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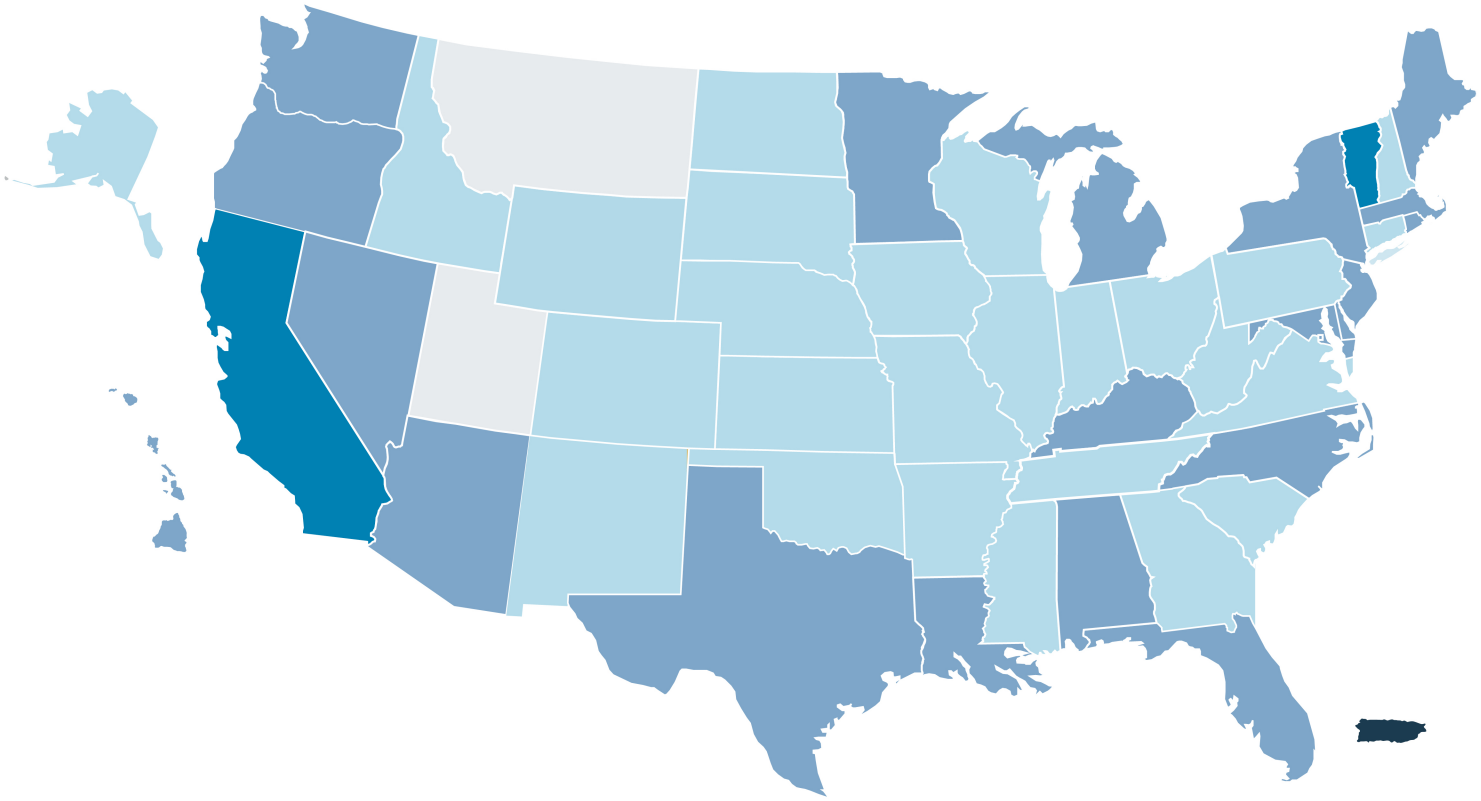
National- and State-Level Estimates of WIC Eligibles and WIC Program Reach in 2015



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National- and State-Level Estimates of WIC Eligibles and WIC Program Reach in 2015

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Executive Summary

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) provides nutritious foods, nutrition education, breastfeeding promotion and support, and health and social service referrals to participants. Low-income and nutritionally at-risk pregnant and postpartum women, infants, and children up to age 5 are eligible for WIC. Eligible participants redeem benefits received through vouchers, checks, or electronic benefit transfer cards for foods they have been prescribed (for example, milk, juice, and cereal) from participating retail vendors at no charge.

To be eligible for WIC, an applicant must be categorically eligible as a pregnant, postpartum breastfeeding (up to 1 year postpartum), or postpartum nonbreastfeeding (up to 6 months postpartum) woman; an infant up to age 1 (the first birthday); or a child up to age 5 (the fifth birthday). Applicants must be at nutritional risk and have household income less than or equal to 185 percent of the Federal Poverty Guidelines issued annually by the U.S. Department of Health and Human Services (2016).[1] Nutritionally at-risk applicants may also be adjunctively income-eligible for WIC if they participate in Medicaid, the Supplemental Nutrition Assistance Program, or Temporary Assistance for Needy Families.

This report presents estimates of the numbers of women, infants, and children eligible for WIC during an average month in calendar year (CY) 2015. It provides estimates by participant category (infants, children, pregnant women, and postpartum women) and by race and ethnicity at the national, regional, State, and U.S. territory levels. The report also provides 2015 estimates of the percentages of eligible women, infants, and children who participated in WIC (coverage rates) and the percentages of the total national population of women, infants, and children who participated in WIC (participation rates).

A. Methodology

The estimates presented in this report were prepared using the methodology originally developed in 2003 by the Committee on National Statistics of the National Research Council (Ver Ploeg & Betson, 2003).

The study team used 2016 Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) data to calculate the 2015 national estimates of WIC-eligible individuals (National Bureau of Economic Research [NBER], n.d.). The numbers of income-eligible and adjunctively income-eligible infants and children were first estimated and then adjusted to account for differences between annual and monthly income and for nutritional risk. The number of WIC-eligible infants was then used as the starting point to estimate the numbers of WIC-eligible pregnant and postpartum women. Because the CPS data do not identify pregnancy or breastfeeding status, the estimate of the number of WIC-eligible women was based on adjusted counts of WIC-eligible infants rather than separate counts of the CPS-ASEC data.

To calculate the State-level estimates of WIC-eligible individuals, the study team followed the same general procedures but used 2015 American Community Survey (ACS) data (The Integrated Public Use Microdata Series-USA [IPUMS-USA], n.d.) rather than CPS-ASEC data. Each State's share of the total ACS-based estimate for each participant category was then applied to the CPS-based national estimate for each category. Puerto Rico Community Survey data for 2015 (IPUMS-USA, n.d.) were used to estimate

[1] These guidelines are based on household size. The 48 contiguous States, the District of Columbia, and the 5 U.S. territories served by WIC have the same guidelines; Alaska and Hawaii have different guidelines.

WIC eligibility in Puerto Rico, and 2015 U.S. Census Bureau International Data Base data (U.S. Census Bureau, n.d.d) were used to estimate WIC eligibility in the other four U.S. territories served by WIC.

