

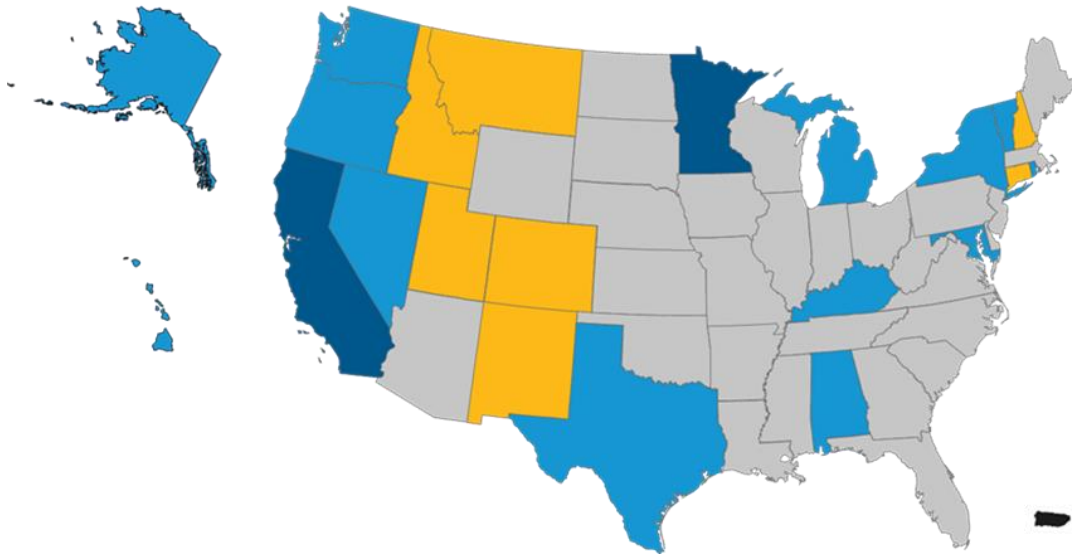


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**Volume I**

**National and State-Level Estimates of  
Special Supplemental Nutrition  
Program for Women, Infants, and  
Children (WIC) Eligibles and Program  
Reach, 2013**

**Final Report**

December 2015

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**United States  
Department of  
Agriculture**

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Special Nutrition Programs  
Report No. WIC-15B-ELIG

## Volume I

# National and State-Level Estimates of Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Eligibles and Program Reach, 2013

## Final Report

**Authors:**

Paul Johnson  
Erika Huber  
Linda Giannarelli  
David Betson

**Submitted by:**

The Urban Institute  
2100 M Street, NW  
Washington, DC 20037

**Submitted to:**

Office of Policy Support  
Food and Nutrition Service  
3101 Park Center Drive  
Alexandria, VA 22302-1500

**Project Director:**

Linda Giannarelli

**Project Officer:**

Grant Lovellette

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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. WIC is a federally-funded program, but the funding is not open-ended. Instead, Congress authorizes a certain amount of funds each year. The Food and Nutrition Service (FNS), which administers WIC, needs accurate estimates of how many people are eligible for WIC in each year to help gauge future needs. FNS also has a strong interest in looking at the percentage of eligible people who are participating (termed “coverage rates”)—in total, across states and regions, and for different subgroups—to understand how the program is working and how it can improve.

This report provides estimates of the population that met WIC eligibility criteria in 2013. National eligibility is shown for each participant subgroup: 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 eligibility figures are used to estimate the coverage rate for the program overall and for all these subgroups. The report also shows trends in WIC eligibility and coverage rates from 2000 through 2013. Estimates of WIC eligibility and coverage rates in 2013 are provided for the seven FNS regions overall and for subgroups. Eligibility and coverage rate estimates are also provided for each State for 2013. For the first time in this series of reports, the State estimates are shown separately for two subgroups: children ages 1 through 4, and all infants and women.

## 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.<sup>1</sup> 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 2013 national estimates use the 2014 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 2013 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 2013 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, or they are adjunctively income

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<sup>1</sup> See Ver Ploeg and Betson (2003) for the CNSTAT report.

eligible if they participate in another safety net program.<sup>2</sup> Specifically, individuals in families that participate in the Supplemental Nutrition Assistance Program (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; the methods for this adjustment were modified for the 2013 estimates to capture the fact that some States have adopted 12-month certification periods for children. 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 2013, and What Portion Received Benefits?**

In calendar year (CY) 2013, the methods described above suggest that 14.2 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 14.7 million.

Infants accounted for 16.8 percent of the total WIC-eligible individuals; children ages 1 through 4 comprised 63.8 percent of all eligible individuals (with approximately equal shares across the single years of age); pregnant women accounted for 8.7 percent; and the remaining 10.7 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 2013, 8.5 million individuals participated in the program in an average month, producing a total coverage rate (participants divided by eligibles) of 60.2 percent.<sup>3</sup> Coverage rates vary across the subgroups. The coverage rate for children was estimated at 49.8 percent, lower than the rates for other eligible groups. Infants and postpartum non-breastfeeding women had the highest coverage rates at 84.4 and 84.9 percent, respectively.

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<sup>2</sup> Participation in one of these programs is taken as proof that a person is income eligible for WIC. State and local agencies may also accept an applicant's documented participation in certain other means-tested programs as evidence of being income-eligible for WIC, if the other program routinely requires income documentation and has income guidelines at or below those of WIC.

<sup>3</sup> Participants include all people who receive a food package plus fully breastfeeding infants whose mothers receive a food package.

## Exhibit ES.1: WIC National-Level Eligibles and Coverage Rates by Participant Group in an Average Month: CY 2013

NOTE: This table includes estimates for the territories

Participant Group	Number Eligible	Percent of Total Eligible	Number Participating	Coverage Rate
Infants	2,387,223	16.8%	2,015,732	84.4%
Total Children Ages 1-4	9,053,165	63.8%	4,508,236	49.8%
Children Age 1 <sup>a</sup>	2,285,482	16.1%	1,571,481	68.8%
Children Age 2 <sup>a</sup>	2,280,827	16.1%	1,141,082	50.0%
Children Age 3 <sup>a</sup>	2,224,943	15.7%	1,051,357	47.3%
Children Age 4 <sup>a</sup>	2,261,914	15.9%	744,315	32.9%
Pregnant Women	1,228,252	8.7%	839,820	68.4%
Postpartum Women	1,520,267	10.7%	1,183,228	77.8%
Breastfeeding Women	826,003	5.8%	593,611	71.9%
Non-Breastfeeding Women	694,264	4.9%	589,617	84.9%
<b>All Participant Groups</b>	<b>14,188,907</b>	<b>100.0%</b>	<b>8,547,016</b>	<b>60.2%</b>

Source: 2014 CPS-ASEC for U.S. estimate, PRCS and Census for territories, WIC Administrative Data

Notes:

<sup>a</sup> WIC participant figures for children by single year of age are not available. The figures in this table are derived from the total number of children participating using the ratio of child enrollees by single year of age to the total number of children enrolled as reported in Johnson et al. (2013), Figure E.1.

### Did WIC Eligibility Change from 2012 to 2013?

Our best estimate of total WIC eligibility in 2013 is 1.0 percent higher than our best estimate for 2012 (Exhibit ES.2). However, when specific participant groups are considered, the changes from 2012 vary from the overall change in both magnitude and direction.

The largest change for any subgroup is a 2.6 percent increase in the WIC eligibility estimate for children. Between 2012 and 2013 the estimated population of young children remained essentially unchanged, but the portion estimated to meet eligibility requirements increased from 54.5 percent to 55.9 percent. Most of this increase is due to the increasing number of States using 12-month certification periods for children, as allowed by the Healthy, Hunger-Free Kids Act of 2010, PL 111-296. If none of the States had adopted this option, the eligible population would have increased by only 0.6 percent from 2012 to 2013.

In contrast to the change for children, the 2013 eligibility estimates for the other subgroups are all slightly lower than the 2012 estimates. The estimated number of WIC-eligible infants decreases by 1.4 percent. The decline is due primarily to a decrease in the estimated population of infants, which was

1.1 percent lower than the infant population figure used for the 2012 estimates. The portion of infants meeting eligibility requirements remained almost constant at about 61 percent.

**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 2012 to 2013**

*NOTE: This table includes estimates for the territories.*

Participant Group	Total Eligibles		Percent Change
	2013	2012	
Infants	2,387,223	2,420,597	-1.4%
Total Children Ages 1-4	9,052,810	8,823,888	2.6%
Pregnant Women	1,228,252	1,245,423	-1.4%
Postpartum Breastfeeding Women	826,003	839,736	-1.6%
Postpartum Non-Breastfeeding Women	694,264	723,718	-4.1%
<b>Total WIC Eligibles</b>	<b>14,188,552</b>	<b>14,053,362</b>	<b>1.0%</b>

Source: 2013 and 2014 CPS-ASEC; 2004 and 2008 SIPP panels; 2001-2002, 2003-2004, 2005-2006 NHANES

Note: Changes in the number of eligibles between 2012 and 2013 are not statistically significant at the 90 percent confidence level; all changes could be due solely to sampling variability in the survey.

Among women, the change in eligibility of pregnant women follows the change for infants (i.e., a 1.4 percent decrease), while postpartum women show somewhat larger declines – the number of breastfeeding women eligible for WIC decreases by 1.6 percent and the number of non-breastfeeding women eligible for WIC decreases by 4.1 percent. The changes for postpartum women differ from those for infants and pregnant women due to changes in the two breastfeeding rates used for this analysis. According to the Infant Feeding Survey, conducted annually by Abbott Laboratories, the in-hospital breastfeeding rate for WIC mothers increased from 61 percent to almost 64 percent, while the 6-month rate decreased from 31 percent to 29 percent. Thus, compared to 2012, there are fewer non-breastfeeding women in the first 6 months postpartum (when even non-breastfeeding women are eligible for WIC); and in the second 6 months post-partum, there are somewhat fewer breastfeeding women due to the decrease in the 6-month breastfeeding rate.

As with any estimates derived in part from survey data, there is a degree of uncertainty. In fact, from a statistical standpoint, we cannot rule out the possibility that all of the changes in the 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.

**Since 2000, How Has Eligibility Changed On Average?**

Since 2000 (the first year in the current series of estimates), growth in WIC eligibility has averaged 1.2 percent per year, resulting in a total 2013 eligibility estimate 13.7 percent higher than the 2000 estimate (Exhibit ES.3). Most of the increase in total WIC eligibility since 2000 is due to a 22.3 percent increase in the estimated number of children eligible for the program. The number of eligible infants

and eligible pregnant women has declined in recent years, and is estimated to be 1.2 percent lower in 2013 than in 2000, while the number of eligible postpartum women is estimated to have increased by 7.1 percent. During the same period, the number of annual births in the United States mainland and territories declined by about 4 percent;<sup>4</sup> the fact that estimated eligibility increased for children and declined by only about 1 percent for infants suggests that the share of all infants and young children who are eligible for WIC has increased over the decade. The number of postpartum women eligible for WIC in the average month of the year has increased by an estimated 7.1 percent since 2000, due to increases in breastfeeding that result in more postpartum women being eligible for a full year instead of the six months of eligibility for a non-breastfeeding mother.

### Exhibit ES.3: Growth in WIC Eligible Population, 2000-2013

*NOTE: This table includes estimates for the territories*

<b>Participant Group</b>	<b>Cumulative Growth</b>	<b>Average Annual Growth</b>
Infants	-1.2%	-0.1%
Total Children Ages 1-4	22.3%	1.8%
Pregnant Women	-1.2%	-0.1%
All Postpartum Women	7.1%	0.6%
<b>All Participant Groups</b>	<b>13.7%</b>	<b>1.2%</b>

Source: 2014 CPS-ASEC, ACS, PRCS, Census International Data Base, WIC Administrative Data

### How does the Coverage Rate Vary over Time?

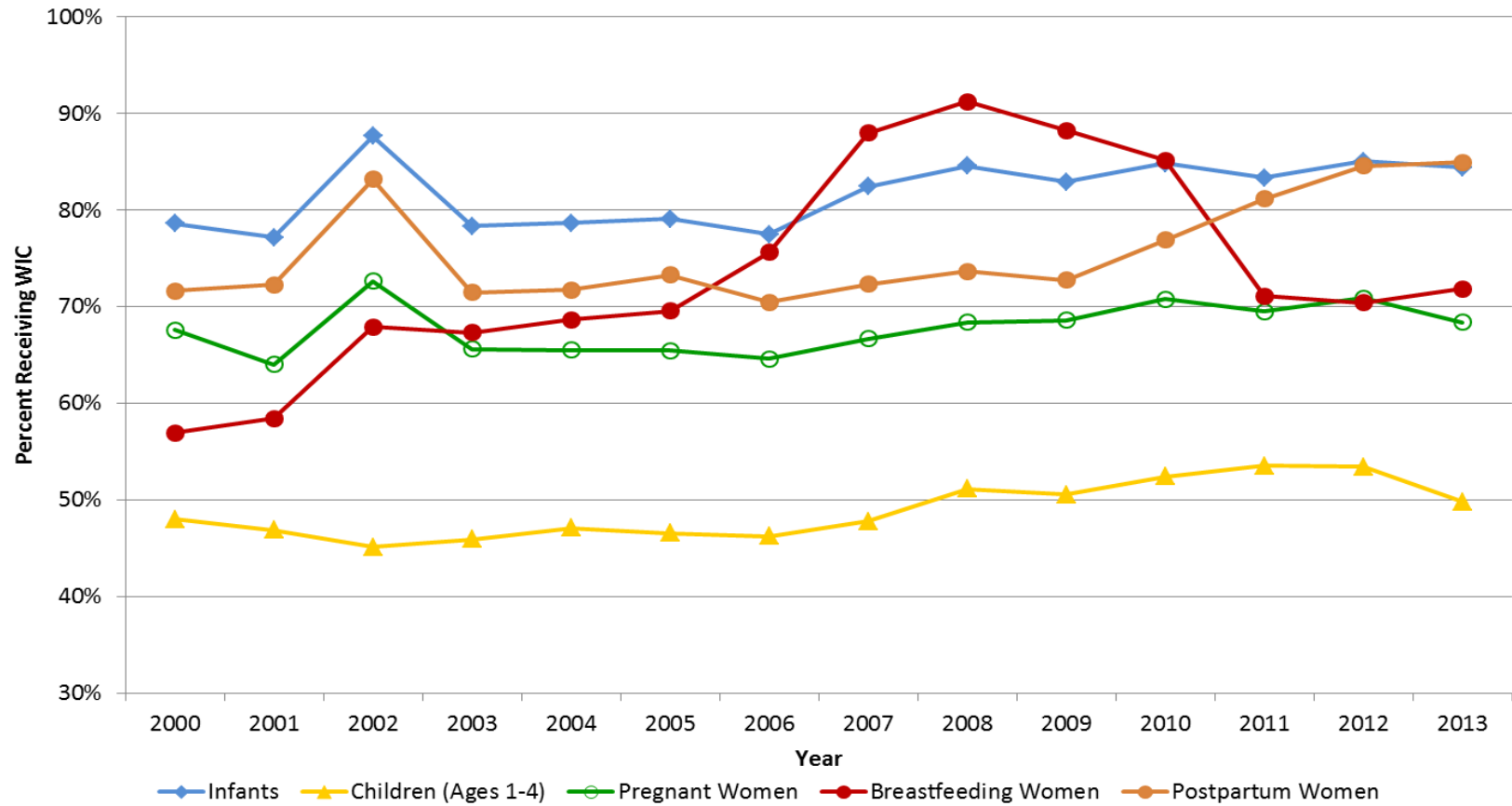
Estimated coverage rates by subgroup fluctuate over the 2000 to 2013 time frame (Exhibit ES.4). The current estimated coverage rate of about 84 percent for infants is higher than the estimated rate for 2000 (just under 80 percent) but lower than the highest rate estimated for the period (88 percent in 2002). It is similar to the rates since 2007, which have ranged from about 82 percent to 85 percent.

Among pregnant women, the estimated coverage rate in 2013 is approximately the same as it was in 2000, at 68 percent in both years. The coverage rate for non-breastfeeding postpartum women has increased over the period, from 72 percent in 2000 to 85 percent in 2013. The estimated coverage rate for breastfeeding postpartum women has also increased, from 57 percent in 2000 to 72 percent in 2013; the particularly high coverage rates for breastfeeding postpartum women from 2007 to 2010 were due to a combination of higher enrollment and lower estimated eligibility for this subgroup. Except for the period 2006 to 2010, the coverage rate for non-breastfeeding postpartum women exceeds the coverage rate for breastfeeding postpartum women.<sup>5</sup>

<sup>4</sup> Data published by the Center for Disease Control, National Vital Statistics Reports, Volume 50, Number 5, Table 10, February 12, 2002 and Volume 64 Number 10, Table 10, January 15, 2015.

<sup>5</sup> The survey that provides the breastfeeding estimates for this analysis showed a drop in breastfeeding rates in the period 2006 to 2010 that contributed to the very high measured coverage rates for breastfeeding postpartum women in this period. That temporary decline in breastfeeding does not appear in another breastfeeding survey.

**Exhibit ES.4: Coverage Rate: Percent of Eligible Population Receiving WIC Benefits, CY 2000 to CY 2013**



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



The estimated coverage rate for children has been considerably lower than for other groups across the period. The estimated children's coverage rate increased over the period from 48 percent in 2000 to 53 percent in 2012, but declined to 50 percent this year due in part to the increase in the children's eligibility estimate.

Note, however, that the WIC eligibility estimates that underlie the coverage rate estimates are not precisely comparable across the period. There have been slight adjustments to the methods, such as a modification to the procedures for applying population adjustments in the estimates for 2011 and later years, and the incorporation of State variation in children's certification periods in this year's estimates. Also, 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;<sup>6</sup> the increase in the estimated coverage rates for infants and women in 2002 is also related to weighting changes.

### **Has the Coverage Rate Changed Since 2012?**

The analysis suggests that the WIC coverage rate may have declined somewhat between 2012 and 2013. The administrative data show that the caseload fell by 3.6 percent, while there was no statistically significant change in eligibility. Considering the subgroups, the estimated coverage rate declined the most for children, but it also declined for infants and for pregnant women.

### **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 70.4 percent in the Western region, and the lowest is 51.1 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 2012.<sup>7</sup> 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 1.269 million people, we can say with 90 percent confidence that the actual number of eligible people is in the range from 1.198 to 1.342 million. Thus, the actual coverage rates could be somewhat higher or lower than shown.

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<sup>6</sup> For details see Martinez-Schiferl et al. (2012) and Johnson et al. (2014).

<sup>7</sup> For 2009 regional coverage rates see Betson et al. (2011). For 2010 regional coverage rates see Martinez-Schiferl et al. (2012). For 2011 and 2012 regional coverage rates see Johnson et al. (2014, 2015).

## Exhibit ES.5: WIC Eligibles and Coverage Rates by FNS Region, CY 2013

NOTE: This table includes estimates for the territories

FNS Region	Eligibles	Participants	Coverage Rate	Confidence Interval for Eligibility Estimate <sup>a</sup>	
				Lower bound	Upper bound
Northeast	1,269,800	758,576	59.7%	1,197,977	1,341,622
Mid-Atlantic	1,612,309	989,709	61.4%	1,515,248	1,709,371
Southeast	2,998,599	1,656,761	55.3%	2,858,913	3,138,285
Midwest	2,080,883	1,183,628	56.9%	1,976,767	2,184,998
Southwest	2,226,042	1,344,443	60.4%	2,116,255	2,335,829
Mountain Plains	1,051,038	537,510	51.1%	988,233	1,113,844
Western	2,949,881	2,076,389	70.4%	2,812,972	3,086,790
<b>Total</b>	<b>14,188,552</b>	<b>8,547,016</b>	<b>60.2%</b>	<b>13,634,932</b>	<b>14,742,172</b>

Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, Census International Data Base, WIC Administrative Data

<sup>a</sup> We are 90 percent confident that the true number of eligibles falls within this range.

