013 CPS-ASEC, 2012 ACS, 2012 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 figures 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. 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 14.1 million individuals were eligible for WIC during an average month of 2012 across the fifty States, the District of Columbia, Puerto Rico, and four other island territories. The estimate includes 2.4 million infants (approximately 61 percent of all infants in the United States and territories), 8.8 million children age one through four (54 percent of all young children), 1.2 million pregnant women, and 1.6 million postpartum women.

Compared to estimates of WIC eligibility in 2011, the estimates for 2012 show a decline in WIC eligibility for all groups except children age 2-3 and postpartum breastfeeding women. The number of infants who were WIC eligible declined by 3.8 percent, while the number of WIC eligible children decreased by 0.7 percent. For both groups, these overall declines are partially caused by decreases in the total size of the populations as defined for this analysis—the total number of infants in the population decreased by 1.8 percent, and the total number of young children in the population decreased by 1.1 percent. However, while the percentage of infants estimated eligible for WIC also decreased (from 62.7 percent in 2011 to 61.4 percent in 2012), the percentage of young children estimated eligible for WIC actually increased slightly (from 54.3 to 54.5 percent) but not enough to offset the decline in the total population of young children. Similarly, there was actually an increase in the number of WIC-eligible children age 2-3, but not enough to offset the decrease among the other ages. The number of eligible pregnant women followed the trend among infants and decreased by 3.8 percent. The number of eligible postpartum women also decreased (by 1.0 percent) although among those postpartum women eligible for the breastfeeding benefits eligibility increased by 3.5 percent.

Estimates of eligibles across the regions vary, with the Southeast and Western regions having the largest eligible populations (almost 3 million each), and the Mountain Plains and Northeast regions having the lowest eligible populations (just over 1 million each). 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 (12.7 percent) and Texas (10.5 percent), together account for almost 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 63.1 percent in 2012. Nationwide, infants have the highest coverage rate at 85.1 percent and children age one through four have the lowest rate at 53.4 percent. Coverage rates also vary by FNS region, ranging from 53.8 percent in the Mountain Plains to 74.2 percent in the Western region. Since 2000, coverage rates have been increasing. In 2012, the overall coverage rate showed a small increase compared to 2011, with increases in the coverage rate for infants and women offsetting a slight decrease in the coverage rate for children.

There are four 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 2012. Interested readers should consult Betson et al. (2011) for more details on all methods used to produce these estimates.

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