B. Results

1. WIC Eligibility Estimates

a. How many women, infants, and children were eligible for WIC in 2015?

In an average month in CY 2015, 15.1 million individuals were eligible for WIC (see table ES.1). Of those eligible to participate in WIC, more than half (62 percent) were children aged 1 to 4, 17 percent were infants, and 22 percent were women. WIC-eligible children were evenly distributed by age (see figure ES.1). Pregnant and postpartum women each represented about 11 percent of the eligible population.

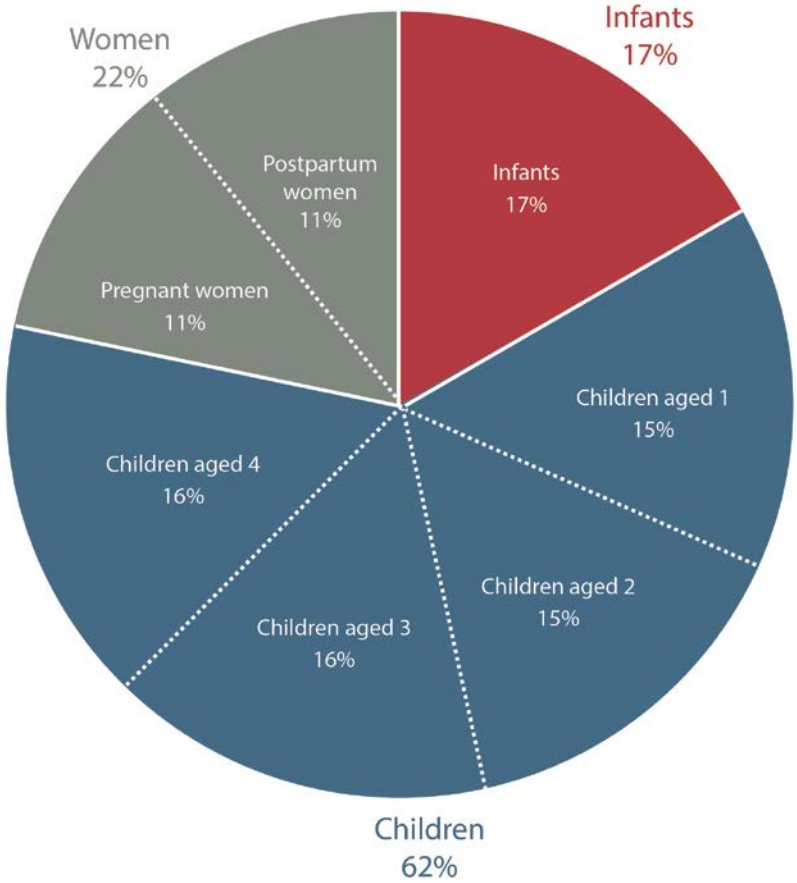
The eligibility rate is the percentage of the total population in each participant category that is estimated to be eligible for WIC. In an average month in CY 2015, almost two-thirds of all infants (63 percent) and 57 percent of all children aged 1 to 4 were eligible for WIC (see figure ES.2). Almost 55 percent of all pregnant women and 42 percent of all postpartum women were eligible.

Table ES.1. Estimated Average Monthly Number of WIC-Eligible Individuals by Participant Category: CY 2015

Participant Category	Number Eligible	Percent of Total Eligible	Total Population	Eligibility Rate (Percent)
Infants	2,506,686	16.6	3,998,800	62.7
Total children aged 1–4	9,268,848	61.5	16,142,707	57.4
Children aged 1	2,274,986	15.1	4,044,481	56.2
Children aged 2	2,321,950	15.4	4,034,206	57.6
Children aged 3	2,340,558	15.5	4,031,844	58.1
Children aged 4	2,331,355	15.5	4,032,176	57.8
Total women	3,286,968	21.8	6,970,608	47.2
Pregnant women	1,634,852	10.9	2,987,403	54.7
Total postpartum women	1,652,116	11.0	3,983,205	41.5
Breastfeeding women	1,034,333	6.9	2,147,025	48.2
Nonbreastfeeding women	617,783	4.1	1,836,179	33.6
Total	**15,062,503**	**100.0**	**27,112,115**	**55.6**

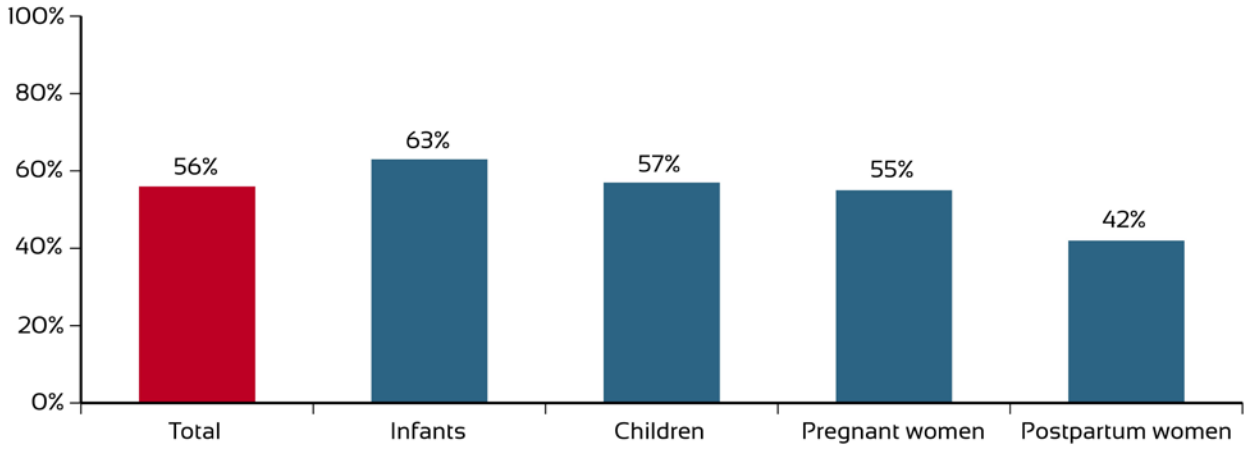
Notes
The total population consists of individuals in the Nation and the five U.S. territories served by WIC in each participant category.
The eligibility rate is the ratio of total individuals eligible for WIC to the total population in each participant category.
Sources: NBER, n.d.; IPUMS-USA, n.d.; U.S. Census Bureau, n.d.d

Figure ES.1. Distribution of WIC-Eligible Individuals: CY 2015



Sources: NBER, n.d.; IPUMS-USA, n.d; U.S. Census Bureau, n.d.d

Figure ES.2. WIC Eligibility Rate by Participant Category: CY 2015



Sources: NBER, n.d.; IPUMS-USA, n.d; U.S. Census Bureau, n.d.d

b. Did the number of WIC-eligible individuals change between 2014 and 2015?