### Summary

In the average month of 2013, an estimated 14.2 million people were eligible for WIC benefits. The eligibility estimate is 1.0 percent higher than it was for 2012, due to an estimated increase in the number of eligible children (in part because of longer certification periods in some States) combined with estimated reductions in eligibility for women and infants. The program provided benefits to 60.2 percent of the WIC-eligible individuals—approximately 8.5 million people. Infants and non-breastfeeding postpartum women had the highest coverage rates at 84.4 and 84.9 percent, respectively. The coverage rate for children ages 1 through 4 was 49.8 percent. Coverage rates also varied by region. The estimated regional coverage rates ranged from a high of 70.4 percent in the Western region to a low of 51.1 percent for the Mountain Plains.

## Introduction

This report provides estimates of WIC eligibility for calendar year (CY) 2013. The estimates are intended to capture eligibility in the average month of the year and can be compared with monthly participation data to derive coverage rate estimates. Eligibility estimates allow FNS to better predict future funding needs for the WIC program, and comparing these estimates to the actual number of participants helps gauge the program's effectiveness in supporting the nutrition of eligible women, infants, and children.

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 subgroup—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).<sup>8</sup> 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 most recent updates and extensions to the CNSTAT methods.<sup>9</sup> 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, and have been continued in this report.<sup>10</sup> The 2013 procedures institute another change, to capture whether States have adopted 12-month certification periods for children, and when they made that change.

This report begins by reviewing the specific methods and assumptions used to develop the estimates (including the new procedures related to State variation in children's certification period). Then estimates of the total WIC-eligible population in 2013 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 2013 WIC eligible population then is compared with the 2012 results. The next section presents State and regional level eligibility results, and the section following presents the coverage rates implied by comparing the estimated eligibility counts

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<sup>8</sup> See Ver Ploeg and Betson (2003) for the CNSTAT report.

<sup>9</sup> These methods are described in Betson et al. (2011).

<sup>10</sup> See Johnson et al. (2014).

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 2013, 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 2013 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 2013.<sup>11</sup> Appendix E provides details regarding the new procedures related to State variation in children’s certification period.

## **Overview of Methods for Estimates for 2013**

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).<sup>12</sup> 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.<sup>13</sup> We use the CPS-ASEC data collected in spring 2014 to estimate WIC eligibility during calendar year 2013.

The CPS-ASEC data we used for this year’s estimates includes information on fewer households than the files for recent years. The reason is that the Census Bureau divided the usual CPS-ASEC sample into two portions in order to test new income questions, with five-eighths being asked the standard questions while three-eighths received the new questions. Although the Census Bureau has released information from both portions, only the five-eighths portion was used for the Census Bureau’s computation of the official poverty estimates for 2013; for consistency with that decision,

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<sup>11</sup> See USDA (2006) for national-level estimates of WIC eligibility for 1994 through 2003 that are also based on the CNSTAT methodology.

<sup>12</sup> The survey was formerly known as the March CPS supplement. Interviews are conducted from February through April.

<sup>13</sup> Technical documentation of the CPS-ASEC is available from the Census Bureau, <http://www.census.gov/cps/methodology/techdocs.html>.

and to avoid potential complications due to using income data based on two different sets of questions, we use only the five-eighths file for the 2013 WIC eligibility estimates. The smaller sample size means that the 2013 estimates have somewhat less statistical precision than would be the case with the full sample. Specifically, the smaller sample means that the standard errors of the estimates are 26 percent larger than if the same estimate had been produced by the full sample.<sup>14</sup>

As indicated in Table 1, the preliminary counts of infants and children are adjusted to compensate for differences between weighted counts of infants and children in the CPS-ASEC data and the Census Bureau population estimates. The two sets of figures may differ because the Census Bureau's weighting procedures are not designed to meet population targets by exact year of age, and also because the population estimates may change after the point that CPS-ASEC data are weighted. Thus, the CPS-ASEC counts for a particular subgroup of infants or children may be inflated or deflated to better reflect the Census Bureau estimate for that subgroup. The population adjustment factors are recomputed each time the eligibility estimates are updated. The factors vary by three characteristics: age (separate factors are computed for each exact age, 0 through 4), race (three groups: white, black, and other), and gender (two groups: female and male).

The 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 2013 WIC eligibility estimates, the population adjustment factors are computed using Census Bureau population data for 2011, 2012, 2013, and 2014, and CPS-ASEC data collected in those same four years.<sup>15</sup> The Census population estimates used in the adjustment factors are vintage 2013 postcensal estimates for all four years. 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 12.3 percent reduction in weights (for black males age 1) to a 10.7 percent increase (for black male infants).<sup>16</sup> 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.<sup>17</sup>

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<sup>14</sup> Note that the use of these new income questions in subsequent CPS files may present some challenges when comparing future estimates of eligibility to our current estimates. For more information about the redesigned income questions, see <http://www.census.gov/hhes/www/poverty/data/incpovhlth/2013/Split-sample-note.doc>.

<sup>15</sup> 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 and 2013 update.

<sup>16</sup> See Ver Ploeg and Betson (2003) for a discussion of the CPS undercount of infants.

<sup>17</sup> See OMB (1997).

**Table 1: Steps and Sources for 2013 Estimates of WIC Eligibility of Infants and Young Children (Ages 1-4), Using Data from the 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, and Census Bureau International Data Base**

Step	Description	Sources for 2013 Updates to Estimates and Adjustment Factors
Demographic eligibility	Identify infants and children (ages 1-4) in the survey.	2014 CPS-ASEC - National Estimates 2013 ACS - State Estimates 2013 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 2011, 2012, 2013, and 2014 State and Puerto Rico Estimates: Postcensal population estimates from the Census Bureau for 2013
Income eligibility	Count as eligible if prior year's annual family income is $\leq$ 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.  Poverty guidelines are the blended poverty guidelines for the calendar year for which estimates are produced.	2014 CPS-ASEC - National Estimates 2013 ACS - State Estimates 2013 PRCS - Puerto Rico Estimates 2010 Census - Other Island Territories Estimates  Blended FY 2012 and FY 2013 poverty guidelines
Adjunctive eligibility	Add in as eligible those infants/children whose household reports SNAP, family reports TANF, or who are themselves reported as being enrolled in Medicaid at any point during the prior calendar year.  For TANF receipt, "family" on the CPS is defined as the narrowly defined family and also includes any related children whose parents are not present in the household. On the ACS and PRCS the definition is the narrowly defined family with subfamilies separate.	2014 CPS-ASEC 2013 ACS 2013 PRCS
Adjust for fluctuations in monthly income and certification periods	Multiply the estimates by a factor of 1.16 for infants and 1.02 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. The factor for children takes into account that some states have a 6 month certification period while others have adopted the optional 12 month period.	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 2013 - Puerto Rico  Census Bureau International Data Base - Other Island Territories

**Table 2: Population Adjustment Factors**

	Weight Adjustment Factors:					
	Females			Males		
	White	Black	Other	White	Black	Other
<b>Infants</b>	1.000	1.071	1.106	1.000	1.107	1.014
<b>Children (age 1)</b>	1.000	0.940	0.939	1.000	0.877	0.987
<b>Children (age 2)</b>	1.000	1.019	1.026	1.000	1.012	1.072
<b>Children (age 3)</b>	1.000	1.000	1.000	1.000	1.000	1.000
<b>Children (age 4)</b>	1.000	0.988	1.000	1.000	0.953	0.985

Notes:

Factors are set to 1 unless both four-year accumulations and 2013 population figures show the same direction of difference between Census and CPS-ASEC data.

### **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 (2013) that is less than 185 percent of the applicable 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 specifies that the people living as one economic unit are treated as the family for eligibility determination, but the program does not explicitly operationalize the concept of the economic unit.) The poverty guidelines used in this step are an average of the guidelines released in 2012 (which would have been used by WIC programs for the first half of calendar year 2013), and the guidelines released in 2013 (which would have been used by WIC programs in the second half of calendar year 2013).

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.<sup>18,19,20</sup> Thus, the next step is to count the infants

<sup>18</sup> Participation in one of these programs is taken as proof that a person is income eligible for WIC. Under an additional policy known as “automatic income eligibility”, State and local agencies may accept an applicant’s documented participation in certain other means-tested programs as evidence of being income-eligible for WIC, if the other program routinely requires income documentation and has income guidelines at or below those of WIC. We assume that any individuals found eligible through automatic income eligibility in their State/locality would be identified as income-eligible by the methods used for these estimates.

<sup>19</sup> 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

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. On an annual basis, adjunctive eligibility is likely underestimated due to the underreporting of benefit receipt in survey data.<sup>21</sup>

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 participation in Medicaid, SNAP, and TANF may vary 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 certified for either 6 or 12 months as decided by each State.<sup>22</sup> 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 data from the Survey of Income and Program Participation (SIPP);<sup>23</sup> the SIPP, unlike the CPS-ASEC, allows month-by-month observation of family circumstances. Since in some States children have shorter certification periods than infants, the factor differs for infants and children. For infants, the 2013 estimates use the same factor as was used for the 2011 and 2012 estimates. For children, the procedures were modified for this year’s estimates to reflect the degree to which 12-month certification periods have been adopted at the State level.

For infants, the factor was previously computed by comparing two types of SIPP-based eligibility estimates for infants: one using the monthly data and including a 12 month certification period, and another that mimics the type of estimate that can be computed with the CPS-ASEC data.<sup>24</sup> In earlier work, eligibility estimates were computed following both approaches and using SIPP data for

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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.

<sup>20</sup> 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.

<sup>21</sup> 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.

<sup>22</sup> The option to extend the certification period to 12 months for children was enacted as part of the Healthy, Hunger-Free Kids Act of 2010, PL 111-296, passed in December 2010. Previously, children could be certified for only 6 months,

<sup>23</sup> More information on the SIPP can be found at the Census Bureau website: <http://www.census.gov/sipp/>

<sup>24</sup> The details of these procedures are summarized in Betson et al. (2011).



2005, 2006, and 2010. For each year, the ratio of the second estimate was compared to the first; across the three years, the average, factor is 1.16. 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.

For children, the comparison of the pairs of SIPP-based estimates has previously suggested an annual-to-monthly adjustment factor of 1.0 if all States are assumed to use 6-month certification periods (i.e. the SIPP analysis suggests that average monthly eligibility of children when 6-month certification is in effect in all States is the same as it would appear based on annual income and program participation). This 1.0 factor was used for the WIC eligibility estimates for 2011 and 2012. Previous analysis (reported in Appendix E of the 2011 report) also showed that if all States were assumed to use 12-month certification (and to have adopted it at an early enough date that it affects eligibility in all 12 months of 2013), the adjustment factor would be 1.04 (i.e. the SIPP analysis suggests that the average monthly number of WIC-eligible children when 12-month certification is fully in effect in all States is 4 percent higher than it would appear based only on annual income and program participation).

The factor used for the national eligibility estimation now takes into account the fact that many States have adopted 12-month certification periods.<sup>25</sup> For this year's WIC eligibility estimates for children, the annual-to-monthly factor is a type of weighted average across the 1.0 and 1.04 estimates. Each State is assigned a State-specific factor based on whether and when 12-month certification has been adopted. The 27 States (and the District of Columbia) that have not adopted the policy (or that adopted it too late for it to affect 2013 eligibility) are assigned a factor of 1.0, the 9 States that adopted the policy early enough for it to fully affect the entire year are assigned 1.04, and the remaining 14 States are assigned an intermediate factor depending upon how many months in 2013 were affected by the longer certification period. To generate a national-level factor, the factors of all States were averaged, with each factor being weighted by the State's share of eligible children (e.g., the factor of a State that had twice as many eligible children as another State would be weighted twice as much). The final result was a national-level factor of 1.02. Appendix E contains more details regarding the computation of this 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

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<sup>25</sup> Although States have had the option to adopt 12-month certification since 2011, relatively few States adopted the policy at a point that affected eligibility prior to 2013. Our analysis indicates that if States' decisions to adopt 12-month certification had been incorporated into the calculation of the annual-to-monthly adjustment factor for children used for 2012, it would have changed from 1.0 to 1.006. In other words, if the procedures described here had been followed for the 2012 estimates, our estimate of children's eligibility in 2012 would have been higher by 0.6 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 2013.

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 (75 percent of the year).<sup>26</sup> 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 infant as well as the other factors. A new mother can be certified to receive benefits for 12 months if she is breastfeeding and her infant is not receiving the food package for infants who are fully fed with formula. If the mother is not breastfeeding or her infant 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.

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<sup>26</sup> See Yelowitz (2002).

**Table 3: Steps and Sources for 2013 Estimates of WIC Eligibility of Pregnant and Postpartum Women, Using Data from the 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, and Census Bureau International Data Base**

<b>Step</b>	<b>Description</b>	<b>Sources for 2013 Updates to Estimates and Adjustment Factors</b>
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.
<i>For pregnant women:</i> 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.
<i>For postpartum mothers:</i> 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.	2013 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 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),<sup>27</sup> and the SIPP. Abbott Laboratories 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.<sup>28</sup> For 2013, for example, the IFS data showed 63.5 percent of WIC mothers breastfeeding in the hospital, and 29.1 percent breastfeeding at six months. Since estimates show that mothers who are eligible but not participating in WIC have higher rates of breastfeeding than WIC participants, the rates reported in the 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.

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 2013 and applying the same methods used for the U.S. population.<sup>29</sup> Since Puerto Rico accounts for 88 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

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<sup>27</sup> 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](http://www.cdc.gov/nchs/nhanes/about_nhanes.htm).

<sup>28</sup> 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.

<sup>29</sup> 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/](http://www.census.gov/acs/www/about_the_survey/puerto_rico_community_survey/).

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 2013 PRCS captures a combination of 2012 and 2013 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 2013 to estimate the number of additional infants and children in the other island territories made eligible through adjunctive eligibility.

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 2013.<sup>30</sup> Like the 2013 PRCS, the 2013 ACS captures a combination of 2012 and 2013 income. This is not ideal for estimation of 2013 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 is 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.<sup>31</sup> For each State, the

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<sup>30</sup> ACS documentation is available on the Census Bureau website, [http://www.census.gov/acs/www/about\\_the\\_survey/american\\_community\\_survey/](http://www.census.gov/acs/www/about_the_survey/american_community_survey/).

<sup>31</sup> See Ruggles et al. (2010).

numbers of infants and children who are income-eligible or adjunctively-eligible for WIC (enrolled in SNAP, TANF, or public health insurance<sup>32</sup>) 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. Three of the adjustments—the population adjustments, the annual-to-monthly adjustment for children, and the breastfeeding adjustments—use State-specific data. However, the same annual-to-monthly adjustment for infants and the same nutritional risk adjustment are used for all the States. 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.

The annual-to-monthly adjustment for children’s eligibility varies across the States as described earlier in the discussion of the annual-to-monthly adjustment at the national level. In brief, the factor is 1.0 in States that have not adopted 12-month certification (or that adopted it too late for it to affect 2013 eligibility), 1.04 in States that adopted the change early enough to be fully in affect in all months of 2013, and between 1.0 and 1.04 in other States, depending on the exact point of implementation.

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. 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. For example, in 2013 the in-hospital breastfeeding rate for all infants (not just infants enrolled in WIC) ranged from 49 percent in Mississippi to 91 percent in Alaska according to the IFS (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

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<sup>32</sup> 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.

households throughout the year and asks about income in the twelve months prior to the interview.<sup>33</sup> Consequently, the ACS is less likely to detect increases in eligibility as the economy falters or decreases in eligibility when the economy improves.

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

We calculate State shares for each subgroup, which are applied to the CPS-ASEC national estimates for each subgroup. This produces estimates by subgroup at the FNS regional level (by summing the States within each FNS Region) and total WIC eligibility estimates at the State level. While estimates for subgroups 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. However, starting with this report, State-level estimates are shown for the two aggregate subgroups "Children" and "Infants and Women".<sup>34</sup>

## National Eligibility Estimates: 2013

This section presents the 2013 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 territories. Total WIC eligibility results for 2013 are compared with 2012 eligibility estimates.

Table 4 shows that 14.189 million individuals are estimated to have been eligible for WIC in the average month of CY 2013 across the fifty States, the District of Columbia, Puerto Rico, and the four other island territories.<sup>35</sup> 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 14.7 million.<sup>36</sup>

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<sup>33</sup> Respondents provide their income over the 12 months preceding the month they are surveyed; households surveyed in January 2013 thus provided their 2012 income, households surveyed in July 2013 provided their income from July 2012 through June 2013, and so on.

<sup>34</sup> By aggregating subgroups and using 3-year averages, the reliability of the estimates was improved enough for publication.

<sup>35</sup> Table 4 provides unrounded eligibility estimates for consistency with Table 5, which shows the precise impact of each adjustment.

<sup>36</sup> See Table 16 for the statistical information that underlies the computation of this confidence interval.

**Table 4: Estimates of the Total Average Monthly Number of Individuals Eligible for WIC by Participant Group, CY 2013**

*NOTE: This table includes estimates for the territories*

<b>Participant Group</b>	<b>2013</b>		
	<b>Eligibles</b>	<b>Non-Eligibles<sup>a</sup></b>	<b>Total<sup>b</sup></b>
Infants	2,387,223	1,509,466	3,896,689
Total Children Ages 1-4	9,052,810	7,133,308	16,186,118
Children Age 1	2,285,392	1,780,681	4,066,073
Children Age 2	2,280,738	1,720,260	4,000,997
Children Age 3	2,224,854	1,845,285	4,070,139
Children Age 4	2,261,826	1,787,082	4,048,908
Pregnant Women	1,228,252		
Postpartum Breastfeeding Women	826,003		
Postpartum Non-Breastfeeding Women	694,264		
All Postpartum Women	1,520,267		
<b>Total WIC Eligibles</b>	<b>14,188,552</b>		

Source: 2014 CPS-ASEC for U.S. estimate, 2013 PRCS and Census International Data Base for territories

Notes:

<sup>a</sup>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.

<sup>b</sup>The total numbers of infants and children represent the sum of the March 2014 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 2013 PRCS and annual Census Bureau population estimates.

The overall estimate includes 2.387 million infants (61 percent of all infants in the United States and territories) and 9.053 million children age 1 through 4 (56 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, 1.228 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 0.826 million women eligible as breastfeeding mothers in



the average month of CY 2013, and an estimated 0.694 million eligible non-breastfeeding postpartum women.

As described above, the national totals are derived from numerous factors. The results of each step in the estimation process are presented in Table 5. The estimation process begins by adjusting the counts of the number of infants and children from the 2014 CPS-ASEC (reflecting income in CY 2013) 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 3.784 to 3.852 million (1.8 percent) while the total number of children is adjusted downward from 16.081 million to 16.001 million (0.5 percent).<sup>37</sup> Overall, the population of infants and children through age 4, as measured in the CPS-ASEC data, is almost unchanged, decreasing by only 0.1 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 2013, the CPS-ASEC data (with adjusted weights) include 1.620 million infants and 6.826 million children with annual family income under that level. Adjunctive eligibility due to enrollment in SNAP, TANF, or Medicaid increases both the infant and young children eligibility estimate by 29 percent (2.083 million compared with 1.620 million, and 8.813 million compared with 6.826 million, respectively). Medicaid accounted for most of those adjunctively eligible for WIC in 2013 (0.330 million infants and 1.548 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,<sup>38</sup> as many States have expanded eligibility for Medicaid to income levels above 185 percent of poverty, with some Medicaid income limits for infants and young children at 300 percent of poverty.<sup>39</sup> The gross income limit for SNAP is generally 130 percent of poverty, but it may be higher in States offering broad-based categorical eligibility<sup>40</sup>. Income limits for TANF are much lower, but a few States have earned income disregard policies that temporarily allow higher incomes.<sup>41</sup>

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<sup>37</sup> Note that because the weight adjustments use four years of data, the adjusted weighted figures do not exactly match Census Bureau population estimates for 2013.

<sup>38</sup> In 2013, 28.0 million non-disabled children (age 18 and under) were enrolled in Medicaid in June, 20.9 million children (under age 18) were enrolled in SNAP sometime during the fiscal year, and 3.0 million children (generally age 18 and under) received TANF benefits in the average month. Medicaid caseload data are from Kaiser (2014), SNAP caseload data are from Gray (2014), and TANF caseload data are from Administration for Children and Families (2013).