The total number of WIC-eligible individuals increased from 15.0 million in CY 2014 to 15.1 million in CY 2015, an increase of only 0.4 percent (see table ES.2). The number of eligible infants increased by 2.2 percent, and the number of eligible children dropped only slightly by 0.8 percent. The number of eligible pregnant women increased by 2.2 percent (equal to the percentage increase in eligible infants), and the number of eligible postpartum women increased by 2.8 percent.[2]

The changes in the numbers of WIC-eligible individuals (both overall and for all participant categories) were not statistically significant when tested at the 90-percent confidence level.[3] Therefore, it is not certain whether the changes between 2014 and 2015 were true changes or a result of sampling variability in the CPS-ASEC survey data.

Table ES.2. Changes in the Total Population, Total WIC Eligibles, and WIC Eligibility Rates by Participant Category: CY 2014–CY 2015

Participant Category	Total Population		Percent Change	Total WIC Eligibles		Percent Change
	2014	2015		2014	2015	
Infants	3,958,480	3,998,800	1.0	2,451,750	2,506,686	2.2
Total children aged 1–4	16,141,207	16,142,707	0.0	9,347,672	9,268,848	-0.8
Children aged 1	4,030,564	4,044,481	0.3	2,312,140	2,274,986	-1.6
Children aged 2	4,005,410	4,034,206	0.7	2,318,334	2,321,950	0.2
Children aged 3	4,065,415	4,031,844	-0.8	2,357,342	2,340,558	-0.7
Children aged 4	4,039,819	4,032,176	-0.2	2,359,857	2,331,355	-1.2
Pregnant women	2,957,281	2,987,403	1.0	1,599,023	1,634,852	2.2
All postpartum women	3,943,041	3,983,205	1.0	1,606,863	1,652,116	2.8
Breastfeeding women	2,087,752	2,147,025	2.8	998,025	1,034,333	3.6
Nonbreastfeeding women	1,855,289	1,836,179	-1.0	608,838	617,783	1.5
Total WIC Eligibles	**27,000,009**	**27,112,115**	**0.4**	**15,005,308**	**15,062,503**	**0.4**

Sources: NBER, n.d.; IPUMS-USA, n.d; U.S. Census Bureau, n.d.d

c. What are the long-term trends in WIC eligibility?

Overall, the number of WIC-eligible individuals increased only slightly from 2005 to 2015. During this 10-year period, the number of eligible individuals increased by 842,000, or less than 6 percent (see table ES.3). The total number fluctuated over this period: it fell from 14.2 million in 2005 to 13.8 million in 2007, increased to 14.8 million in 2010 (during the Great Recession), declined following the recession to 14.1 million, and has increased every year since 2012, reaching 15.1 million in 2015.

As shown in table ES.3, the relative share of the eligible population by participant category has remained the same over time: children have consistently made up the largest category, followed by infants, pregnant women, postpartum breastfeeding women, and postpartum nonbreastfeeding women. As

[2] The increase in eligible postpartum women was affected by both the number of eligible infants and the increase in breastfeeding rates between 2014 and 2015.

[3] The statistical significance testing was conducted on the 2014–2015 change in WIC eligibility based on the CPS-ASEC data, which included only the 50 States and the District of Columbia. It did not include Puerto Rico or the other four U.S. territories served by WIC.

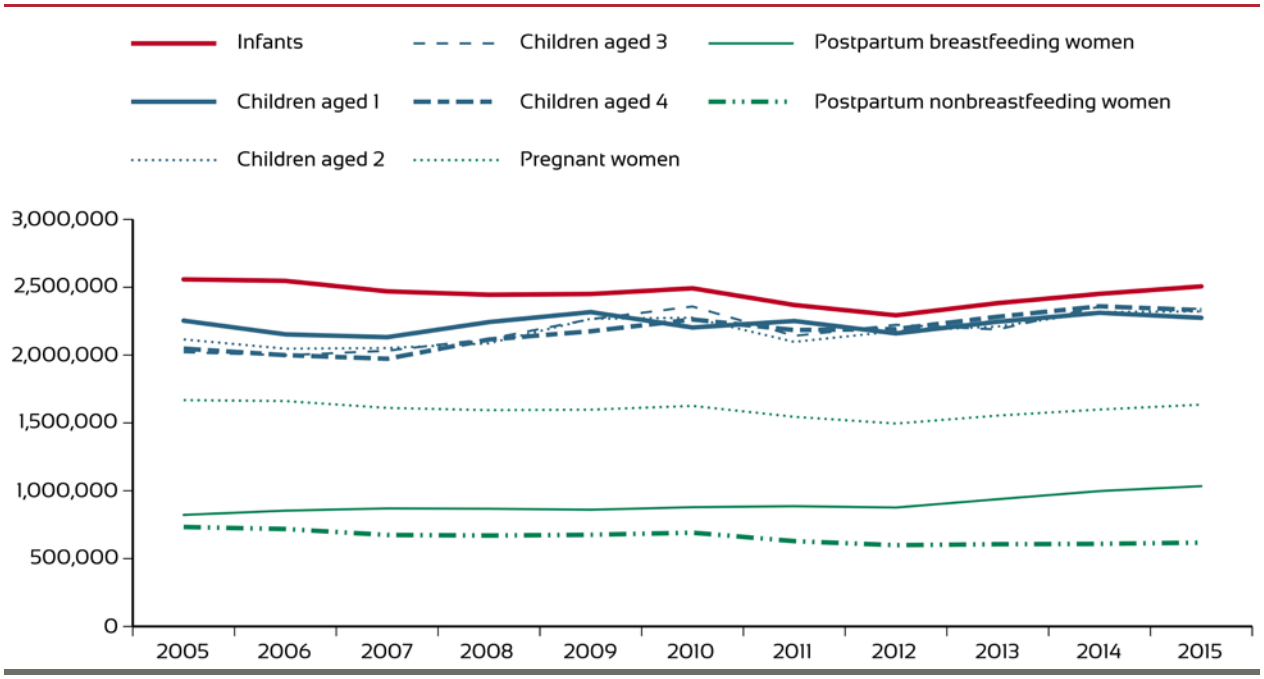
figure ES.3 shows, the relative share of eligible children by age group has also remained stable over time, with a slight increase among older children (ages 3 and 4) compared with younger children (ages 1 and 2).

Table ES.3. Estimated Average Monthly Number of WIC-Eligible Individuals by Year and Participant Category: CY 2005–CY 2015

Year	Infants	Total Children Aged 1–4	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Nonbreastfeeding Women	Total
2005	2,558,198	8,438,791	1,668,448	822,301	732,981	14,220,719
2006	2,547,352	8,199,817	1,661,374	853,615	718,203	13,980,361
2007	2,469,895	8,189,923	1,610,857	870,455	674,522	13,815,652
2008	2,444,907	8,565,160	1,594,559	867,826	670,086	14,142,538
2009	2,450,486	9,025,535	1,598,198	860,220	675,687	14,610,126
2010	2,492,692	9,100,231	1,625,725	879,159	691,372	14,789,179
2011	2,369,335	8,675,795	1,545,272	886,444	628,865	14,105,711
2012	2,293,360	8,752,082	1,495,721	876,592	599,108	14,016,863
2013	2,383,446	8,929,390	1,554,475	938,157	606,333	14,411,801
2014	2,451,750	9,347,672	1,599,023	998,025	608,838	15,005,308
2015	2,506,686	9,268,848	1,634,852	1,034,333	617,783	15,062,503

Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d

Figure ES.3. Trends in WIC Eligibility by Participant Category: CY 2005–CY 2015



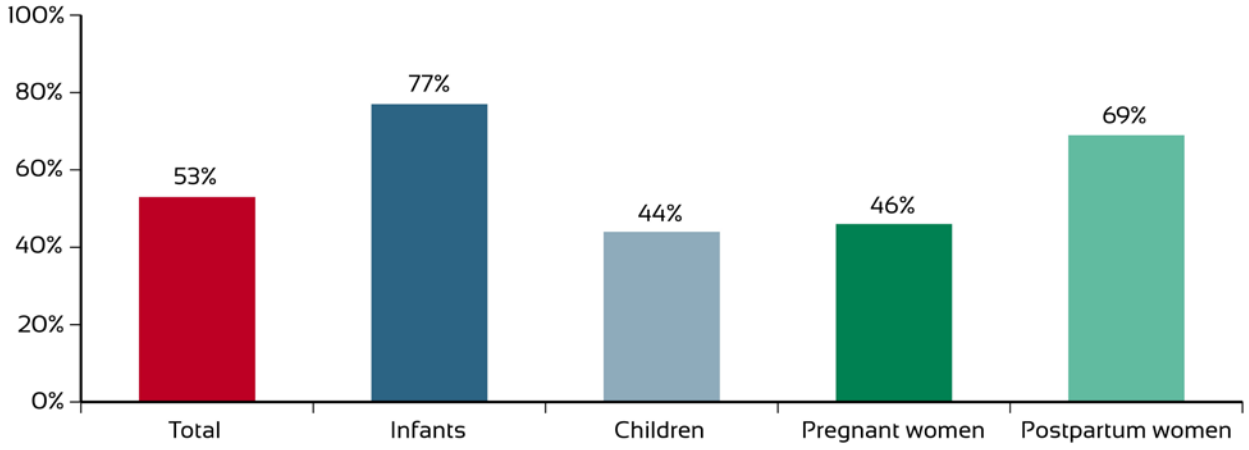
Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d

C. Coverage Rates

1. How many WIC-eligible women, infants, and children received WIC benefits in 2015?

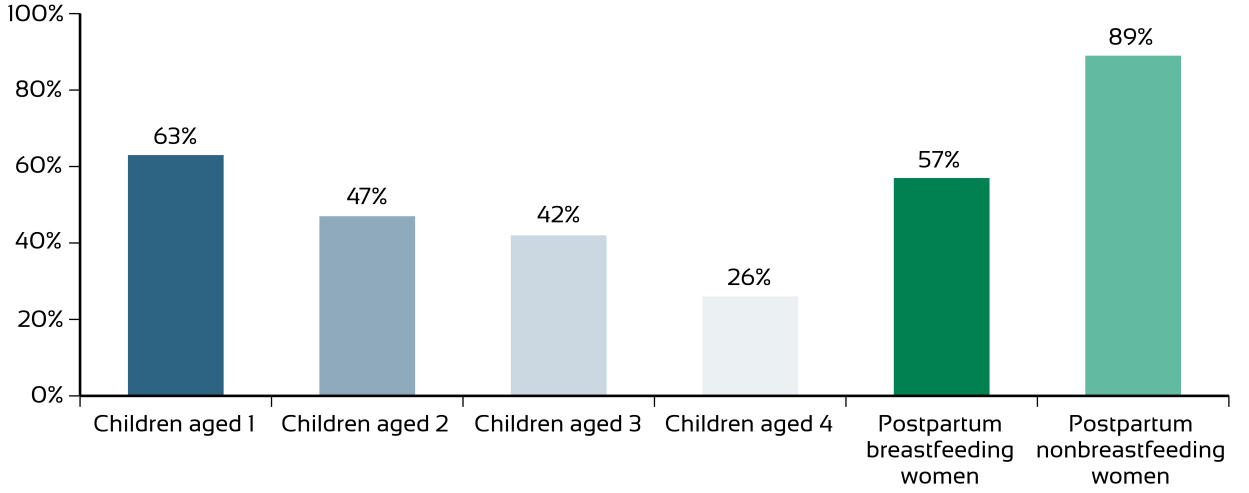
The percentages of WIC-eligible women, infants, and children who receive WIC benefits (known as coverage rates) are useful measures for understanding how well WIC reaches those who need the benefits provided by the program. Of the 15.1 million individuals eligible for WIC in an average month in CY 2015, 7.9 million received benefits, resulting in a national coverage rate of 53 percent. Coverage rates were highest for infants (77 percent) and lowest for children aged 1 to 4 (44 percent; see figure ES.4). However, coverage rates for children decreased with age, from a high of 63 percent for 1-year-olds to a low of 26 percent for 4-year-olds (see figure ES.5). Coverage rates were higher for postpartum women (69 percent) than pregnant women (46 percent), and rates were much higher for postpartum nonbreastfeeding women (89 percent) than postpartum breastfeeding women (57 percent).

Figure ES.4. WIC Coverage Rate by Participant Category: CY 2015



Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure ES.5. WIC Coverage Rates for Children by Age and Postpartum Women by Breastfeeding Status: CY 2015



Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Overall coverage rates were highest for Hispanics (63 percent) and lowest for White-Only Non-Hispanics (42 percent; see table ES.4). The coverage rate for Black-Only Non-Hispanics was 57 percent. This pattern of coverage rates by race and ethnicity was similar across most participant categories, but for infants and postpartum women, coverage rates were higher for Black-Only Non-Hispanics than Hispanics.

Table ES.4. WIC Coverage Rates (Percentages) by Race and Ethnicity: CY 2015

Participant Category	White-Only Non-Hispanic	Black-Only Non-Hispanic	Other Non-Hispanic	Hispanic	Total
Infants	63.3	91.6	85.2	82.8	76.9
Children aged 1–4	33.1	44.9	42.3	57.0	44.4
Pregnant women	42.8	49.1	39.9	50.4	46.4
Postpartum women	59.1	81.0	62.1	76.3	69.2
Total	**42.2**	**57.0**	**50.7**	**62.7**	**52.7**

Sources: NBER, n.d.; IPUMS-USDA, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

2. Did WIC coverage rates change between 2014 and 2015?

The national WIC coverage rate decreased by 2 percentage points (from 55 percent to 53 percent) between CY 2014 and CY 2015, primarily because of a decrease in WIC participation rather than a change in eligibility. The number of WIC participants dropped by 4 percent between CY 2014 and CY 2015; the effect of this decrease was slightly compounded by a small (0.4 percent) increase in the number of WIC-eligible individuals (see table ES.5).