<sup>39</sup> 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. There were eight States with a Medicaid income limit for infants at or above 250 percent of poverty, and six States with a limit at or above 250 percent of poverty for young children. (See Table 1 in Heberlein, Brooks, Artiga, and Stephens, 2013).

<sup>40</sup> See U.S. Department of Agriculture (2012).

<sup>41</sup> See Table IV.A.6 in Huber, Kassabian, and Cohen (2014).

**Table 5: Adjustments for Calculating the Average Monthly Number of Individuals Eligible for WIC by Participant Group, CY 2013**

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 2014 CPS-ASEC	3,783,867	4,111,128	3,922,860	4,022,959	4,024,346	16,081,293				19,865,160
Number (non-U.S. Territory) after adjustment for CPS under/over count	3,852,294	4,021,009	3,955,813	4,022,959	4,001,332	16,001,114				19,853,408
Number with annual income <185% FPG	1,619,876	1,737,479	1,734,875	1,676,574	1,676,922	6,825,850				8,445,726
Number of additional people adjunctively eligible above 185% FPG <sup>a</sup>	463,270	487,517	486,151	488,916	524,936	1,987,520				2,450,790
Through SNAP	133,034	83,224	83,858	75,880	172,633	415,596				548,630
Through TANF	486	498	8,022	8,128	7,151	23,800				24,286
Through Medicaid	329,750	403,794	394,270	404,908	345,152	1,548,124				1,877,874
Total number income and adjunctively eligible	2,083,146	2,224,996	2,221,026	2,165,490	2,201,858	8,813,370				10,896,516
Number after monthly income adjustment	2,416,450	2,269,496	2,265,446	2,208,800	2,245,895	8,989,637				11,406,087
<b>Total Eligibles - Number after adjustment for nutritional risk (infants and children)</b>	2,343,956	2,246,801	2,242,792	2,186,712	2,223,436	8,899,741				11,243,697
Starting point for estimates of women is fully eligible infants							2,343,956	2,343,956	2,343,956	7,031,868
Number after adjustment for length of pregnancy and income of woman during pregnancy							1,248,157			1,248,157
Number after adjustment for multiple births and infant deaths							1,243,289	2,334,815	2,334,815	5,912,918
Number after adjustment for breastfeeding								811,032	681,681	1,492,713
<b>Total Eligibles - Number after adjustment for nutritional risk (pregnant and postpartum women)</b>							1,205,990	811,032	681,681	2,698,703
<b>CY 2013 - Eligibles in the U.S. Territories</b>										
<b>Total Eligibles in the U.S. Territories</b>	43,267	38,591	37,946	38,142	38,390	153,069	22,262	14,971	12,583	246,152
Source: 2013 PRCS and Census International Data Base										
<b>Total Eligibles - States and Territories U.S. Total</b>	<b>2,387,223</b>	<b>2,285,392</b>	<b>2,280,738</b>	<b>2,224,854</b>	<b>2,261,826</b>	<b>9,052,810</b>	<b>1,228,252</b>	<b>826,003</b>	<b>694,264</b>	<b>14,188,552</b>

See Tables 1 and 3 for adjustment factors applied.

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

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 increases by 2 percent. 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 2013 is estimated at 2.344 million for infants and 8.900 million for children; with the territories included, 2.387 million infants and 9.053 million children are estimated to be eligible for WIC.

The estimates for pregnant women begin from the final estimate of 2.344 million WIC-eligible infants in the U.S. in the average month of CY 2013. 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 1.206 million women eligible for WIC during pregnancy in the U.S. (excluding the territories) during the average month of CY 2013.

The estimates for postpartum women—breastfeeding and non-breastfeeding—also begin from the estimate of 2.344 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 2013 is 0.811 million, and the estimate of postpartum non-breastfeeding women is 0.682 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 2013 (Table 6). Focusing first on basic demographics, the WIC-eligible infants and children are evenly divided between boys and girls, and are predominantly white (65 percent of infants and 66 percent of children), with most of the remainder being black (20 percent of infants and 22 percent of children); other WIC-eligible children report another race or multiple races. Small sample size prevents the “other” category from being subdivided. Thirty-five percent of the WIC-eligible infants and children are Hispanic (36 percent of infants and 35 percent of children).

**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 2014 CPS-ASEC by Demographic Characteristics, CY 2013**

**Table 6: Estimates of the Average Monthly Number of Infants and Children (Ages 1-4) Eligible for WIC by Income and Adjunctive Eligibility in the 2014 CPS-ASEC by Demographic Characteristics, CY 2013**

Fully adjusted weights<sup>a</sup>

Demographic Characteristics	WIC-Eligible Infants			WIC-Eligible Children Age 1 to 4			WIC-Eligible Children Age 0 to 4		
	Family income <185% FPG <sup>b</sup>	Adjunct- ively eligible <sup>c</sup>	Total	Family income <185% FPG <sup>b</sup>	Adjunct- ively eligible <sup>c</sup>	Total	Family income <185% FPG <sup>b</sup>	Adjunct- ively eligible <sup>c</sup>	Total
	Total	1,822,685	521,272	2,343,957	6,892,743	2,006,998	8,899,741	8,715,427	2,528,270
Gender (% distribution)									
Male	51.0	38.0	48.1	50.6	52.9	51.1	50.7	49.8	50.5
Female	49.0	62.0	51.9	49.4	47.1	48.9	49.3	50.2	49.5
Race (% distribution)									
White	63.4	70.6	65.0	65.2	69.1	66.1	64.8	69.4	65.9
Black	22.1	12.3	19.9	22.8	17.0	21.5	22.7	16.0	21.2
Other	14.5	17.1	15.1	11.9	13.9	12.4	12.5	14.6	12.9
Ethnicity (% distribution)									
Hispanic	37.4	31.3	36.0	36.7	30.6	35.3	36.8	30.7	35.4
Non-Hispanic	62.6	68.7	64.0	63.3	69.4	64.7	63.2	69.3	64.6
Living arrangement (% distribution)									
Two-parent family	60.8	73.9	63.7	55.1	67.1	57.8	56.3	68.5	59.1
Single-parent family	34.0	23.6	31.7	39.8	26.2	36.7	38.6	25.7	35.7
No-parent family	5.1	2.4	4.5	5.0	6.7	5.4	5.1	5.8	5.2
Related non-parent caretaker	2.3	2.4	2.3	3.2	6.7	4.0	3.0	5.8	3.6
Unrelated non-parent caretaker	2.8	0.0	2.2	1.8	0.0	1.4	2.1	0.0	1.6
Number of people in household (% distribution)									
2	5.3	1.6	4.5	5.7	4.0	5.3	5.6	3.5	5.1
3	24.1	26.5	24.6	18.4	25.5	20.0	19.6	25.7	21.0
4	24.4	26.9	24.9	29.8	29.2	29.6	28.6	28.7	28.7
5	21.1	21.6	21.2	23.0	20.5	22.4	22.6	20.7	22.2
6 or more	25.1	23.4	24.7	23.2	20.8	22.6	23.6	21.3	23.1
Number with working parent(s) (% distribution)	53.4	85.9	60.6	66.0	86.9	70.7	63.4	86.7	68.6
Annual family income relative to poverty <sup>b</sup> (% distribution)									
Less than 50% FPL	30.8	0.0	23.9	26.9	0.0	20.8	27.7	0.0	21.5
50% to <100% FPL	27.3	0.0	21.3	26.7	0.0	20.7	26.9	0.0	20.8
100% to <130% FPL	17.2	0.0	13.3	17.2	0.0	13.3	17.2	0.0	13.3
130% to <185% FPL	23.9	1.4	18.9	28.5	2.2	22.6	27.6	2.1	21.8
185% to <200% FPL	0.8	14.7	3.9	0.5	9.0	2.4	0.6	10.2	2.7
200% to <250% FPL	0.0	21.6	4.8	0.1	27.8	6.4	0.1	26.5	6.0
250% FPL and above	0.0	62.3	13.9	0.0	61.0	13.7	0.0	61.2	13.8
Benefit receipt (% distribution)									
No benefit receipt	19.4	0.0	15.1	23.4	0.0	18.1	22.6	0.0	17.5
SNAP, TANF, & Medicaid	7.6	2.1	6.4	6.8	1.4	5.6	7.0	1.5	5.8
SNAP & TANF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SNAP & Medicaid	40.6	20.1	36.1	38.2	15.8	33.1	38.7	16.7	33.8
TANF & Medicaid	0.4	0.1	0.3	0.4	1.2	0.6	0.4	1.0	0.5
SNAP only	5.9	6.5	6.0	4.6	3.8	4.4	4.9	4.3	4.8
TANF only	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medicaid only	26.1	71.2	36.1	26.5	77.9	38.1	26.4	76.5	37.7

Source: 2014 CPS-ASEC

Notes:

FPG - Federal Poverty Guidelines

FPL - Federal Poverty Level

<sup>a</sup> These estimates are tabulated from the fully adjusted person weights on the 2014 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 Tables A.3a/b and A.6 for the adjustment factors.

<sup>b</sup> 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.

<sup>c</sup> Infants and children adjuntively 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.

<sup>d</sup> This table does not include territories.

Turning to the family characteristics of the eligible infants and children, most live in two-parent families (64 percent of infants and 58 percent of children). Most of the remainder live in single-parent families (32 percent of infants and 37 percent of children), and a small portion live with a non-parent caretaker (5 percent overall). Large households are relatively common, with nearly 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 (61 percent of infants and 71 percent of children). Among infants and children who are estimated to be eligible based on annual income, 55 percent live in families with annual incomes below the poverty threshold.<sup>42</sup>

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 (69 percent of adjunctively-eligible infants and children compared with 56 percent of those who are income-eligible) and more likely to have working parents (87 percent vs. 63 percent).

Among the infants and children who are only eligible through adjunctive eligibility rules, 12 percent are in families with income under 200 percent of the poverty threshold, 27 percent have income from 200 to under 250 percent of the poverty threshold, and 61 percent live in families that have annual income of 250 percent of the poverty threshold and higher.<sup>43</sup> There are various reasons for the relatively-high annual income levels among adjunctively-eligible infants and children. One reason is that the Medicaid income limit for infants and children is as high as 300 percent of poverty in some States.<sup>44</sup> Another reason is that many lower-income families experience changes in income during a year, so a family could have enrolled in TANF, SNAP, or Medicaid at a point of lower income, even if annual income is somewhat higher. Further, the programs that confer adjunctive eligibility all use various types of income disregards, and they do not necessarily count the income of all members of the family as defined by the WIC program. 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.

## Territories

We computed the number of infants and children (age 1 to 4) residing in Puerto Rico from the 2013 PRCS and adjusted the number for the 2013 Census under/over count (Table 7). Using the adjusted population counts, 83 percent of infants (31,935) as well as 82 percent of children (131,369) 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 six percent for infants (1,853) and by four percent for children (5,304). Given the high proportions of

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<sup>42</sup> 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).

<sup>43</sup> Note that while 22.5 percent of all 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).

<sup>44</sup> See Heberlein et al. (2013).

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.

As with the national estimates, the annual-to-monthly adjustment factors are applied to the direct estimates from the 2013 PRCS to take into account the impact of certification periods and changes during a year in income and program participation. 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-based 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 37,997 infants (99 percent of the total adjusted infant population) and 135,306 children age 1 to 4 (84 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 56 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 2013 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 2013. That information implies roughly an increase of 14 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 86 percent of infants and 74 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 5,270 (86 percent of total infants), and the average monthly number of eligible children is 17,763 (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 (43,267, including Puerto Rico and the other island territories). After adjustments for length of pregnancy, income during pregnancy, and multiple births, we estimate that in 2013 across the territories there were 22,262 WIC-eligible pregnant women, 14,971 WIC-eligible postpartum breastfeeding women, and 12,583 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 2013**

<b>Puerto Rico</b>	<b>Infants</b>	<b>Children Age 1</b>	<b>Children Age 2</b>	<b>Children Age 3</b>	<b>Children Age 4</b>	<b>Total Children Ages 1-4</b>	<b>Pregnant Women</b>	<b>Postpartum Breastfeeding Women</b>	<b>Postpartum Non- Breastfeeding Women</b>	<b>Total</b>
Total number of infants/children in the 2013 PRCS	35,580	36,071	38,028	43,303	46,369	163,771				199,351
Number after adjustment for PRCS under/over count	38,288	38,994	39,180	41,225	41,658	161,057				199,345
Number with annual income <185% FPG	31,935	33,301	32,696	32,361	33,011	131,369				163,304
Number of additional people adjunctively eligible above 185% FPG <sup>a</sup>	1,835	1,132	1,134	1,705	1,332	5,304				7,138
Through SNAP	1,208	130	449	620	520	1,719				2,927
Through TANF	0	0	36	0	0	36				36
Through Medicaid	626	1,002	649	1,085	812	3,549				4,175
Total number income and adjunctively eligible	33,769	34,433	33,831	34,066	34,343	136,673				170,442
Number after monthly income adjustment	39,173	34,433	33,831	34,066	34,343	136,673				175,845
		33,758	33,167	33,398	33,670	133,993				
<b>Total Eligibles - Number after adjustment for nutritional risk (infants and children)</b>	37,997	34,089	33,492	33,725	34,000	135,306				173,304
Starting point for estimates of women is fully eligible infants							37,997	37,997	37,997	113,992
Number after adjustment for length of pregnancy and income of woman during pregnancy							20,234			20,234
Number after adjustment for multiple births and infant deaths							20,155	37,849	37,849	95,853
Number after adjustment for breastfeeding								13,147	11,051	24,198
<b>Total Eligibles - Number after adjustment for nutritional risk (pregnant and postpartum women)</b>							19,550	13,147	11,051	43,748

Continued on next page

**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 2013 (continued)**

<b>Other Island Territories</b>	<b>Infants</b>	<b>Children Age 1</b>	<b>Children Age 2</b>	<b>Children Age 3</b>	<b>Children Age 4</b>	<b>Total Children Ages 1-4</b>	<b>Pregnant Women</b>	<b>Postpartum Breastfeeding Women</b>	<b>Postpartum Non-Breastfeeding Women</b>	<b>Total</b>
Total number of infants/children in the Other Island Territories Age 0-4	6,107	6,070	6,004	5,955	5,918	23,947				30,054
Number after the other islands full-eligibility factor	4,684	4,548	4,499	4,462	4,434	17,942				22,626
Number after monthly income adjustment	5,433	4,548	4,499	4,462	4,434	17,942				23,376
<b>Total Eligibles - Number after adjustment for nutritional risk (infants and children)</b>	5,270	4,503	4,454	4,417	4,390	17,763				23,033
Starting point for estimates of women is fully eligible infants							5,270	5,270	5,270	15,810
Number after adjustment for length of pregnancy and income of woman during pregnancy							2,806			2,806
Number after adjustment for multiple births and infant deaths							2,795	5,250	5,250	13,294
Number after adjustment for breastfeeding								1,824	1,533	3,356
<b>Total Eligibles - Number after adjustment for nutritional risk (pregnant and postpartum women)</b>							2,712	1,824	1,533	6,068
<b>Total Eligibles - U.S. Territories Total</b>	<b>43,267</b>	<b>38,591</b>	<b>37,946</b>	<b>38,142</b>	<b>38,390</b>	<b>153,069</b>	<b>22,262</b>	<b>14,971</b>	<b>12,583</b>	<b>246,152</b>

See Tables 1 and 3 for adjustment factors applied.

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

Notes:

FPG = Federal poverty guidelines



## Comparing 2013 to 2012

Overall, the number of people estimated as eligible for WIC in 2013 is 1.0 percent higher than the number estimated as eligible in 2012 (Table 8). Estimated eligibility increased for children and decreased for the other subgroups. However, from a statistical standpoint, we cannot rule out the possibility that these changes are all due solely to sampling variability in the CPS-ASEC survey data.<sup>45</sup>

Changes in the size of the eligible population occur as the net result of two other changes – changes in total population size and change in the eligibility rate (i.e. the percentage of the total population estimated to be eligible). Table 8 displays the *percentage* changes in population size, estimated eligibility, and the eligibility rate (rather than *percentage point* changes) to aid in decomposing the changes in the eligibility estimates. For each subgroup, the percentage change in total eligibles is equal to the starting-point number of eligibles (in 2012), increased (or decreased) by the percentage change in total population, and increased (or decreased) again by the percentage change in the eligibility rate. Thus, for each change in eligibility, the relative contributions of the population change and the eligibility rate change can be easily observed.

In the case of infants, from 2012 to 2013, the total population of infants as defined by these procedures decreased by 1.1 percent and the eligibility rate declined by 0.2 percent, leading to a 1.4 percent drop in the estimate of WIC-eligible infants.<sup>46</sup> The stability in the eligibility rate may be due to a combination of factors working in different directions. In particular, the unemployment rate fell slightly from 8.1 percent in 2012 to 7.4 percent in 2013,<sup>47</sup> which would tend to decrease eligibility; but there was increased enrollment in programs that led to somewhat more infants being adjunctively eligible.<sup>48</sup>

For children, the results worked out differently. The total population was almost unchanged, but the estimated eligibility rate increased by 2.6 percent, leading to a 2.6 percent increase in the eligibility estimate. Most of the increase in the children's eligibility rate came from a policy change: the fact that many States have moved from 6-month to 12-month certification. As discussed earlier, we are capturing the increased implementation of 12-month certification through an increase in the annual-to-monthly adjustment factor for children (from 1.0 in the 2012 estimates to a national level of 1.02 for the 2013 estimates). In the absence of that change, we would have estimated an increase of 0.6 percent in children's eligibility from 2012 to 2013.

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<sup>45</sup> 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 women are true changes, rather than being due to sampling variability in the surveys.

<sup>46</sup> The Census Bureau's most recent postcensal population estimates for March 2014 vs. March 2013 show somewhat different changes in the infant and child populations than shown in Table 8— a 0.01 percent increase in the infant population and a 0.26 percent decline 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.

<sup>47</sup> See the Bureau of Labor Statistics website, <http://data.bls.gov>, series ID LNU04000000.

<sup>48</sup> For example, the average SNAP caseload increased from 46.6 million in 2012 to 47.6 million in 2013. See the Food and Nutrition Service website, <http://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap>, "Participation and Costs, 1969-2013."

Among women, the estimated changes varied across pregnant women, breastfeeding mothers, and non-breastfeeding postpartum women. The 1.4 percent decrease in the eligibility estimate for pregnant women follows the decrease among infants since this estimate begins with the number of eligible infants and does not use any year-specific adjustments. For postpartum women, the eligibility estimate also begins with the infant eligibility estimate, but changes in these estimates are closely related to changes in the assumptions about breastfeeding—how many WIC-eligible mothers begin to breastfeed and how long they continue. According to the IFS survey (Figure 1), the in-hospital breastfeeding rate for WIC mothers increased from 61 percent in 2012 to 64 percent in 2013, but the percentage of WIC mothers breastfeeding at six months decreased from 31 percent in 2012 to 29 percent in 2013. Since more women are breastfeeding in the first six months (when they would be potentially eligible for WIC regardless of breastfeeding), fewer are counted as non-breastfeeding mothers, and the estimated eligibility for that group falls by 4.1 percent. The combined effects of more women starting to breastfeed, but stopping sooner, leads to an estimated 1.6 percent reduction in WIC eligibility for breastfeeding postpartum women. Considering both the breastfeeding and non-breastfeeding women in combination, estimated eligibility for all postpartum women is estimated to be 2.8 percent lower than in 2012.

It is worth noting in Figure 1 that the WIC administrative data show more modest changes in breastfeeding than shown in the IFS data. According to the administrative data, while the portion of WIC-recipient mothers who receive a breastfeeding package has trended upwards (from 43 percent in 2000 to 50 percent in 2013), the year-to-year changes have been gradual and generally in the same direction. On the other hand, the IFS data show more year-to-year variation in both the magnitude and direction of the changes.<sup>49</sup> Given the importance of the breastfeeding rates to the eligibility estimates for postpartum mothers, more analysis of these data is warranted.