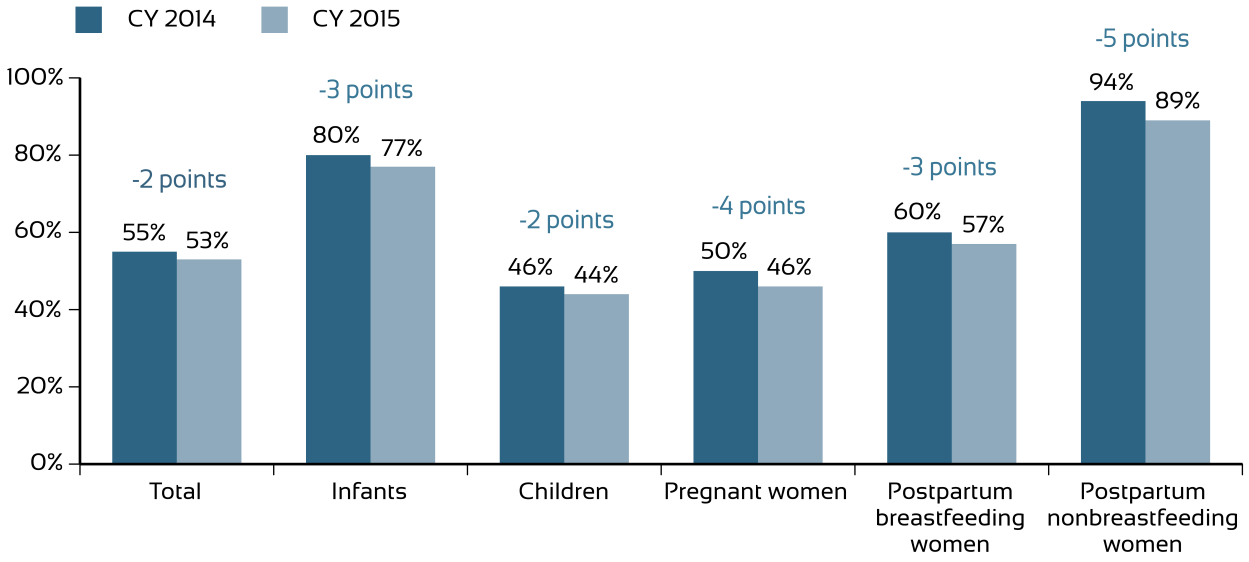
Coverage rates dropped for all participant categories; rates declined the least for children and postpartum breastfeeding women (by 2 percentage points each) and the most for postpartum nonbreastfeeding women (5 percentage points) and pregnant women (4 percentage points; see figure ES.6). These changes in coverage rates (both overall and for the participant categories) were not statistically significant when tested at the 90-percent confidence level. Therefore, it is not certain whether the changes between 2014 and 2015 were true changes or a result of sampling variability in the CPS-ASEC survey data.

Table ES.5. Change in WIC Coverage Rate by Participant Category: CY 2014–CY 2015

Participant Category	Total Eligibles		Percent Change	Total Participants		Percent Change	Coverage Rate (Percent)		Difference
	2014	2015		2014	2015		2014	2015	
Infants	2,451,750	2,506,686	2.2	1,961,762	1,927,670	-1.7	80.0	76.9	-3.1
Total children aged 1–4	9,347,672	9,268,848	-0.8	4,296,463	4,111,154	-4.3	46.0	44.4	-1.6
Pregnant women	1,599,023	1,634,852	2.2	802,892	758,250	-5.6	50.2	46.4	-3.8
All postpartum women	1,606,863	1,652,116	2.8	1,166,655	1,142,685	-2.1	72.6	69.2	-3.4
Postpartum breastfeeding women	998,025	1,034,333	3.6	593,826	593,604	0.0	59.5	57.4	-2.1
Postpartum nonbreastfeeding women	608,838	617,783	1.5	572,829	549,081	-4.1	94.1	88.9	-5.2
Total	**15,005,308**	**15,062,503**	**0.4**	**8,227,771**	**7,939,758**	**-3.5**	**54.8**	**52.7**	**-2.1**

Sources: NBER, n.d.; IPUMS-USA, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure ES.6. Change in WIC Coverage Rate by Participant Category: CY 2014–CY 2015



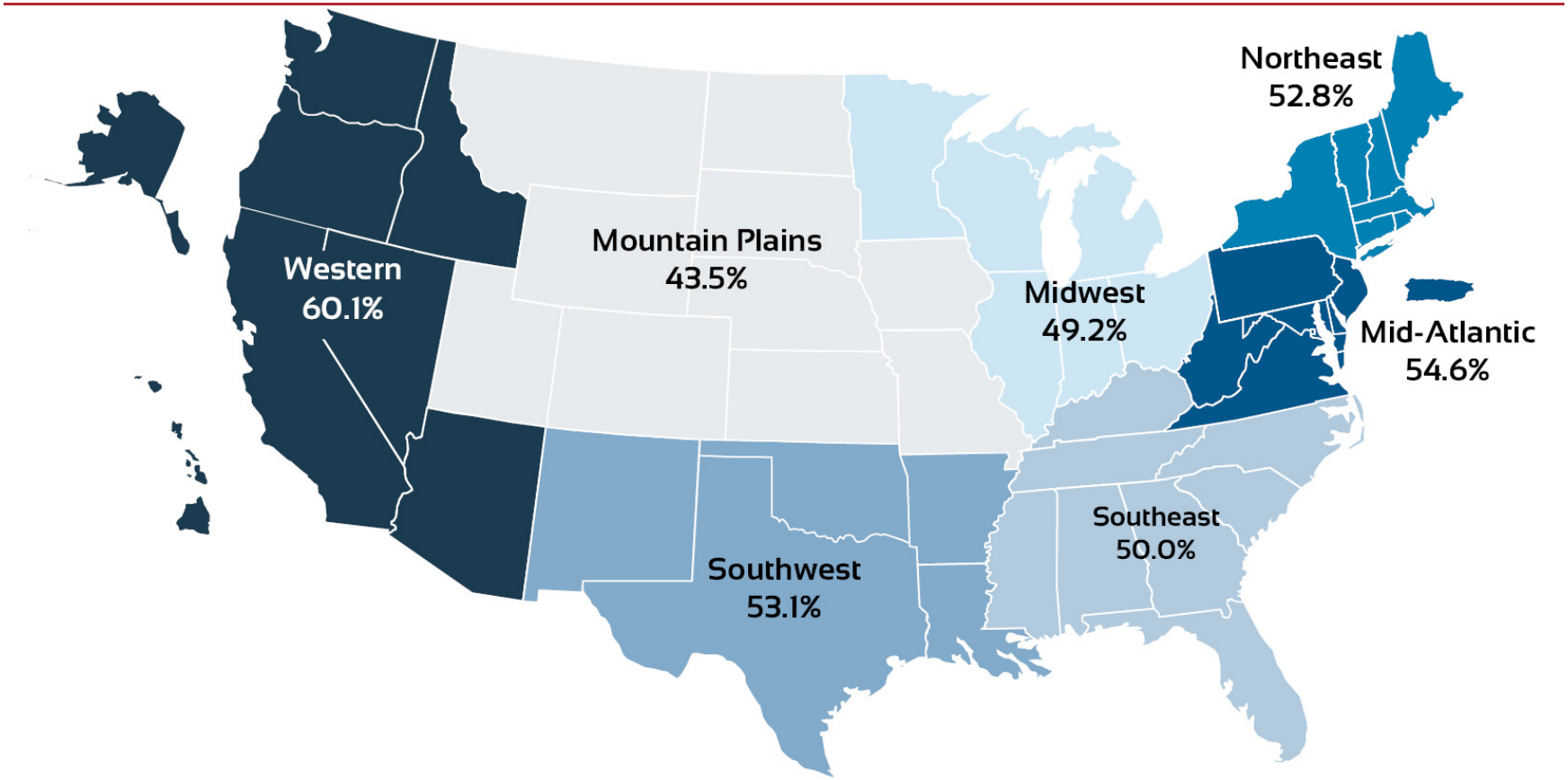
Sources: NBER, n.d.; IPUMS-USA, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

3. How did WIC coverage rates vary by region and State?

WIC coverage rates varied somewhat by region and more substantially by State. When comparing coverage rates across regions, the Western region had the highest rate (60 percent), and the Mountain Plains region had the lowest rate (44 percent) in comparison with the 53-percent national rate (see figure ES.7).

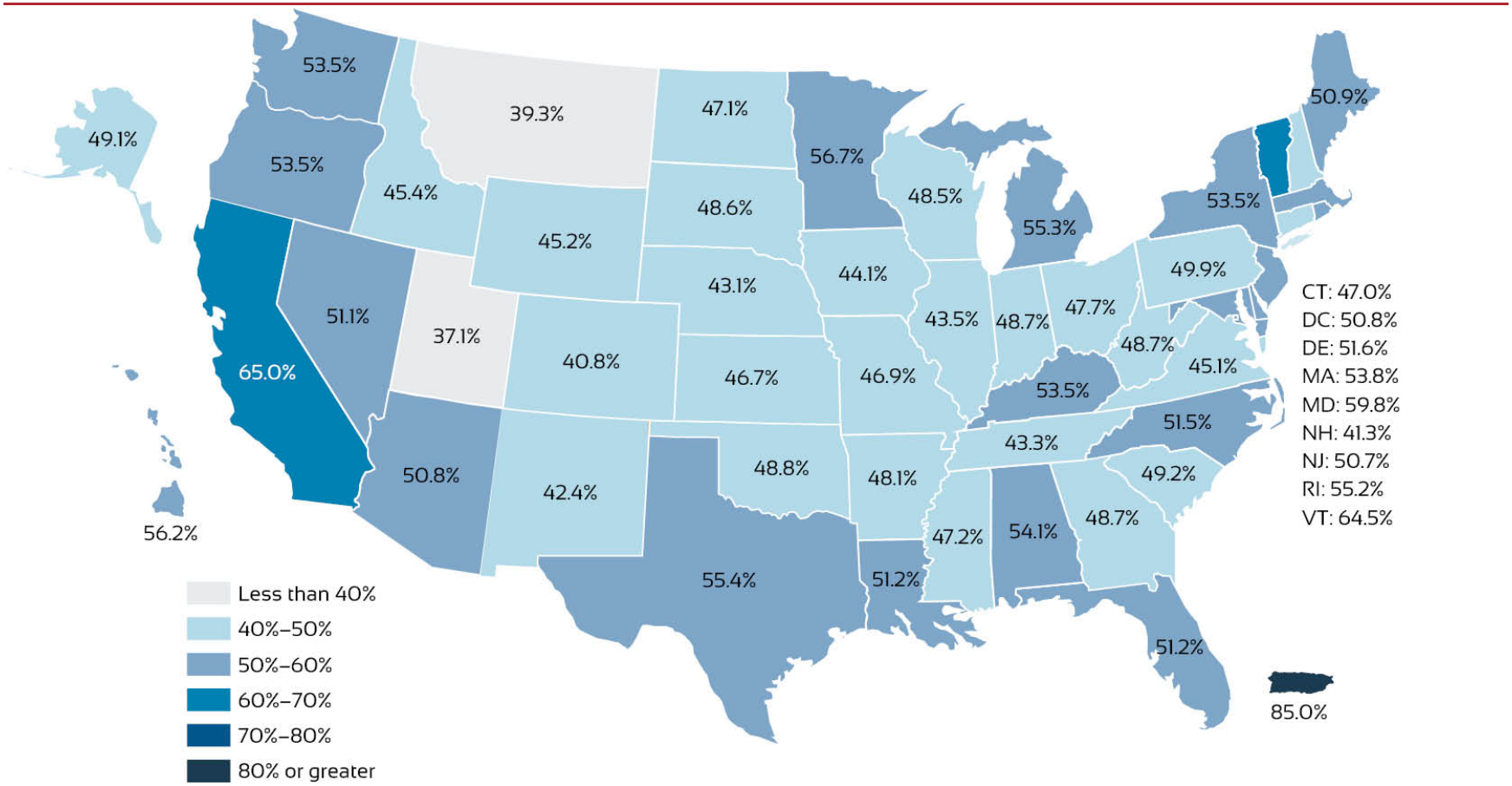
When comparing coverage rates by State, there was considerable variation. Rates ranged from a high of 65 percent in California and Vermont to a low of 37 percent in Utah, as compared with the national average coverage rate of 53 percent (see figure ES.8). Eight States and one U.S. territory had coverage rates higher than 55 percent (California, Hawaii, Maryland, Michigan, Minnesota, Puerto Rico, Rhode Island, Texas, and Vermont), and eight States had coverage rates lower than 44 percent (Colorado, Illinois, Montana, Nebraska, New Hampshire, New Mexico, Tennessee, and Utah); see table 4.7 in chapter 4 for details on State coverage rates.

Figure ES.7. WIC Coverage Rate for Total Eligible Individuals by FNS Region: CY 2015
National Coverage Rate: 52.7 Percent



Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure ES.8. WIC Coverage Rate for Total Eligible Individuals by State: CY 2015
National Coverage Rate: 52.7 Percent



Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

State rates by race and ethnicity were also generally consistent with average State rates for these groups. For example, similar to national coverage rates, State-level coverage rates were higher for Hispanics than for White-Only Non-Hispanics in every State except for Hawaii and Vermont (see table 4.9 in chapter 4).

4. What were the long-term trends in WIC coverage rates?

WIC coverage rates increased from 57 percent in 2005 to a high of 64 percent in 2011 and declined to 53 percent in 2015. The decline resulted from a decrease in participation (from 9.0 million in 2011 to 7.9 million in 2015) concurrent with an increase in eligible individuals (from 14.1 million in 2011 to 15.1 million in 2015; see table ES.6).