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<sup>49</sup> The National Immunization Survey (NIS), conducted by the Centers for Disease Control, shows somewhat different breastfeeding information. For example, the IFS statistic that 42.8 percent of all mothers breastfed at six months in 2013 is lower than the six-month breastfeeding rate of 49.4 percent for 2011 from the NIS, (See the National Immunization Survey webpage, “Rates of Any and Exclusive Breastfeeding by Socio-demographics Among Children Born in 2011,” [http://www.cdc.gov/breastfeeding/data/nis\\_data/rates-any-exclusive-bf-socio-dem-2011.htm](http://www.cdc.gov/breastfeeding/data/nis_data/rates-any-exclusive-bf-socio-dem-2011.htm).) Also, the NIS 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 2012 and 2013**

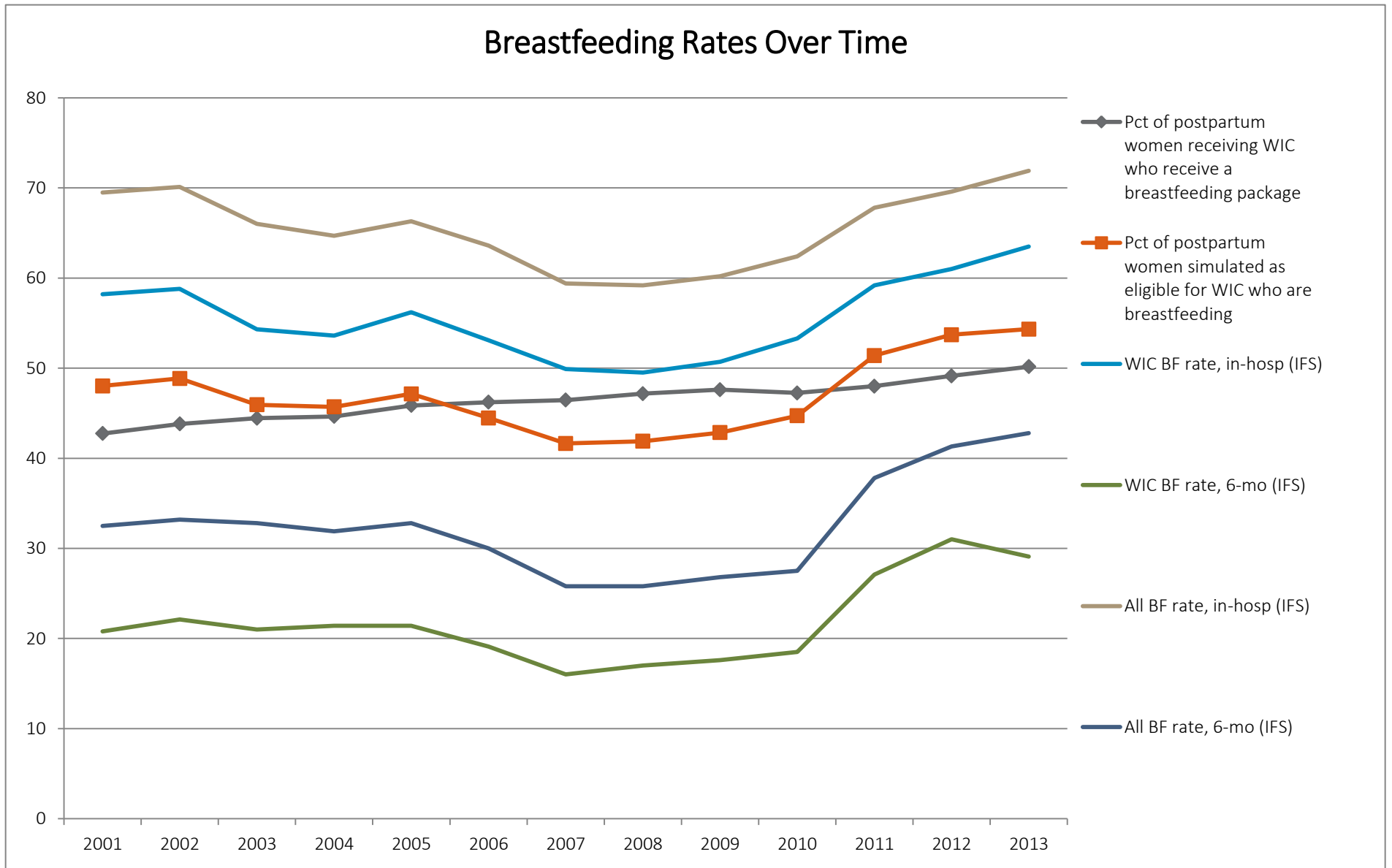
*NOTE: This table includes estimates for the territories.*

Participant Group	Total			Total Eligibles			Eligibility Rate			Coverage Rate		
	2013	2012	Percent Change	2013	2012	Percent Change	2013	2012	Percent Change	2013	2012	Percent Change
Infants	3,896,689	3,941,665	-1.1%	2,387,223	2,420,597	-1.4%	61.3	61.4	-0.2%	84.4	85.1	-0.8%
Total Children Ages 1-4	16,186,118	16,183,647	0.0%	9,053,165	8,823,888	2.6%	55.9	54.5	2.6%	49.8	53.4	-6.8%
Children Age 1	4,066,073	4,009,860	1.4%	2,285,482	2,185,171	4.6%	56.2	54.5	3.1%	68.8	75.2	-8.6%
Children Age 2	4,000,997	4,045,462	-1.1%	2,280,827	2,196,651	3.8%	57.0	54.3	5.0%	50.0	54.3	-7.9%
Children Age 3	4,070,139	4,046,536	0.6%	2,224,943	2,232,286	-0.3%	54.7	55.2	-0.9%	47.3	49.3	-4.1%
Children Age 4	4,048,908	4,081,789	-0.8%	2,261,914	2,209,780	2.4%	55.9	54.1	3.2%	32.9	35.2	-6.6%
Pregnant Women				1,228,252	1,245,423	-1.4%				68.4	70.9	-3.6%
All Postpartum Women				1,520,267	1,563,454	-2.8%				77.8	77.0	1.1%
Breastfeeding Women				826,003	839,736	-1.6%				71.9	70.4	2.0%
Non-Breastfeeding Women				694,264	723,718	-4.1%				84.9	84.6	0.4%
<b>Total WIC Eligibles</b>				<b>14,188,907</b>	<b>14,053,362</b>	<b>1.0%</b>				<b>60.2</b>	<b>63.1</b>	<b>-4.5%</b>

Sources: Eligibility estimates use information from the March 2013 and March 2014 CPS; 2004 and 2008 SIPP panels; 2001-2002, 2003-2004, and 2005-2006 NHANES; and 2012 and 2013 IFS. Coverage rates use data on WIC participants from WIC administrative data; participant data by exact year of age for young children is estimated using enrollment data from Johnson et al. (2013), Figure E.1.

Note: Changes in the number of eligibles between 2012 and 2013 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: 2013

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; measures of precision of the State and regional eligibility estimates are provided in the section following this one.

### 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 21 percent of all WIC eligibles, each), while the Northeast and Mountain Plains regions have the fewest WIC-eligible individuals (about nine percent and seven 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).

**Table 9: Distribution of WIC Eligibles by FNS Region for each Participant Group, CY 2013**

	Infants	Children (age 1 to 4)	Pregnant Women	All Postpartum Women	Total
<b>Distribution of Eligibles</b>					
Northeast	8.8%	8.9%	8.8%	9.3%	8.9%
Mid-Atlantic	11.6%	11.3%	11.6%	11.4%	11.4%
Southeast	21.1%	21.3%	21.1%	20.5%	21.1%
Midwest	14.7%	14.7%	14.7%	14.2%	14.7%
Southwest	15.8%	15.7%	15.8%	15.1%	15.7%
Mountain Plains	7.5%	7.4%	7.5%	7.4%	7.4%
Western	20.5%	20.7%	20.5%	22.2%	20.8%
<b>Total</b>	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, Census International Data Base

Table 10: Distribution of WIC Eligibility by State and FNS Region, CY 2013

	Percent Share of National WIC Eligibles		Percent Share of National WIC Eligibles
<b>State<sup>a</sup></b>			
Alabama	1.6%	New York	5.7%
Alaska	0.2%	North Carolina	3.3%
Arizona	2.2%	North Dakota	0.2%
Arkansas	1.1%	Ohio	3.3%
California	13.0%	Oklahoma	1.5%
Colorado	1.4%	Oregon	1.2%
Connecticut	0.8%	Pennsylvania	3.2%
Delaware	0.3%	Puerto Rico	1.5%
D.C.	0.2%	Rhode Island	0.3%
Florida	6.2%	South Carolina	1.6%
Georgia	3.7%	South Dakota	0.3%
Hawaii	0.4%	Tennessee	2.2%
Idaho	0.6%	Texas	10.5%
Illinois	3.7%	Utah	1.0%
Indiana	2.1%	Vermont	0.2%
Iowa	0.9%	Virginia	2.0%
Kansas	0.9%	Washington	2.1%
Kentucky	1.4%	West Virginia	0.6%
Louisiana	1.7%	Wisconsin	1.4%
Maine	0.3%	Wyoming	0.2%
Maryland	1.5%		
Massachusetts	1.4%	<b>FNS Region<sup>b</sup></b>	
Michigan	2.9%	Northeast	8.9%
Minnesota	1.2%	Mid-Atlantic	11.4%
Mississippi	1.2%	Southeast	21.1%
Missouri	1.8%	Midwest	14.7%
Montana	0.3%	Southwest	15.7%
Nebraska	0.6%	Mountain Plains	7.4%
Nevada	0.8%	Western	20.8%
New Hampshire	0.3%		
New Jersey	2.1%	<b>Total</b>	100.0%
New Mexico	0.9%		

Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, Census International Data Base

Notes:

<sup>a</sup> State and regional eligibility estimates include those eligible for WIC via Indian Tribal Organizations.

<sup>b</sup> 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 61.3 percent of infants and 55.9 percent of young children were eligible for WIC in the average month of 2013. However, at the regional level, the percentage of infants who appear eligible for WIC varies from 54.6 percent in the Mountain-Plains to 68.9 percent in the Southwest; and the percentage of children who appear eligible for WIC varies from 48.6 percent in the Mountain Plans to 62.5 percent in the Southeast (Table 11).

Table 11: WIC Eligibles by FNS Region and Participant Group, CY 2012 and CY 2013

	Infants	Children (age 1 to 4)	Pregnant Women	All Postpartum Women	Total
<b>Eligibility Rate, 2013</b>					
Northeast	55.0%	52.0%	37.9%	37.0%	48.7%
Mid-Atlantic	55.9%	50.1%	38.5%	35.2%	47.5%
Southeast	68.1%	62.5%	46.9%	42.3%	58.7%
Midwest	57.5%	52.0%	39.6%	35.5%	49.1%
Southwest	68.9%	62.0%	47.5%	41.9%	58.6%
Mountain Plains	54.6%	48.6%	37.6%	34.4%	46.3%
Western	61.5%	57.1%	42.4%	42.7%	54.1%
<b>Total</b>	<b>61.3%</b>	<b>55.9%</b>	<b>42.2%</b>	<b>39.2%</b>	<b>52.8%</b>
<b>Eligibility Rate, 2012</b>					
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%
<b>Total</b>	<b>61.4%</b>	<b>54.5%</b>	<b>42.3%</b>	<b>39.8%</b>	<b>52.1%</b>
<b>Percent Change in Eligibility Rate, 2013 vs 2012</b>					
Northeast	2.4%	3.7%	2.4%	7.2%	3.8%
Mid-Atlantic	0.1%	1.8%	0.1%	-0.2%	1.1%
Southeast	-1.9%	3.6%	-1.9%	-1.4%	1.7%
Midwest	-2.2%	2.1%	-2.2%	-8.2%	-0.2%
Southwest	1.7%	1.9%	1.7%	-2.4%	1.5%
Mountain Plains	0.5%	-0.4%	0.5%	-1.8%	-0.3%
Western	0.2%	3.4%	0.2%	-0.6%	2.2%
<b>Total</b>	<b>-0.2%</b>	<b>2.6%</b>	<b>-0.2%</b>	<b>-1.6%</b>	<b>1.4%</b>

Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, Census International Data Base

WIC eligibility rates for infants and pregnant women appeared to increase between 2012 and 2013 in most of the regions, but decreased slightly overall. The degree of change varied across the regions. For infants, while the national WIC eligibility rate decreased by 0.2 percent between 2012 and 2013, the regional changes ranged from a 2.4 percent increase in the Northeast to a reduction of 2.2 percent in the Midwest. 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. For postpartum women, the eligibility rate decreased overall by 1.6 percent. At the regional level, the eligibility rate decreased 8.0 percent in the Midwest, while rising 7.0 percent in the Northeast. The eligibility rate for children rose by 2.6 percent, increasing in all but one of the regions – the rate decreased by 0.4 percent in the Mountain Plains. Among the other regions, the increase in the children’s eligibility rate ranged from 1.9 percent in the Southwest to 3.7 percent in the Northeast. Changes in the children’s eligibility rate between the two years were likely due in part to the extent to which States in each region have adopted 12-month certification.

## **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 participating<sup>50</sup> in the WIC program divided by the number eligible (these are alternately referred to as participation rates). For the first time in this series, State eligibility estimates are provided separately for children and for the combined group of infants and women.

### **WIC Coverage Rates in 2013**

At the national level, the WIC coverage rate for 2013 is estimated at 60.2 percent overall (Table 12), with the highest rate for infants (84.4 percent of eligible infants appear to be enrolled in the program), and the lowest for children (49.8 percent). Among eligible women, postpartum women appear to have a higher coverage rate than pregnant women, with 77.8 percent of eligible postpartum women enrolled compared with 68.4 percent of eligible pregnant women.

The 2013 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 51.1 percent and highest in the Western region, at 70.4 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,

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<sup>50</sup> Although the terms “enrolled in WIC” and “participating in WIC” are often used interchangeably, there is a difference in what is measured. WIC participants are people on WIC who are receiving a food package (or are fully breastfeeding infants) in a given time period. This is usually the way that administrative data on WIC participation is presented, and this is the number used in this report to estimate coverage rates. On the other hand, WIC enrollees includes all WIC participants (i.e. those actively participating in WIC), as well as others who are enrolled in WIC but who are not currently participating (e.g. persons who did not pick up their vouchers for this month).



respectively). For example, the Northeast and Southwest have overall coverage rates similar to the national rate, but in the Southwest the rate for postpartum women is about 12 percentage points higher than the national rate, while in the Northeast the rate for pregnant women is about 4 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.

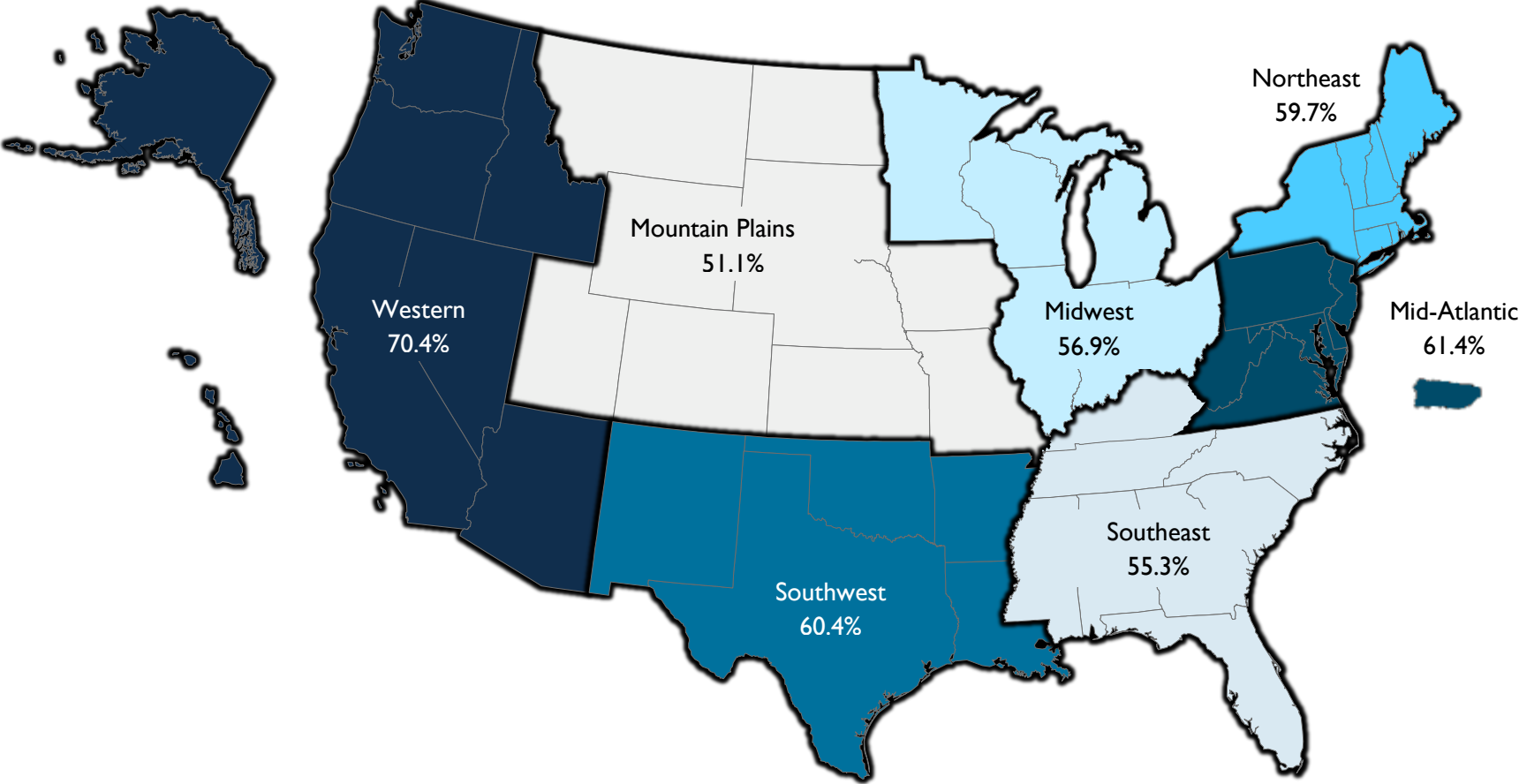
**Table 12: WIC Eligibles and Coverage Rates by FNS Region and Participant Group, CY 2013**

	<b>Infants</b>	<b>Children (age 1 to 4)</b>	<b>Pregnant Women</b>	<b>All Post-Partum Women</b>	<b>Total</b>
<b>Eligibles</b>					
Northeast	210,923	808,968	108,522	141,387	1,269,800
Mid-Atlantic	276,013	1,021,273	142,011	173,013	1,612,309
Southeast	503,271	1,925,207	258,938	311,182	2,998,599
Midwest	351,021	1,333,563	180,604	215,695	2,080,883
Southwest	378,331	1,424,024	194,655	229,032	2,226,042
Mountain Plains	179,453	666,546	92,330	112,709	1,051,038
Western	488,212	1,873,229	251,190	337,249	2,949,881
<b>Total</b>	<b>2,387,223</b>	<b>9,052,810</b>	<b>1,228,252</b>	<b>1,520,267</b>	<b>14,188,552</b>
<b>Participants</b>					
Northeast	173,775	409,956	69,790	105,054	758,576
Mid-Atlantic	232,644	532,768	93,724	130,573	989,709
Southeast	416,379	837,528	170,842	232,012	1,656,761
Midwest	298,936	608,755	122,818	153,120	1,183,628
Southwest	330,185	667,504	139,820	206,933	1,344,443
Mountain Plains	132,199	275,326	52,530	77,455	537,510
Western	431,612	1,176,399	190,296	278,082	2,076,389
<b>Total</b>	<b>2,015,732</b>	<b>4,508,236</b>	<b>839,820</b>	<b>1,183,228</b>	<b>8,547,016</b>
<b>Coverage Rates</b>					
Northeast	82.4%	50.7%	64.3%	74.3%	59.7%
Mid-Atlantic	84.3%	52.2%	66.0%	75.5%	61.4%
Southeast	82.7%	43.5%	66.0%	74.6%	55.3%
Midwest	85.2%	45.6%	68.0%	71.0%	56.9%
Southwest	87.3%	46.9%	71.8%	90.4%	60.4%
Mountain Plains	73.7%	41.3%	56.9%	68.7%	51.1%
Western	88.4%	62.8%	75.8%	82.5%	70.4%
<b>Total</b>	<b>84.4%</b>	<b>49.8%</b>	<b>68.4%</b>	<b>77.8%</b>	<b>60.2%</b>

Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, Census International Data Base, WIC Administrative Data

Figure 2: WIC Coverage Rate for All Participants by FNS Region, CY 2013

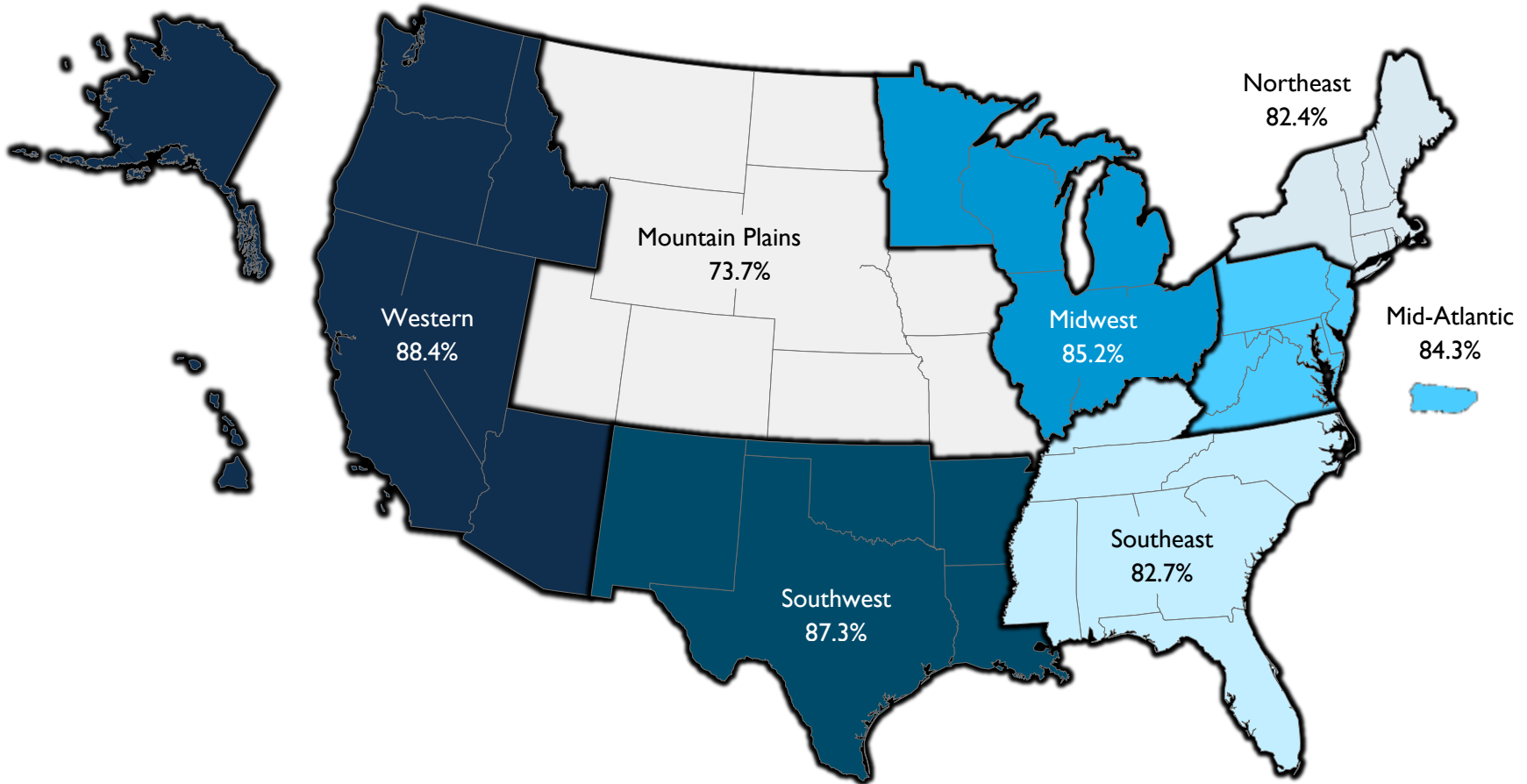
National Coverage Rate: 60.2%



Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, WIC Administrative Data

Figure 3: WIC Coverage Rate for Infants by FNS Region, CY 2013

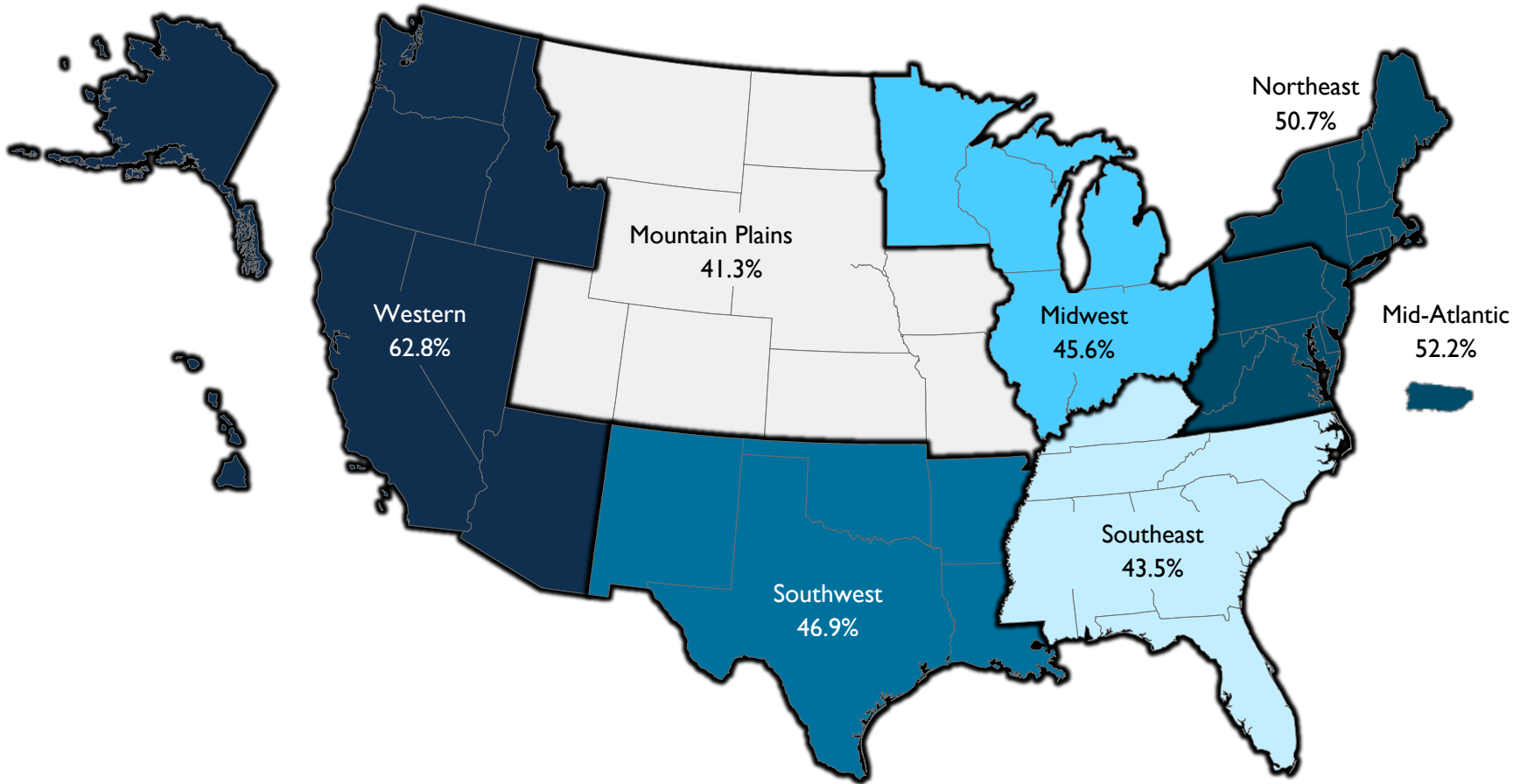
National Coverage Rate: 84.4%



Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, WIC Administrative Data

Figure 4: WIC Coverage Rate for Children (Ages 1-4) by FNS Region, CY 2013

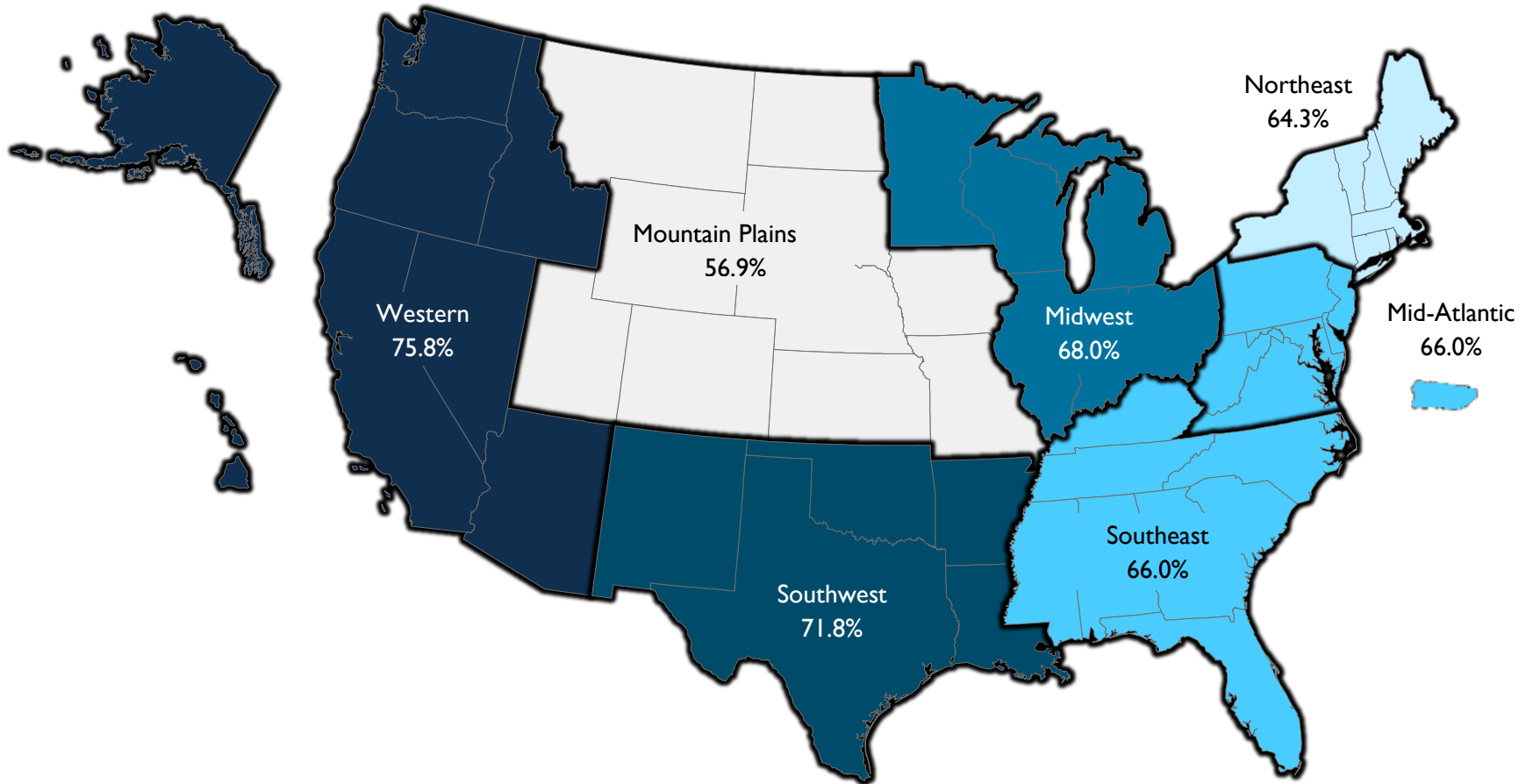
National Coverage Rate: 49.8%



Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, WIC Administrative Data

Figure 5: WIC Coverage Rate for Pregnant Women by FNS Region, CY 2013

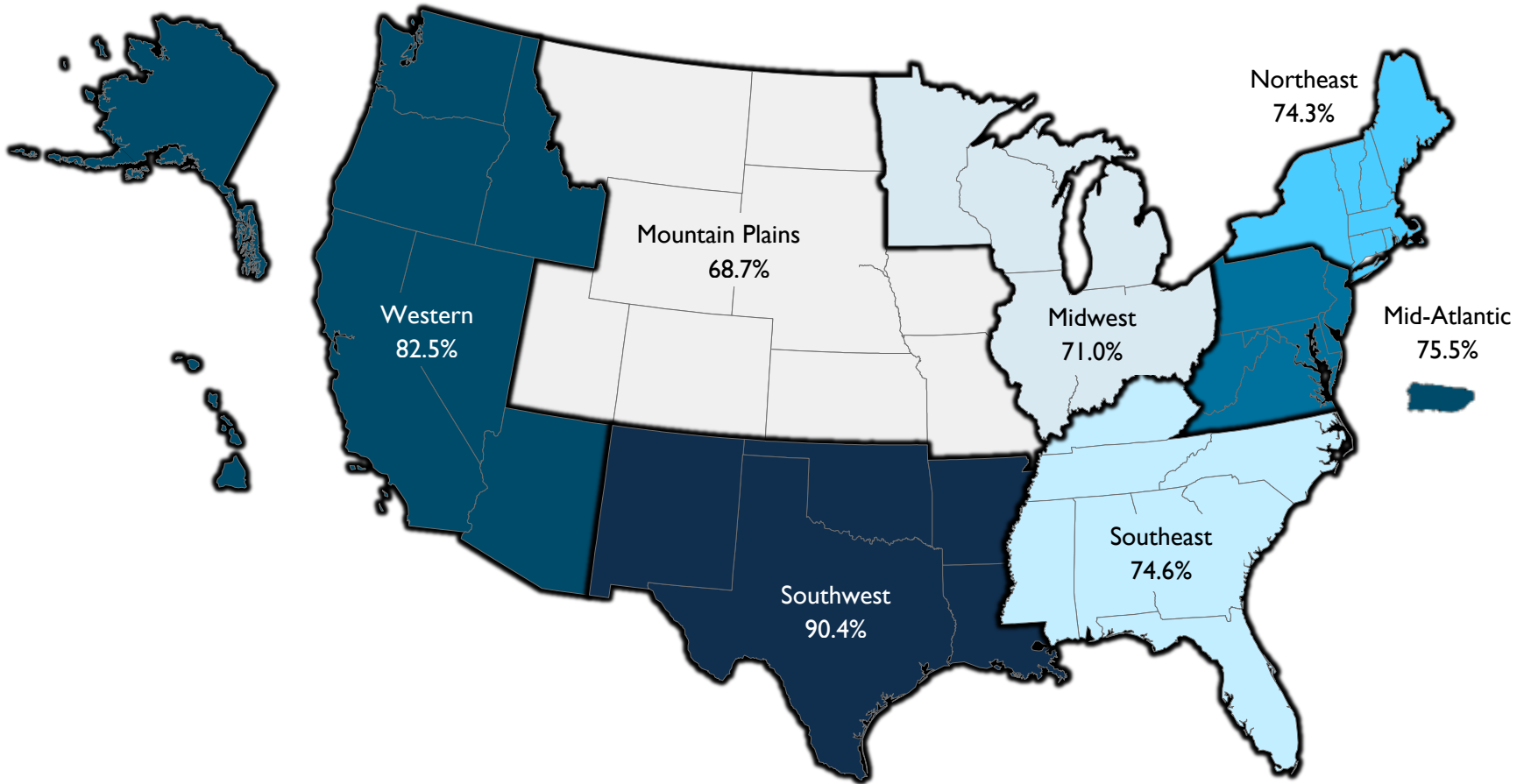
National Coverage Rate: 68.4%



Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, WIC Administrative Data

Figure 6: WIC Coverage Rate for All Postpartum Women by FNS Region, CY 2013

National Coverage Rate: 77.8%



Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, WIC Administrative Data

Coverage rates can also be calculated by State. The precision of the State estimates is considerably lower than for the national estimates, so that must be kept in mind in interpreting the estimates, particularly for smaller States. (Later in this report we show the level of imprecision in the State eligibility estimates due to sampling variability.)

With that caveat in mind, coverage rate estimates for 2013 show substantial variation between States (Table 13 and Figure 7).<sup>51</sup> In 2013, the State coverage rates range from 42 percent in New Hampshire and Montana to 76 percent in California (and 85 percent in Puerto Rico). Among very-large States other than California, the estimated overall WIC coverage rate is 54 percent in Florida (below the national average) and 63 percent in both New York and Texas (slightly above the national average).

It is also useful to consider the State-level coverage rate for two subgroups—all young children and the combined group of infants and women. To increase the reliability of State-level coverage rates for these two subgroups, rather than using just a single year's (2013) estimates of the numbers of participants and eligibles, we compute the coverage rates using the average numbers of participants and eligibles across three years—2011, 2012, and 2013—so the results are not precisely comparable to those based on only 2013 data.<sup>52</sup> Focusing first on children (Table 13a and Figure 7a), the estimated coverage rates vary from a low of 36 percent in New Hampshire and 38 percent in Montana and Utah to 74 percent in California and 81 percent in Puerto Rico. (The national rate when using three-year-averages is 52.2 percent, slightly above the national rate of 49.8 percent for young children when using only 2013 data for both participation and eligibility.) For infants and women (Table 13b and Figure 7b), the coverage rates vary from 54 percent in Montana to 92 percent in Vermont. (The national rate when using three-year-averages is 78.6 percent.)

The results show that some States have higher-than-average coverage rates for both subgroups. For example, California's coverage rates are 74 percent for children and 91 percent for the combined group of infants and women, both above the national averages. Conversely, some States have below-average rates for both groups. For example, Illinois's coverage rates using three-year-averages are 41 percent for children and 72 percent for the combined group of infants and women. Others show mixed results. For example, Texas has a coverage rate of 52 percent for children (very close to the national average), but covers an above-average 84 percent of infants and women.

### **WIC Coverage Rate Changes from 2012 to 2013**

The overall national coverage rate of 60.2 percent is 4.5 percent lower than the 63.1 percent rate estimated for 2012 (Table 14). The change is due to the combined impact of the 1 percent estimated increase in eligibility (Table 8) and a 3.6 percent decline in WIC participation—from 8.862 million in 2012 (not shown in a table) to 8.547 million average monthly participants in 2013. WIC participation has been declining somewhat since 2010 (with annual drops of one or two percent); however, our eligibility estimates declined by slightly larger percentages, so the overall estimated coverage rates

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<sup>51</sup> Table B.2 in the Appendix shows the same information as Table 13, but the States are categorized by region rather than alphabetically.

<sup>52</sup> Specifically, the coverage rates for the subgroups within States are computed as (the average of average monthly participation over the three years 2011, 2012, and 2013) divided by (the average of the average monthly eligibility estimates over the three years 2011, 2012, and 2013).

increased in each year since 2010. However, this year, the participation change is larger, and estimated eligibility increased slightly.

The largest change in the estimated coverage rate was for children. The number of children participating in WIC fell by 4.4 percent while our estimated eligibility figure increased by 2.6 percent. The estimated coverage rate also fell for pregnant women (by 3.6 percent) and for infants (by 0.8 percent). The estimated coverage rate increased slightly for postpartum women, due to the combination of a 1.7 percent drop in participation and a 2.8 percent drop in eligibility.

At the regional level, coverage rates show somewhat larger changes from 2012 (Table 14 and Figure 8), ranging from an 8.7 percent increase in the Midwest for postpartum women to a 9.4 percent decrease in the Northeast among pregnant women.

## **WIC Coverage Rates Since 2000**

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 2013, while the coverage rates in the Mountain Plains have generally been lower than in other regions (Figure 8).<sup>53</sup> This year, all regions showed a decrease in coverage rates – the only time this has happened in the 2000-2013 time period. 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.