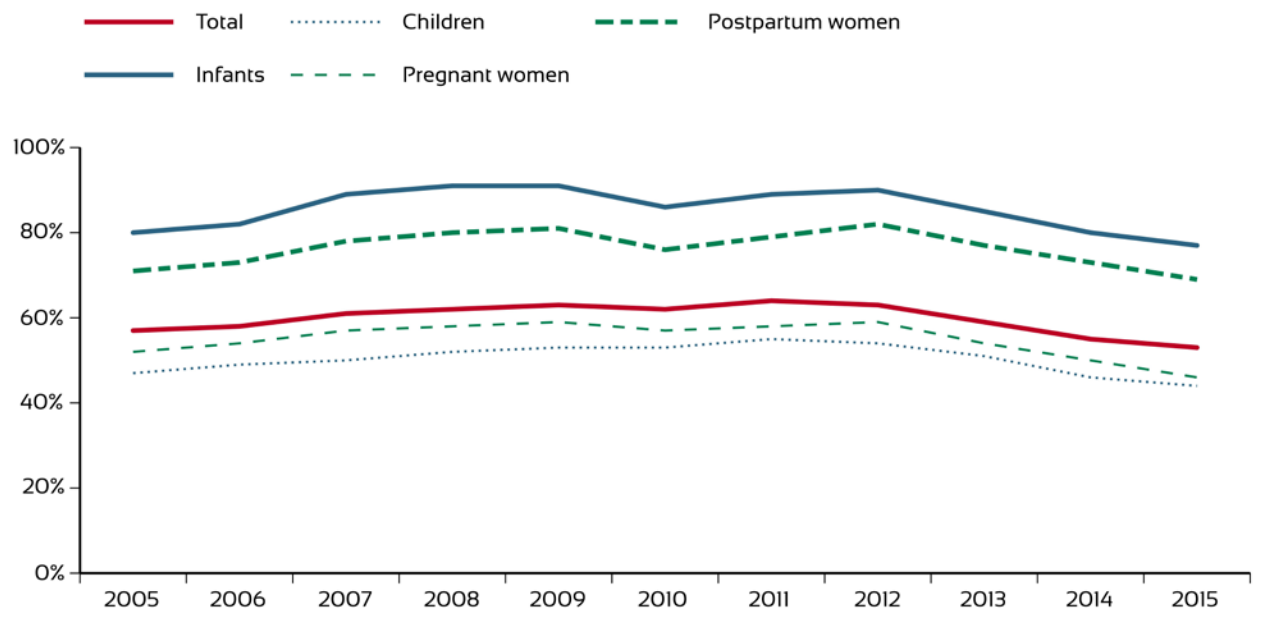
Table ES.6. WIC Coverage Rate: CY 2005–CY 2015

Year	Eligibles	Participants	Coverage Rate (Percent)
2005	14,220,718	8,030,466	56.5
2006	13,980,361	8,125,552	58.1
2007	13,815,651	8,375,991	60.6
2008	14,142,538	8,819,130	62.4
2009	14,610,125	9,185,532	62.9
2010	14,789,179	9,109,192	61.6
2011	14,105,710	8,950,226	63.5
2012	14,016,864	8,862,323	63.2
2013	14,411,800	8,546,724	59.3
2014	15,005,308	8,227,771	54.8
2015	15,062,503	7,939,758	52.7

Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

The relative magnitude of coverage rates by participant category was consistent from 2005 to 2015. Throughout that period, coverage rates were consistently highest for infants, followed by postpartum women, pregnant women, and children (see figure ES.9).

Figure ES.9. Trends in WIC Coverage Rates by Participant Category: CY 2005–CY 2015



Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

D. Participation Rates

1. What percentages of the total population of infants, children, and women received WIC benefits in 2015?

The percentages of the total population of infants, children, and women who receive WIC benefits (known as participation rates) are useful measures for understanding the overall reach of WIC across the population as a whole.

In CY 2015, 29 percent of the total WIC demographic population of infants, children, and women received WIC benefits. Almost half (48 percent) of all infants and about a quarter (26 percent) of all children aged 1–4 received WIC benefits (see table ES.7). A quarter (25 percent) of all pregnant women and 29 percent of all postpartum women received WIC benefits.

Table ES.7. WIC Participation as a Percentage of the Total Population (Participation Rate): CY 2015

Participant Category	Number Participating	Total Population	Participation Rate (Percent)
Infants	1,927,670	3,998,800	48.2
Total children aged 1–4	4,111,154	16,142,707	25.5
Children aged 1[a]	1,428,185	4,044,481	35.3
Children aged 2[a]	1,092,412	4,034,206	27.1
Children aged 3[a]	978,106	4,031,844	24.3
Children aged 4[a]	612,451	4,032,176	15.2
Pregnant women	758,250	2,987,403	25.4
Postpartum women	1,142,685	3,983,205	28.7
Breastfeeding women	593,604	2,147,025	27.6
Nonbreastfeeding women	549,081	1,836,179	29.9
Total	**7,939,758**	**27,112,115**	**29.3**

Notes

[a] WIC administrative data on participating children by year of age were not available. The numbers of participating children by year of age in this table are based on the distribution among children enrolled in WIC according to WIC PC2014 data.

Sources: NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Chapter 1. Introduction

The Special Supplemental Nutrition Program for Women, Infants and Children (WIC) provides nutritious supplemental foods; nutrition education; breastfeeding promotion and support; and referrals to health and social services for low-income and nutritionally at-risk pregnant, postpartum breastfeeding, and postpartum nonbreastfeeding women; infants; and children up to age 5. Administered by the U.S. Department of Agriculture's (USDA) Food and Nutrition Service (FNS), WIC provides services through State and local agencies in all 50 States; the District of Columbia;[4] 5 U.S. territories (American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands); and 34 Indian Tribal Organizations (ITOs). Eligible participants redeem benefits received through vouchers, checks, or electronic benefit transfer cards for foods they have been prescribed (for example, milk, juice, and cereal) from participating retail vendors at no charge.

Part of the Nation's nutrition safety net for more than 40 years, WIC served almost 8 million women, infants, and children per month in fiscal year (FY) 2016. To be eligible for WIC, an applicant must be categorically eligible as a pregnant, postpartum breastfeeding (up to 1 year postpartum), or postpartum nonbreastfeeding (up to 6 months postpartum) woman; an infant up to age 1 (the first birthday);[5] or a child up to age 5 (the fifth birthday).[6] Each applicant must also be income-eligible and at nutritional risk.

WIC is not an entitlement program; the number of eligible women, infants, and children that the program can serve depends on the amount of funding Congress provides for the program and how FNS allocates the funds to individual State agencies. Since approximately 2000, Congress has funded WIC at a level sufficient for the program to serve all eligible applicants. Annual WIC funding levels are based on the number of individuals eligible for WIC and the percentage of the eligible population likely to participate. FNS allocates funds to States based on a complex formula that takes into account both the previous year's funding and the estimated eligible population in each State. Accurately determining the number of individuals eligible for WIC and the number likely to participate enables FNS to better predict future funding needs, measure WIC program performance, and identify potentially unmet nutrition assistance needs.

This report presents estimates of the numbers of women, infants, and children eligible for WIC during an average month in calendar year (CY) 2015. It provides estimates by participant category (infants, children, pregnant women, and postpartum women) at the national, regional, State, and U.S. territory levels. It also provides estimates of the percentages of eligible individuals who participate in WIC (coverage rates) and the percentages of the total population of women, infants, and children who participate in WIC (participation rates).