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<sup>53</sup> 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 2013**

	Eligibles	Participants	Coverage Rate		Eligibles	Participants	Coverage Rate
<b>State<sup>a</sup></b>							
Alabama	223,006	136,258	61.1%	New York	809,158	508,738	62.9%
Alaska	34,279	22,436	65.5%	North Carolina	470,233	262,223	55.8%
Arizona	313,535	178,482	56.9%	North Dakota	25,236	13,102	51.9%
Arkansas	153,459	87,186	56.8%	Ohio	471,700	259,801	55.1%
California	1,850,260	1,408,714	76.1%	Oklahoma	215,759	116,195	53.9%
Colorado	197,064	94,547	48.0%	Oregon	166,921	106,472	63.8%
Connecticut	110,542	53,852	48.7%	Pennsylvania	451,537	253,365	56.1%
Delaware	36,076	20,466	56.7%	Puerto Rico	217,052	184,394	85.0%
D.C.	28,909	15,504	53.6%	Rhode Island	37,346	23,054	61.7%
Florida	883,991	477,741	54.0%	South Carolina	229,625	120,969	52.7%
Georgia	518,001	283,714	54.8%	South Dakota	38,261	19,892	52.0%
Hawaii	59,912	35,952	60.0%	Tennessee	311,972	157,384	50.4%
Idaho	85,320	42,531	49.8%	Texas	1,492,923	943,249	63.2%
Illinois	526,875	276,710	52.5%	Utah	143,703	64,945	45.2%
Indiana	293,780	158,071	53.8%	Vermont	23,835	14,647	61.5%
Iowa	121,136	65,236	53.9%	Virginia	278,515	154,538	55.5%
Kansas	125,843	68,507	54.4%	Washington	296,351	189,047	63.8%
Kentucky	193,506	128,477	66.4%	West Virginia	80,142	45,968	57.4%
Louisiana	239,958	137,498	57.3%	Wisconsin	199,196	112,237	56.3%
Maine	47,981	24,097	50.2%	Wyoming	21,856	11,951	54.7%
Maryland	216,808	143,765	66.3%				
Massachusetts	203,874	118,802	58.3%	<b>FNS Region<sup>b</sup></b>			
Michigan	413,548	253,027	61.2%	Northeast	1,269,800	758,576	59.7%
Minnesota	175,784	123,783	70.4%	Mid-Atlantic	1,612,309	989,709	61.4%
Mississippi	168,263	89,996	53.5%	Southeast	2,998,599	1,656,761	55.3%
Missouri	252,217	139,940	55.5%	Midwest	2,080,883	1,183,628	56.9%
Montana	46,161	19,518	42.3%	Southwest	2,226,042	1,344,443	60.4%
Nebraska	79,560	39,873	50.1%	Mountain Plains	1,051,038	537,510	51.1%
Nevada	119,860	74,670	62.3%	Western	2,949,881	2,076,389	70.4%
New Hampshire	37,063	15,386	41.5%				
New Jersey	297,612	166,866	56.1%	<b>Total</b>	<b>14,188,552</b>	<b>8,547,016</b>	<b>60.2%</b>
New Mexico	123,943	60,314	48.7%				

Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, Census International Data Base, WIC Administrative Data

**Notes:**

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

<sup>b</sup> 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.

**Table 13a: WIC Eligibles and Coverage Rates by State and FNS Region, Using 2011-2013 Average Numbers of Eligibles and Participants: Children (age 1 to 4)**

	Eligibles	Participants	Coverage Rate		Eligibles	Participants	Coverage Rate
<b>State<sup>a</sup></b>							
Alabama	148,148	72,978	49.3%	New York	496,139	273,671	55.2%
Alaska	23,473	12,664	54.0%	North Carolina	298,366	140,754	47.2%
Arizona	202,871	98,169	48.4%	North Dakota	13,856	7,080	51.1%
Arkansas	98,889	44,331	44.8%	Ohio	296,373	139,779	47.2%
California	1,138,193	837,885	73.6%	Oklahoma	130,868	62,462	47.7%
Colorado	128,847	53,281	41.4%	Oregon	105,245	60,788	57.8%
Connecticut	68,511	29,730	43.4%	Pennsylvania	285,247	134,023	47.0%
Delaware	23,195	11,724	50.5%	Puerto Rico	141,259	114,911	81.3%
D.C.	16,238	7,277	44.8%	Rhode Island	21,489	13,175	61.3%
Florida	533,990	251,473	47.1%	South Carolina	147,290	59,912	40.7%
Georgia	330,567	155,515	47.0%	South Dakota	22,263	11,712	52.6%
Hawaii	34,876	19,402	55.6%	Tennessee	192,768	75,150	39.0%
Idaho	52,678	23,079	43.8%	Texas	939,116	488,546	52.0%
Illinois	347,388	143,161	41.2%	Utah	95,142	36,237	38.1%
Indiana	187,085	82,806	44.3%	Vermont	14,779	9,212	62.3%
Iowa	75,389	35,574	47.2%	Virginia	171,192	78,588	45.9%
Kansas	84,744	38,281	45.2%	Washington	186,306	110,396	59.3%
Kentucky	125,495	66,405	52.9%	West Virginia	46,060	24,668	53.6%
Louisiana	156,026	69,776	44.7%	Wisconsin	135,261	63,037	46.6%
Maine	29,907	14,256	47.7%	Wyoming	14,245	6,430	45.1%
Maryland	131,168	75,402	57.5%				
Massachusetts	123,044	65,238	53.0%	<b>FNS Region<sup>b</sup></b>			
Michigan	260,085	132,603	51.0%	Northeast	776,774	413,604	53.2%
Minnesota	111,524	69,798	62.6%	Mid-Atlantic	1,003,092	541,732	54.0%
Mississippi	110,648	47,652	43.1%	Southeast	1,887,271	869,839	46.1%
Missouri	159,990	70,315	43.9%	Midwest	1,337,715	631,184	47.2%
Montana	28,279	10,766	38.1%	Southwest	1,403,927	697,995	49.7%
Nebraska	50,970	22,679	44.5%	Mountain Plains	673,725	292,356	43.4%
Nevada	81,559	40,293	49.4%	Western	1,839,066	1,213,629	66.0%
New Hampshire	22,906	8,322	36.3%				
New Jersey	185,172	92,288	49.8%	<b>Total</b>	<b>8,921,568</b>	<b>4,660,339</b>	<b>52.2%</b>
New Mexico	79,028	32,881	41.6%				

Source: 2012-2014 CPS-ASEC, 2011-2013 ACS, 2011-2013 PRCS, Census International Data Base, WIC Administrative Data

Notes:

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

<sup>b</sup> 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.

**Table 13b: WIC Eligibles and Coverage Rates by State and FNS Region, Using 2011-2013 Average Numbers of Eligibles and Participants: Women and Infants**

	Eligibles	Participants	Coverage Rate		Eligibles	Participants	Coverage Rate
<b>State<sup>a</sup></b>							
Alabama	83,610	67,335	80.5%	New York	298,845	241,675	80.9%
Alaska	15,081	11,714	77.7%	North Carolina	171,929	125,255	72.9%
Arizona	120,645	91,101	75.5%	North Dakota	9,458	6,478	68.5%
Arkansas	56,563	47,203	83.5%	Ohio	179,664	131,026	72.9%
California	674,404	610,596	90.5%	Oklahoma	73,619	58,947	80.1%
Colorado	76,397	47,103	61.7%	Oregon	65,175	48,984	75.2%
Connecticut	39,948	25,615	64.1%	Pennsylvania	168,620	119,993	71.2%
Delaware	13,336	9,910	74.3%	Puerto Rico	83,015	75,670	91.2%
D.C.	10,258	8,802	85.8%	Rhode Island	15,138	10,686	70.6%
Florida	320,810	236,575	73.7%	South Carolina	84,301	67,120	79.6%
Georgia	189,267	141,329	74.7%	South Dakota	13,647	9,721	71.2%
Hawaii	22,133	17,225	77.8%	Tennessee	108,787	85,326	78.4%
Idaho	33,310	20,331	61.0%	Texas	565,230	477,333	84.4%
Illinois	197,017	142,473	72.3%	Utah	53,583	32,511	60.7%
Indiana	112,294	79,907	71.2%	Vermont	6,549	6,045	92.3%
Iowa	42,233	32,381	76.7%	Virginia	101,305	77,968	77.0%
Kansas	46,127	34,378	74.5%	Washington	109,909	82,157	74.8%
Kentucky	74,107	67,361	90.9%	West Virginia	26,628	22,757	85.5%
Louisiana	91,790	73,385	79.9%	Wisconsin	75,924	53,805	70.9%
Maine	17,440	10,964	62.9%	Wyoming	9,242	5,988	64.8%
Maryland	78,897	70,221	89.0%				
Massachusetts	71,322	55,272	77.5%	<b>FNS Region<sup>b</sup></b>			
Michigan	153,442	121,460	79.2%	Northeast	461,313	358,066	77.6%
Minnesota	67,655	57,331	84.7%	Mid-Atlantic	588,425	464,415	78.9%
Mississippi	63,019	45,838	72.7%	Southeast	1,095,831	836,138	76.3%
Missouri	94,910	73,311	77.2%	Midwest	785,996	586,001	74.6%
Montana	17,254	9,303	53.9%	Southwest	831,546	686,599	82.6%
Nebraska	27,488	19,048	69.3%	Mountain Plains	390,338	270,221	69.2%
Nevada	48,469	35,177	72.6%	Western	1,098,105	924,742	84.2%
New Hampshire	12,071	7,807	64.7%				
New Jersey	104,321	76,835	73.7%	<b>Total</b>	<b>5,251,555</b>	<b>4,126,183</b>	<b>78.6%</b>
New Mexico	44,345	29,731	67.0%				

Source: 2012-2014 CPS-ASEC, 2011-2013 ACS, 2011-2013 PRCS, Census International Data Base, WIC Administrative Data

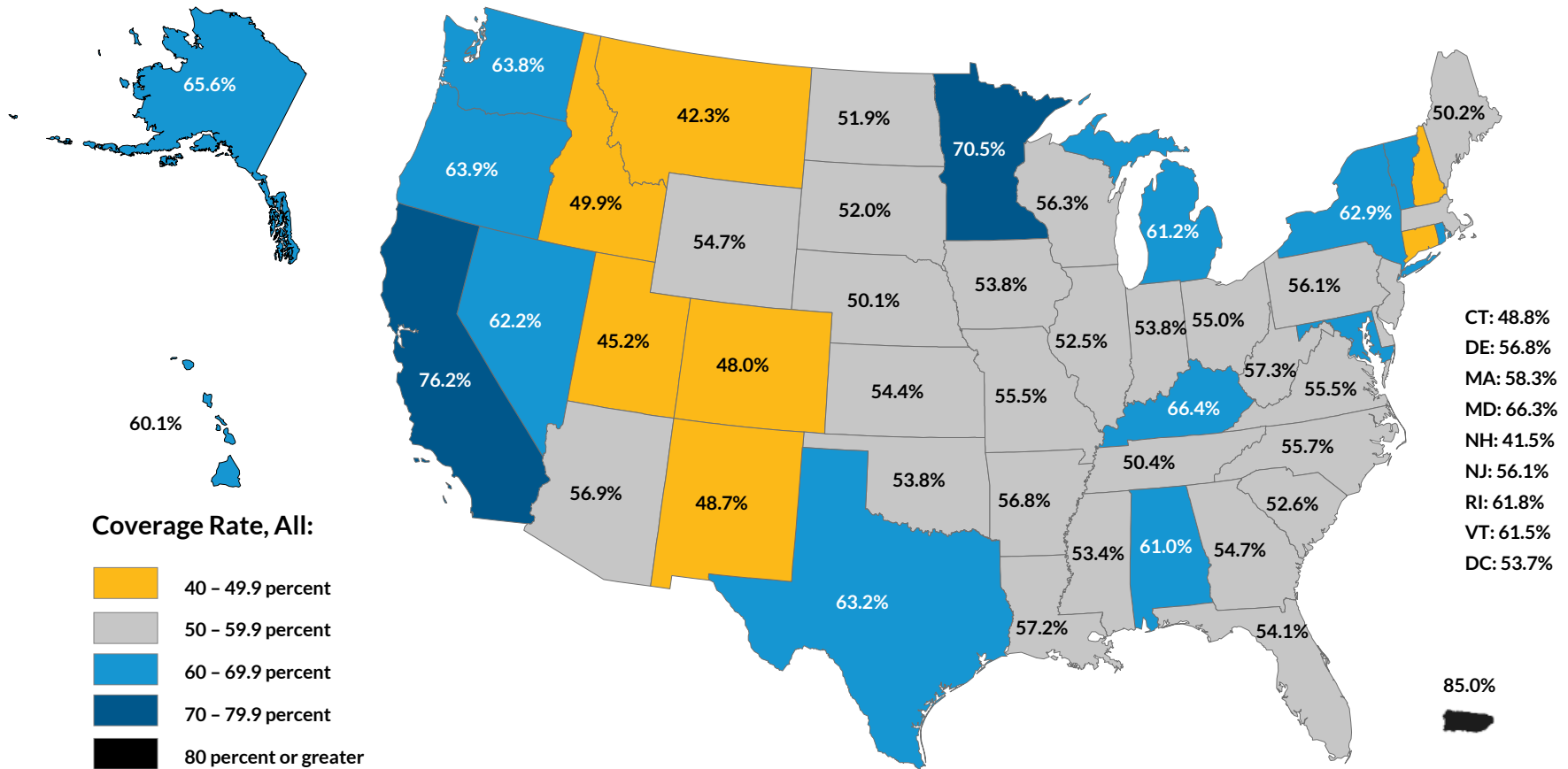
Notes:

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

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

Figure 7: WIC Coverage Rates for All Participants, by State, CY 2013

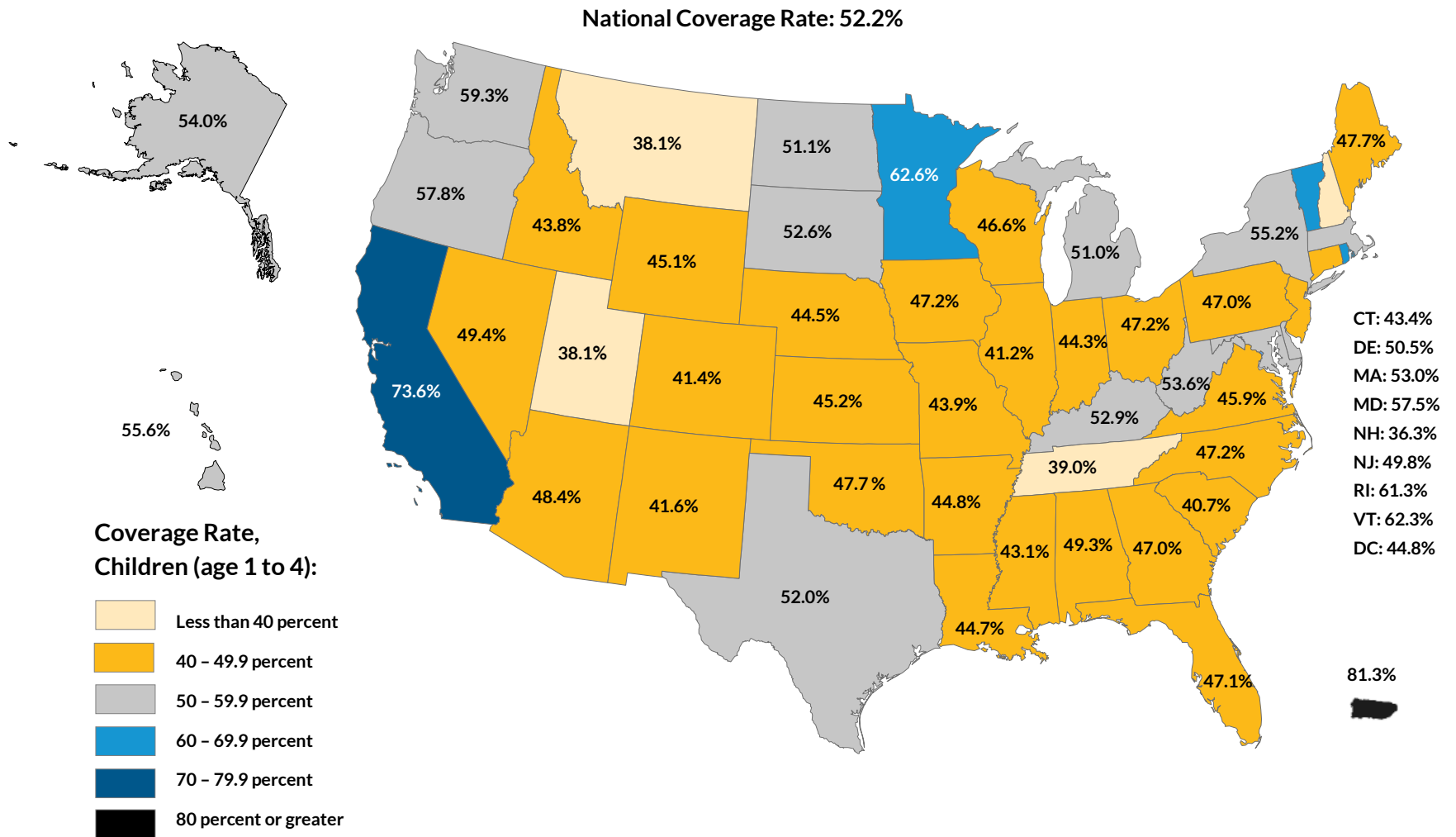
National Coverage Rate: 60.2%



Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, WIC Administrative Data

Figure 7a: WIC Coverage Rates for Children (age 1 to 4), by State

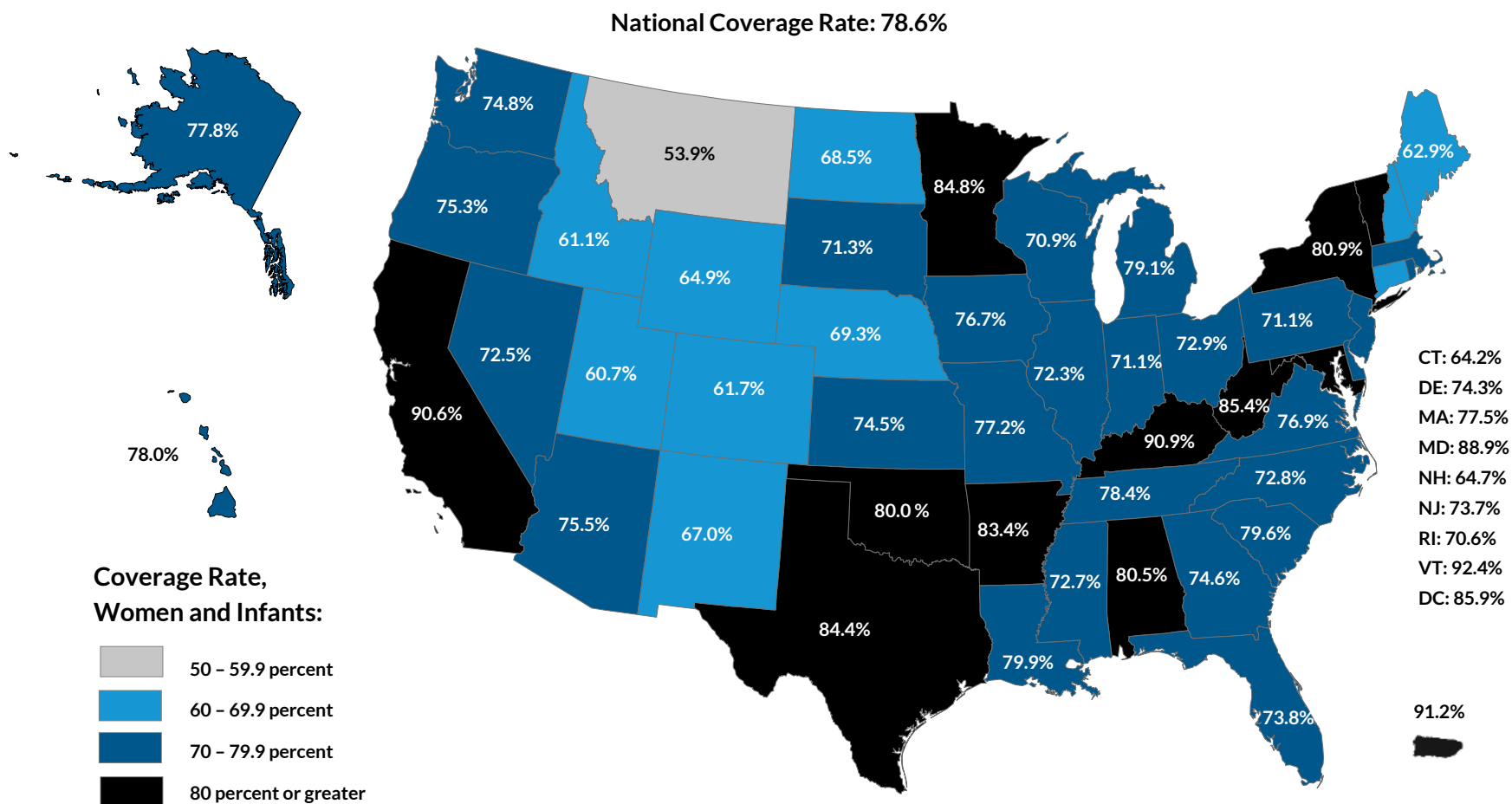
(Due to small sample size, the rates shown in this map were computed using the average of the eligibility and participation estimates for 2011-2013. Therefore, they do not match similar rates shown elsewhere in this report.)



Source: 2012-2014 CPS-ASEC, 2011-2013 ACS, 2011-2013 PRCS, WIC Administrative Data

Figure 7b: WIC Coverage Rates for Women and Infants, by State

(Due to small sample size, the rates shown in this map were computed using the average of the eligibility and participation estimates for 2011-2013. Therefore, they do not match similar rates shown elsewhere in this report.)



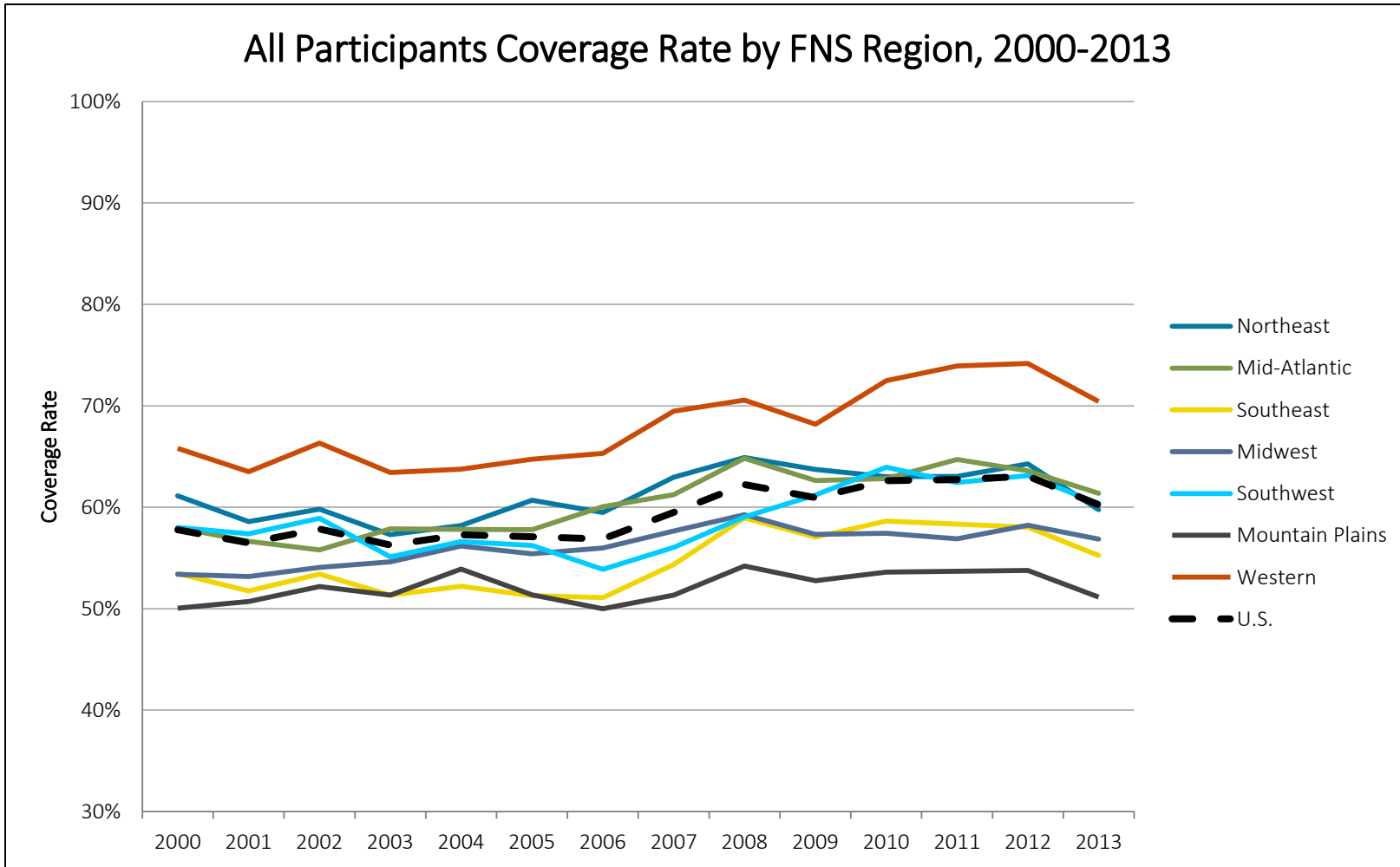
Source: 2012-2014 CPS-ASEC, 2011-2013 ACS, 2011-2013 PRCS, WIC Administrative Data

Table 14: WIC Coverage Rates by FNS Region and Participant Group, CY 2013 and CY 2012

	Infants	Children (age 1 to 4)	Pregnant Women	All Postpartum Women	Total
<b>Coverage Rate, 2013</b>					
Northeast	82.4%	50.7%	64.3%	74.3%	59.7%
Mid-Atlantic	84.3%	52.2%	66.0%	75.5%	61.4%
Southeast	82.7%	43.5%	66.0%	74.6%	55.3%
Midwest	85.2%	45.6%	68.0%	71.0%	56.9%
Southwest	87.3%	46.9%	71.8%	90.4%	60.4%
Mountain Plains	73.7%	41.3%	56.9%	68.7%	51.1%
Western	88.4%	62.8%	75.8%	82.5%	70.4%
<b>Total</b>	<b>84.4%</b>	<b>49.8%</b>	<b>68.4%</b>	<b>77.8%</b>	<b>60.2%</b>
<b>Coverage Rate, 2012</b>					
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%
<b>Total</b>	<b>85.1%</b>	<b>53.4%</b>	<b>70.9%</b>	<b>77.0%</b>	<b>63.1%</b>
<b>Percent Change in Coverage Rate, 2013 vs 2012</b>					
Northeast	-5.0%	-7.0%	-9.4%	-8.7%	-7.0%
Mid-Atlantic	-2.0%	-4.0%	-2.0%	-3.4%	-3.5%
Southeast	0.7%	-8.3%	-1.4%	2.0%	-4.8%
Midwest	1.7%	-5.5%	-2.1%	8.7%	-2.3%
Southwest	-1.2%	-7.2%	-4.4%	4.2%	-4.3%
Mountain Plains	-2.7%	-7.0%	-5.7%	0.1%	-4.9%
Western	-0.5%	-7.6%	-3.6%	0.2%	-5.1%
<b>Total</b>	<b>-0.8%</b>	<b>-6.8%</b>	<b>-3.6%</b>	<b>1.1%</b>	<b>-4.5%</b>

Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, Census International Data Base, WIC Administrative Data

Figure 8: All Participants Coverage Rate by FNS Region, 2000–2013<sup>a</sup>



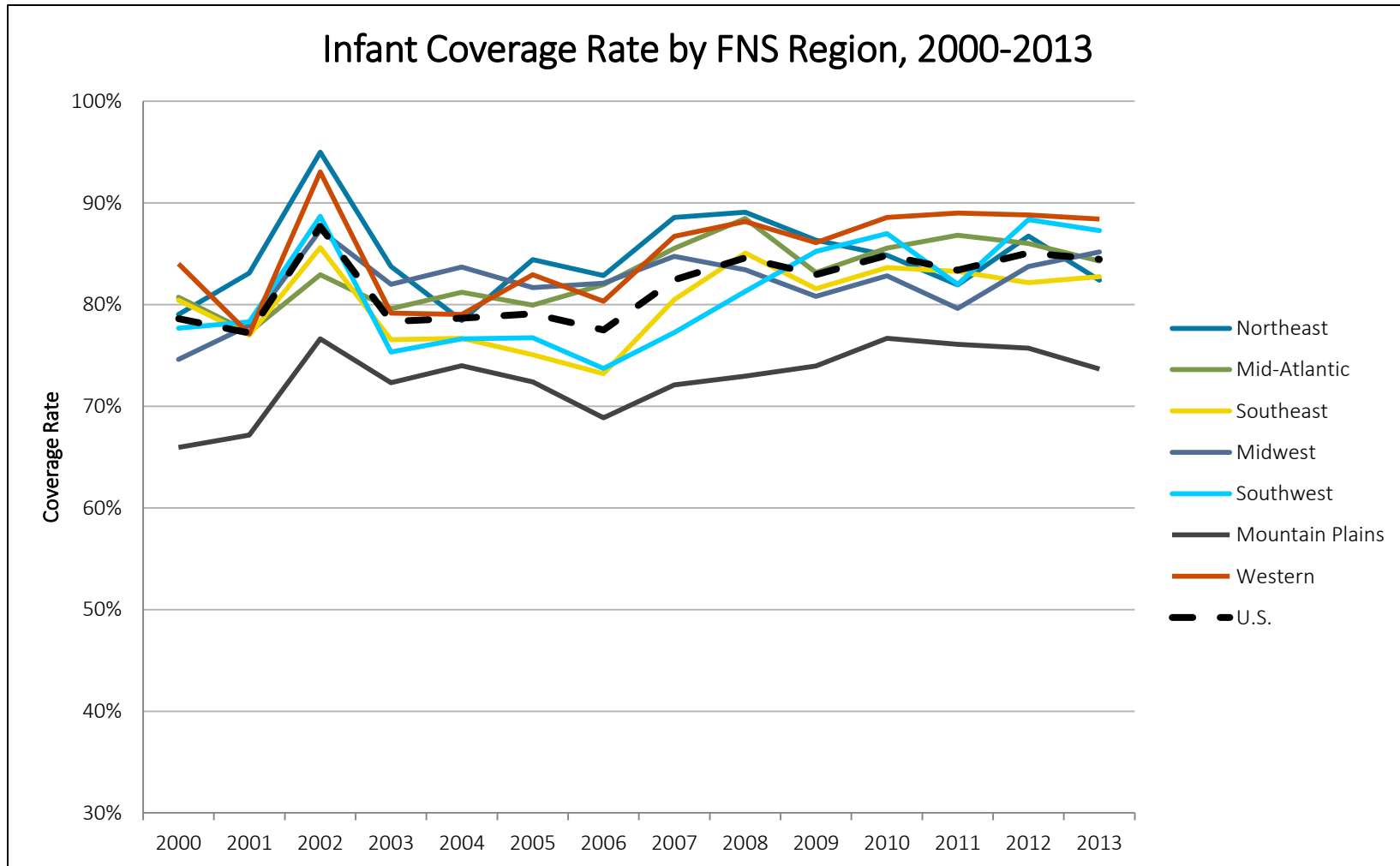
Notes:

<sup>a</sup> 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, 2000–2013<sup>a</sup>

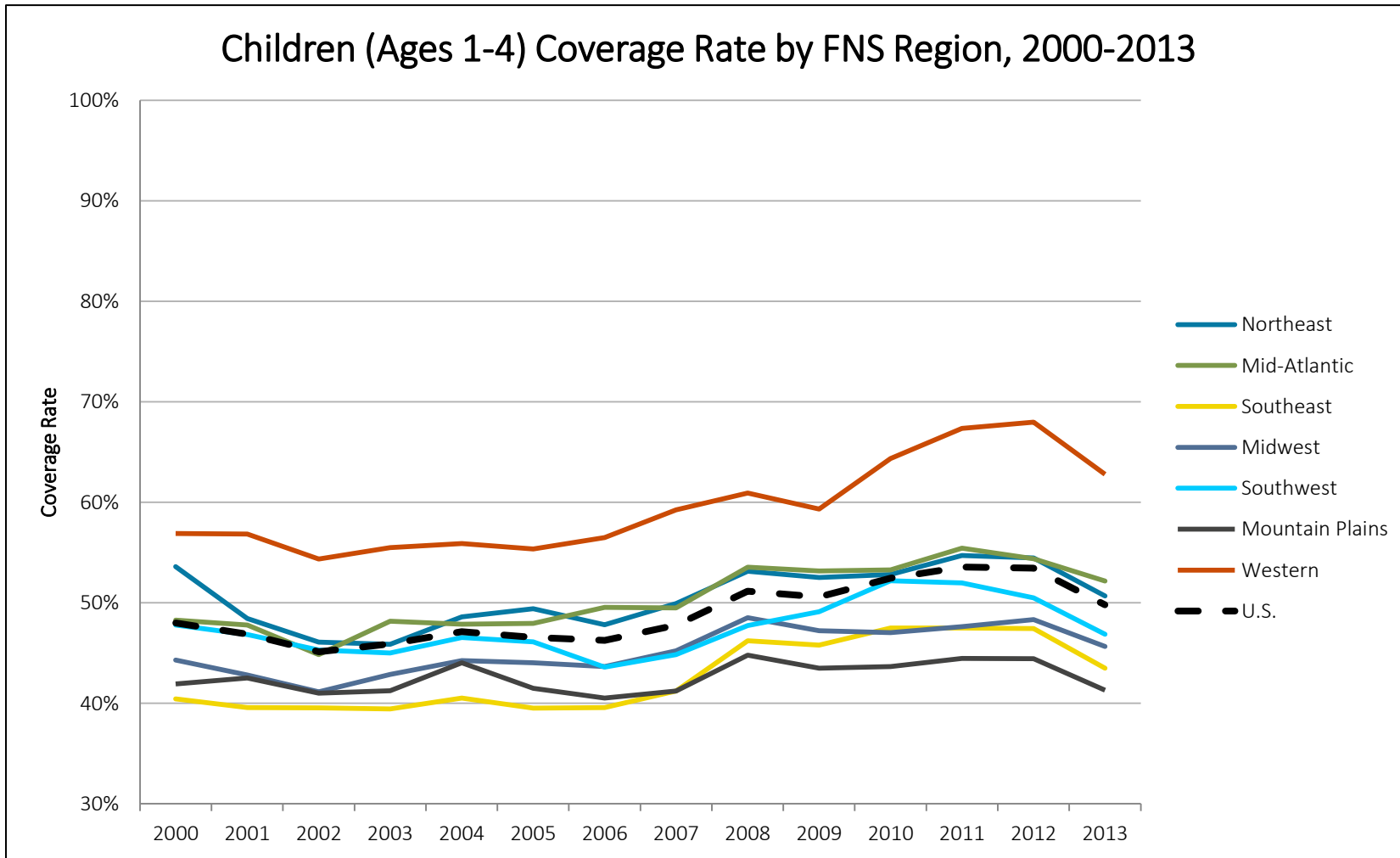


Notes:

<sup>a</sup> 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, 2000–2013<sup>a</sup>

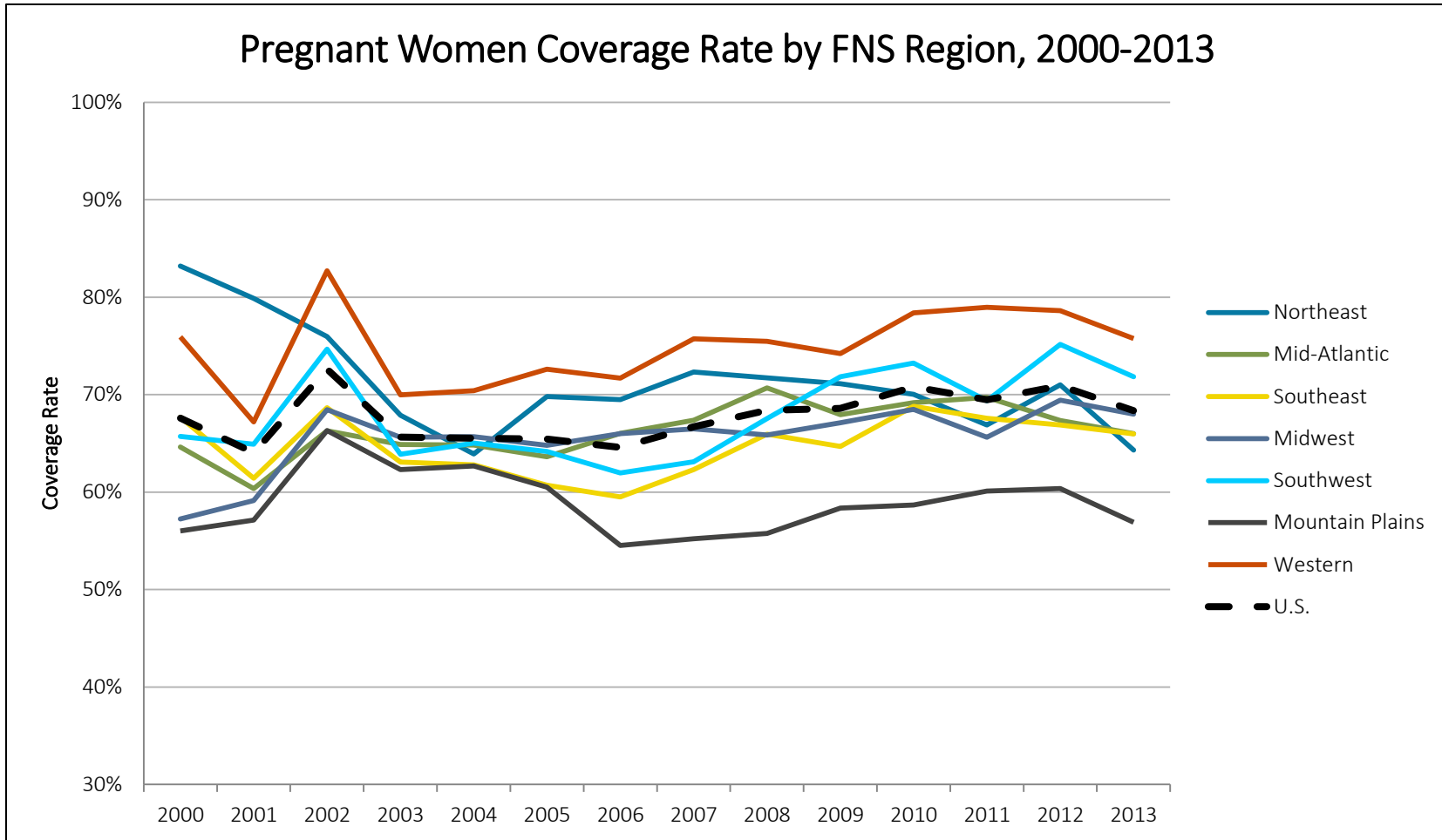


Notes:

<sup>a</sup> 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, 2000–2013<sup>a</sup>

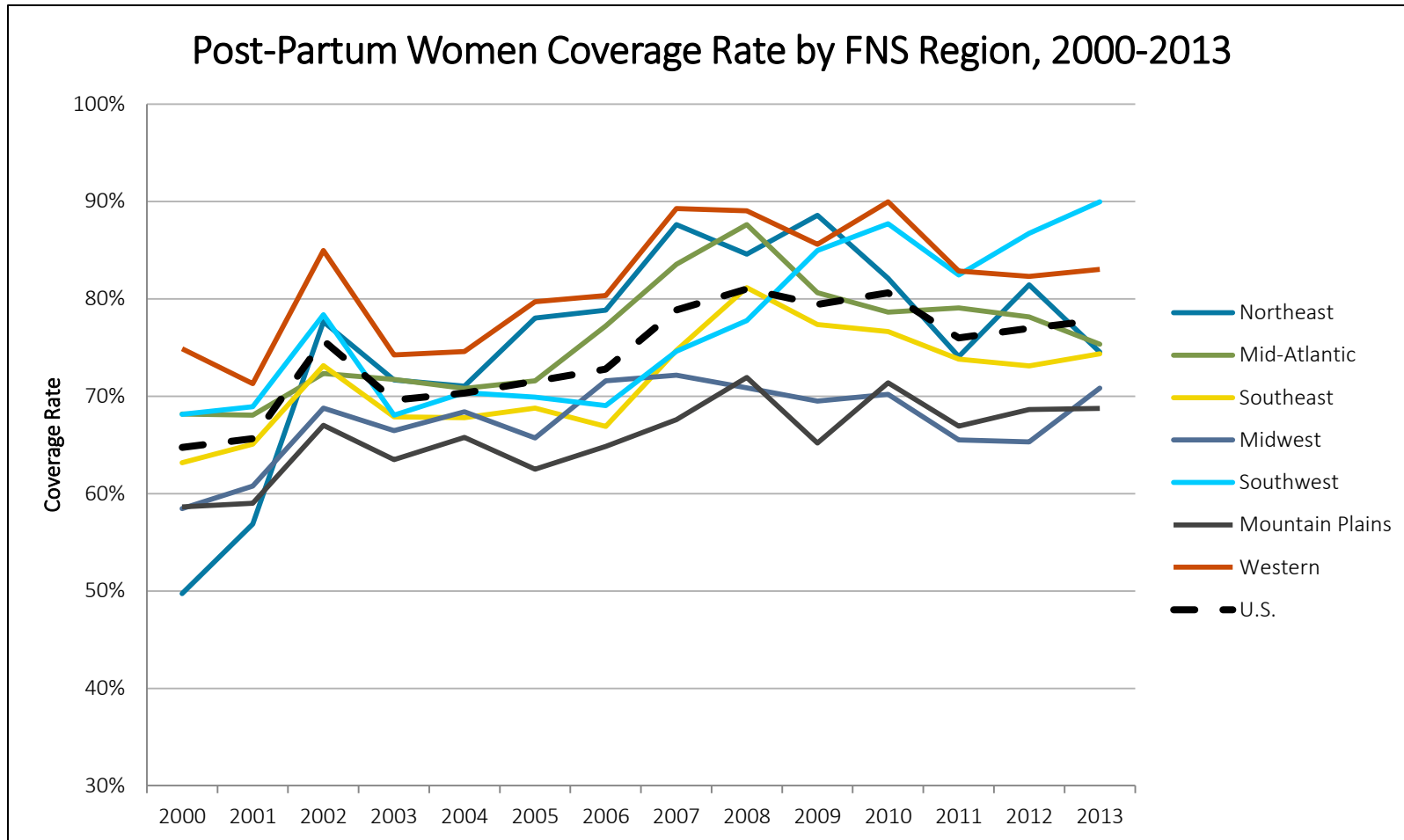


Notes:

<sup>a</sup> 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, 2000–2013<sup>a</sup>



Notes:

<sup>a</sup> 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 2013 national, State, and regional estimates.<sup>54</sup> The national-level estimates are all derived from the CPS-ASEC using the generalized variance estimates described in the technical documentation for the March 2014 CPS-ASEC.<sup>55</sup> 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.<sup>56</sup> 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. Tables 16a and 16b show this same information for the three-year-average estimates for all young children and for the combined group of infants and women.

The coefficients of variation for the 2013 national eligibility estimates for infants and pregnant women are the highest among all participant groups at 6.0 percent (Table 15). While the coefficient of variation for postpartum women is slightly lower at 4.2 percent, the relative error for the estimate for all children drops to 3.0 percent, reflecting the larger sample size for this estimation group. The greatest precision of eligibility estimates is for the total of all WIC eligibles (2.4 percent).

At the State level, the precision of the estimates is considerably lower than at the national level (Tables 16, 16a, and 16b). Given the large range of coefficient of variation (considering the overall State estimates, the coefficient of variation ranges from 2.8 percent for California to 16.7 percent for Wyoming), 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 1,269,800 people eligible for WIC in the Northeast in the average month of 2013. The standard error of that estimate is 43,529. We can be 90 percent sure that the true number falls within the range from (1,269,800 minus (1.65 \* 43,529)) to (1,269,800 plus (1.65 \* 43,529)), or from 1,197,977 to 1,341,622. For a 95 percent level of confidence, the process is the same, but a factor of 1.96 is applied to the standard error.

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<sup>54</sup> 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.

<sup>55</sup> These reports can be found at <http://www.census.gov/cps/methodology/techdocs.html>. See Appendix G for the generalized variance standard error formulas. Applying these methods requires choosing a specific pair of “a” and “b” parameters for use in the formulas. We use the parameters for “income characteristics” for all people when computing standard errors for total population estimates, and we use the “below poverty” parameters for standard errors of the WIC eligibility estimates.

<sup>56</sup> These reports can be found at [http://www.census.gov/acs/www/data\\_documentation/pums\\_documentation/](http://www.census.gov/acs/www/data_documentation/pums_documentation/).

**Table 15: WIC Eligibles and Standard Errors by FNS Region and Participant Group, CY 2013**

	<b>Infants</b>	<b>Children (age 1-4)</b>	<b>Pregnant Women</b>	<b>All Post-Partum Women</b>	<b>Total</b>
<b>Eligibles<sup>a</sup></b>					
Northeast	210,923	808,968	108,522	141,387	1,269,800
Mid-Atlantic	237,044	882,399	121,961	148,196	1,389,600
Southeast	503,271	1,925,207	258,938	311,182	2,998,599
Midwest	351,021	1,333,563	180,604	215,695	2,080,883
Southwest	378,331	1,424,024	194,655	229,032	2,226,042
Mountain Plains	179,453	666,546	92,330	112,709	1,051,038
Western	483,913	1,859,034	248,979	334,512	2,926,438
<b>Total</b>	<b>2,343,956</b>	<b>8,899,741</b>	<b>1,205,990</b>	<b>1,492,713</b>	<b>13,942,399</b>
<b>Standard Error<sup>a</sup></b>					
Northeast	18,014	34,813	9,268	8,783	43,529
Mid-Atlantic	19,610	37,090	10,090	9,198	46,475
Southeast	35,309	68,316	18,167	15,902	84,658
Midwest	26,418	50,777	13,593	11,526	63,100
Southwest	28,025	53,479	14,419	12,289	66,538
Mountain Plains	16,061	30,328	8,263	7,263	38,064
Western	34,186	66,368	17,589	16,769	82,975
<b>Total</b>	<b>140,216</b>	<b>270,320</b>	<b>72,142</b>	<b>63,377</b>	<b>335,527</b>
<b>Coefficient of Variation<sup>b</sup></b>					
Northeast	8.5%	4.3%	8.5%	6.2%	3.4%
Mid-Atlantic	8.3%	4.2%	8.3%	6.2%	3.3%
Southeast	7.0%	3.5%	7.0%	5.1%	2.8%
Midwest	7.5%	3.8%	7.5%	5.3%	3.0%
Southwest	7.4%	3.8%	7.4%	5.4%	3.0%
Mountain Plains	8.9%	4.6%	8.9%	6.4%	3.6%
Western	7.1%	3.6%	7.1%	5.0%	2.8%
<b>Total</b>	<b>6.0%</b>	<b>3.0%</b>	<b>6.0%</b>	<b>4.2%</b>	<b>2.4%</b>

Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, Census International Data Base, WIC Administrative Data

Notes:

<sup>a</sup> Estimates for the territories, including Puerto Rico, are not included in regional totals or standard errors.

<sup>b</sup> 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 2013**

	<b>Eligibles</b>	<b>Standard Error</b>	<b>Coefficient of Variation<sup>a</sup></b>		<b>Eligibles</b>	<b>Standard Error</b>	<b>Coefficient of Variation<sup>a</sup></b>
<b>State<sup>b</sup></b>							
Alabama	223,006	12,583	5.6%	New York	809,158	28,215	3.5%
Alaska	34,279	4,578	13.4%	North Carolina	470,233	19,705	4.2%
Arizona	313,535	15,244	4.9%	North Dakota	25,236	3,904	15.5%
Arkansas	153,459	10,094	6.6%	Ohio	471,700	19,668	4.2%
California	1,850,260	52,367	2.8%	Oklahoma	215,759	12,312	5.7%
Colorado	197,064	11,637	5.9%	Oregon	166,921	10,592	6.3%
Connecticut	110,542	8,441	7.6%	Pennsylvania	451,537	19,111	4.2%
Delaware	36,076	4,694	13.0%	Puerto Rico	217,052	12,350	5.7%
D.C.	28,909	4,171	14.4%	Rhode Island	37,346	4,731	12.7%
Florida	883,991	29,967	3.4%	South Carolina	229,625	12,760	5.6%
Georgia	518,001	20,911	4.0%	South Dakota	38,261	4,813	12.6%
Hawaii	59,912	6,070	10.1%	Tennessee	311,972	15,183	4.9%
Idaho	85,320	7,349	8.6%	Texas	1,492,923	44,291	3.0%
Illinois	526,875	21,200	4.0%	Utah	143,703	9,779	6.8%
Indiana	293,780	14,701	5.0%	Vermont	23,835	3,806	16.0%
Iowa	121,136	8,851	7.3%	Virginia	278,515	14,238	5.1%
Kansas	125,843	9,103	7.2%	Washington	296,351	14,800	5.0%
Kentucky	193,506	11,520	6.0%	West Virginia	80,142	7,099	8.9%
Louisiana	239,958	13,068	5.4%	Wisconsin	199,196	11,753	5.9%
Maine	47,981	5,406	11.3%	Wyoming	21,856	3,643	16.7%
Maryland	216,808	12,308	5.7%	<b>FNS Region<sup>c</sup></b>			
Massachusetts	203,874	11,842	5.8%	Northeast	1,269,800	43,529	3.4%
Michigan	413,548	18,068	4.4%	Mid-Atlantic	1,389,600	46,475	3.3%
Minnesota	175,784	10,912	6.2%	Southeast	2,998,599	84,658	2.8%
Mississippi	168,263	10,706	6.4%	Midwest	2,080,883	63,100	3.0%
Missouri	252,217	13,381	5.3%	Southwest	2,226,042	66,538	3.0%
Montana	46,161	5,311	11.5%	Mountain Plains	1,051,038	38,064	3.6%
Nebraska	79,560	7,116	8.9%	Western	2,926,438	82,975	2.8%
Nevada	119,860	8,882	7.4%				
New Hampshire	37,063	4,772	12.9%				
New Jersey	297,612	14,781	5.0%	<b>Total</b>	<b>13,942,399</b>	<b>335,527</b>	<b>2.4%</b>
New Mexico	123,943	9,005	7.3%				

Source: 2014 CPS-ASEC, 2013 ACS, 2013 PRCS, Census International Data Base, WIC Administrative Data

Notes:

<sup>a</sup> The coefficient of variation is defined as the ratio of the standard deviation to the eligibility estimate.

<sup>b</sup> State and regional eligibility estimates include those eligible for WIC via Indian Tribal Organizations.

<sup>c</sup> Estimates for the territories, including Puerto Rico, are not included in regional totals or standard errors.

**Table 16a: WIC Eligibles Standard Errors by State and FNS Region, Using 2011-2013 Average Numbers of Eligibles: Children (age 1 to 4)**

	Eligibles	Standard Error	Coefficient of Variation <sup>a</sup>		Eligibles	Standard Error	Coefficient of Variation <sup>a</sup>
<b>State<sup>b</sup></b>							
Alabama	148,148	6,203	4.2%	New York	496,139	12,867	2.6%
Alaska	23,473	2,345	10.0%	North Carolina	298,366	9,326	3.1%
Arizona	202,871	7,410	3.7%	North Dakota	13,856	1,794	12.9%
Arkansas	98,889	4,967	5.0%	Ohio	296,373	9,280	3.1%
California	1,138,193	23,092	2.0%	Oklahoma	130,868	5,796	4.4%
Colorado	128,847	5,738	4.5%	Oregon	105,245	5,136	4.9%
Connecticut	68,511	4,081	6.0%	Pennsylvania	285,247	9,066	3.2%
Delaware	23,195	2,327	10.0%	Puerto Rico	141,259	5,716	4.0%
D.C.	16,238	1,941	12.0%	Rhode Island	21,489	2,241	10.4%
Florida	533,990	13,512	2.5%	South Carolina	147,290	6,185	4.2%
Georgia	330,567	9,918	3.0%	South Dakota	22,263	2,279	10.2%
Hawaii	34,876	2,867	8.2%	Tennessee	192,768	7,202	3.7%
Idaho	52,678	3,556	6.8%	Texas	939,116	19,977	2.1%
Illinois	347,388	10,228	2.9%	Utah	95,142	4,863	5.1%
Indiana	187,085	7,078	3.8%	Vermont	14,779	1,852	12.5%
Iowa	75,389	4,297	5.7%	Virginia	171,192	6,732	3.9%
Kansas	84,744	4,570	5.4%	Washington	186,306	7,065	3.8%
Kentucky	125,495	5,657	4.5%	West Virginia	46,060	3,319	7.2%
Louisiana	156,026	6,383	4.1%	Wisconsin	135,261	5,897	4.4%
Maine	29,907	2,651	8.9%	Wyoming	14,245	1,819	12.8%
Maryland	131,168	5,801	4.4%				
Massachusetts	123,044	5,599	4.6%	<b>FNS Region<sup>c</sup></b>			
Michigan	260,085	8,577	3.3%	Northeast	776,774	18,265	2.4%
Minnesota	111,524	5,305	4.8%	Mid-Atlantic	858,273	19,549	2.3%
Mississippi	110,648	5,280	4.8%	Southeast	1,887,271	35,164	1.9%
Missouri	159,990	6,473	4.0%	Midwest	1,337,715	26,886	2.0%
Montana	28,279	2,576	9.1%	Southwest	1,403,927	27,930	2.0%
Nebraska	50,970	3,496	6.9%	Mountain Plains	673,725	16,525	2.5%
Nevada	81,559	4,476	5.5%	Western	1,825,201	34,238	1.9%
New Hampshire	22,906	2,311	10.1%				
New Jersey	185,172	7,039	3.8%	<b>Total</b>	<b>8,762,884</b>	<b>178,558</b>	<b>2.0%</b>
New Mexico	79,028	4,404	5.6%				

Source: 2012-2014 CPS-ASEC, 2011-2013 ACS, 2011-2013 PRCS, Census International Data Base, WIC Administrative Data

Notes:

<sup>a</sup> The coefficient of variation is defined as the ratio of the standard deviation to the eligibility estimate.

<sup>b</sup> State and regional eligibility estimates include those eligible for WIC via Indian Tribal Organizations.

<sup>c</sup> Estimates for the territories, including Puerto Rico, are not included in regional totals or standard errors.



**Table 16b: WIC Eligibles Standard Errors by State and FNS Region, Using 2011-2013 Average Numbers of Eligibles: Women and Infants**

	Eligibles	Standard Error	Coefficient of Variation <sup>a</sup>		Eligibles	Standard Error	Coefficient of Variation <sup>a</sup>
<b>State<sup>b</sup></b>							
Alabama	83,610	6,711	8.0%	New York	298,845	14,755	4.9%
Alaska	15,081	2,810	18.6%	North Carolina	171,929	10,334	6.0%
Arizona	120,645	8,457	7.0%	North Dakota	9,458	2,227	23.5%
Arkansas	56,563	5,458	9.6%	Ohio	179,664	10,591	5.9%
California	674,404	26,389	3.9%	Oklahoma	73,619	6,289	8.5%
Colorado	76,397	6,500	8.5%	Oregon	65,175	6,051	9.3%
Connecticut	39,948	4,635	11.6%	Pennsylvania	168,620	10,223	6.1%
Delaware	13,336	2,605	19.5%	Puerto Rico	83,015	8,641	10.4%
D.C.	10,258	2,246	21.9%	Rhode Island	15,138	2,782	18.4%
Florida	320,810	15,508	4.8%	South Carolina	84,301	6,792	8.1%
Georgia	189,267	10,899	5.8%	South Dakota	13,647	2,653	19.4%
Hawaii	22,133	3,455	15.6%	Tennessee	108,787	7,853	7.2%
Idaho	33,310	4,206	12.6%	Texas	565,230	22,852	4.0%
Illinois	197,017	11,247	5.7%	Utah	53,583	5,382	10.0%
Indiana	112,294	8,035	7.2%	Vermont	6,549	1,786	27.3%
Iowa	42,233	4,678	11.1%	Virginia	101,305	7,571	7.5%
Kansas	46,127	4,964	10.8%	Washington	109,909	8,052	7.3%
Kentucky	74,107	6,321	8.5%	West Virginia	26,628	3,647	13.7%
Louisiana	91,790	7,106	7.7%	Wisconsin	75,924	6,474	8.5%
Maine	17,440	2,972	17.0%	Wyoming	9,242	2,192	23.7%
Maryland	78,897	6,565	8.3%				
Massachusetts	71,322	6,279	8.8%	<b>FNS Region<sup>c</sup></b>			
Michigan	153,442	9,669	6.3%	Northeast	461,313	19,570	4.2%
Minnesota	67,655	6,095	9.0%	Mid-Atlantic	503,364	20,891	4.2%
Mississippi	63,019	5,792	9.2%	Southeast	1,095,831	36,716	3.4%
Missouri	94,910	7,282	7.7%	Midwest	785,996	28,295	3.6%
Montana	17,254	2,957	17.1%	Southwest	831,546	29,676	3.6%
Nebraska	27,488	3,750	13.6%	Mountain Plains	390,338	17,419	4.5%
Nevada	48,469	5,058	10.4%	Western	1,089,126	36,298	3.3%
New Hampshire	12,071	2,456	20.3%				
New Jersey	104,321	7,767	7.4%	<b>Total</b>	<b>5,157,516</b>	<b>188,865</b>	<b>3.7%</b>
New Mexico	44,345	4,871	11.0%				

Source: 2012-2014 CPS-ASEC, 2011-2013 ACS, 2011-2013 PRCS, Census International Data Base, WIC Administrative Data

**Notes:**

<sup>a</sup> The coefficient of variation is defined as the ratio of the standard deviation to the eligibility estimate.

<sup>b</sup> State and regional eligibility estimates include those eligible for WIC via Indian Tribal Organizations.

<sup>c</sup> 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 14.2 million individuals were eligible for WIC during an average month of 2013 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), 9.1 million children age one through four (56 percent of all young children), 1.2 million pregnant women, and 1.5 million postpartum women.

Compared to estimates of WIC eligibility in 2012, the estimates for 2013 show a decline in WIC eligibility for all groups except children. The number of infants who were WIC eligible declined by 1.4 percent, while the number of WIC eligible children increased by 2.6 percent. For infants, this overall decline was caused by a decrease in the total size of the infant population as defined for this analysis (1.1 percent) as well as by a very slight decrease in the percentage of infants estimated eligible for WIC (from 61.4 percent in 2012 to 61.3 percent in 2013). Among children however, there was virtually no change in the total size of the population, and a noticeable increase in percentage estimated eligible for WIC (from 54.5 percent in 2012 to 55.9 percent in 2013), due to 12-month certification for children in many States. The number of eligible pregnant women followed the trend among infants and decreased by 1.4 percent, while the number of eligible postpartum women decreased by 2.8 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 (somewhat 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 (13.0 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 60.2 percent in 2013. Nationwide, infants have the highest coverage rate at 84.4

percent and children age one through four have the lowest rate at 49.8 percent. Coverage rates also vary by FNS region, ranging from 51.1 percent in the Mountain Plains to 70.4 percent in the Western region. Since 2000, coverage rates had generally been increasing, but in 2013, the overall coverage rate showed a decrease of 4.5 percent compared to 2012.

There are five appendices to this report. The first provides more detailed tables for the national and territorial estimates, and the second provides more detailed tables for the State and regional eligibility estimates. The third appendix provides coverage rate maps for all regions. The fourth appendix shows the WIC eligibility and coverage results for 2000 through 2013. The fifth appendix provides details regarding the new procedure used for computing the annual-to-monthly adjustment factors for children. Interested readers should consult Betson et al. (2011), Martinez-Schiferl et al. (2012), and Johnson et al. (2014 and 2015) for more details on all methods used to produce these estimates.

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