The estimates presented in this report were prepared using the methodology originally developed in 2003 by the Committee on National Statistics (CNSTAT) of the National Research Council (Ver Ploeg & Betson, 2003). The national-level estimates are based primarily on 2016 Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) data (National Bureau of Economic Research [NBER], n.d.), and the State-level estimates are based primarily on 2015 American Community Survey (ACS) data (The Integrated Public Use Microdata Series-USA [IPUMS-USA], n.d.). Recently, the Urban Institute implemented substantial refinements and updated prior estimates generated for earlier

[4] Hereafter, this report includes the District of Columbia in references to States.
[5] An infant must be recertified as a child after the infant's first birthday.
[6] A child is eligible for WIC until the child's fifth birthday.

reports in this series to produce a set of estimates that use a consistent methodology for the entire period from 2005 through 2014 (Johnson, Betson, Blatt, & Giannarelli, 2017). The 2015 estimates in this report were created with the same methodology that was used to develop the 2014 estimates but with updated data and an improved data source for State-level breastfeeding rates.

Chapter 2 describes the data and methodology used to develop the 2015 WIC estimates. Chapter 3 presents the estimates of WIC-eligible individuals; chapter 4 provides the coverage rates; and chapter 5 presents the participation rates. Chapter 6 describes the measures of precision for the estimates. Additional details and tables are provided in volume II of this report.

Chapter 2. Methodology

This chapter describes the methodology used to produce the estimates of WIC-eligible individuals, coverage rates, and participation rates for 2015. To be eligible for WIC, an applicant must meet requirements for categorical and income or adjunctive eligibility, nutritional risk, and residency. Descriptions of these requirements follow.

- **Categorical Criteria.** A participant must be a pregnant, postpartum breastfeeding, or postpartum nonbreastfeeding woman; an infant up to age 1; or a child up to age 5.
- **Income Eligibility Criteria.** A participant's income may not exceed 185 percent of the U.S. Department of Health and Human Services (HHS) Federal Poverty Guidelines; these income guidelines are based on household size and the State or U.S. territory of residence.[7] Applicants must present proof of income such as recent paystubs or income tax returns.
- **Adjunctive Income Eligibility Criteria.** Individuals may be adjunctively income-eligible for WIC if they or certain household members can document participation in Medicaid, the Supplemental Nutrition Assistance Program (SNAP), or Temporary Assistance to Needy Families (TANF).[8]
- **Nutritional Risk.** A participant must be determined to be at nutritional risk based on a medical and/or nutritional assessment by a competent professional authority such as a physician, nurse, or nutritionist. The applicant must display at least one medical or dietary risk factor (such as anemia, underweight, or a poor diet) that may lead to a poor health outcome.
- **Residency.** An applicant must apply for and receive benefits in the State or U.S. territory of residence.[9]

A. Overview of Methods

The estimation procedures used to develop the WIC eligibility estimates presented in this report are based primarily on the methodology recommended by the CNSTAT panel members. In a report issued in 2003, the panel recommended using CPS-ASEC data for the initial counts of eligible infants and children in the 50 States and the District of Columbia (Ver Ploeg & Betson, 2003). The counts are refined through a series of adjustment factors designed to more closely mimic WIC program procedures**.** This methodology has been used to calculate the estimates for each report on WIC eligibility estimates. The numbers of infants and children who are income-eligible or adjunctively income-eligible are first estimated and then adjusted to account for differences between annual and monthly income and for nutritional risk. The number of WIC-eligible infants is then used as the starting point to estimate WIC-eligible pregnant and postpartum women. Because CPS data do not include information on pregnancy or breastfeeding status, estimates of WIC-eligible women are based on adjusted counts of WIC-eligible infants rather than separate counts of CPS-ASEC data. For postpartum women, separate estimates are produced for breastfeeding and nonbreastfeeding mothers because certification periods and benefits vary for these two groups.

[7] See USDA FNS (2014, 2015) for the Federal Poverty Guidelines used to calculate the WIC eligibility estimates presented in this report.
[8] WIC regulations also allow State agencies to extend automatic WIC income eligibility to applicants participating in other qualifying means-tested benefit programs with income eligibility thresholds less than or equal to those for WIC (see Special Supplemental Nutrition Program for Women, Infants and Children, 2014).
[9] Applicants applying for benefits through an ITO must meet the residency requirements established by that ITO.

State-level estimates of WIC-eligible individuals are prepared using the same general procedures used to develop the national-level estimates, but they are based on ACS data instead of CPS-ASEC data. CPS-ASEC data are considered a better source for national-level estimates because they include more complete income and program participation data, but ACS data are preferred for State-level estimates because of the relatively large sample sizes for all States. To create a consistent set of national- and State-level estimates, each State's share of the total ACS-based estimates is calculated, and the national-level estimates are then allocated across States according to each State's share. As a result, the sum of the State-level estimates is the same as the national total. State-level estimates are also summed to produce regional-level estimates. Estimates for Puerto Rico and the four other U.S. territories WIC serves (American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands) are prepared using procedures similar to those used to generate the national estimates; however, those estimates are based on data from the Puerto Rico Community Survey (PRCS) and the U.S. Census Bureau International Data Base (IDB), respectively.

The following data sources were used for the 2015 estimates: (1) 2016 CPS-ASEC data (NBER, n.d.); (2) 2015 ACS and PRCS data (IPUMS-USA, n.d.); and (3) 2015 IDB data (U.S. Census Bureau, n.d.d).

The step-by-step process for producing the 2015 national, State, and U.S. territory estimates of WIC-eligible individuals is explained in section B (for infants and children), section C (for pregnant women), and section D (for postpartum women). Section E explains the method used to calculate WIC coverage rates, and section F describes the method used to calculate participation rates. Section G highlights changes from the 2014 report.

Table 2.1 summarizes the steps, data sources, and adjustment factors used to estimate WIC eligibility in 2015. Table 2.2 shows the derivation of the number of WIC-eligible individuals at each step of the process and the final total number of eligible individuals. Tables 2.1 and 2.2 are provided at the end of this chapter.

B. Determining the Number of WIC-Eligible Infants and Children

The first step in estimating the number of WIC-eligible individuals was to estimate the number of WIC-eligible infants and children nationally, in each State, and in the U.S. territories WIC serves.[10] This section describes the process used to calculate these estimates.

1. National Estimates

a. Produce preliminary demographic counts of infants and children.

The first step in creating national estimates of WIC-eligible infants and children was to use 2016 CPS-ASEC data to produce preliminary demographic counts of the numbers of infants and children potentially served by WIC in CY 2015. These data were collected in spring 2016, and each household was asked to report income and program participation for the prior year (CY 2015).

[10] Data for those eligible for WIC through ITOs are included in the data for the State where the ITO is located.

b. Produce adjusted counts of infants and children.

The preliminary counts of infants and children were then adjusted to compensate for differences between the weighted counts of infants and children in the CPS-ASEC data and the U.S. Census Bureau population estimates. There were two possible reasons for these differences: the Census Bureau's weighting procedures were not designed to meet population targets by year of age, and the population estimates could have changed after the point in the process when the CPS-ASEC data were weighted. The adjustment factors (see table 2.1) reflected national population estimates (U.S. Census Bureau, n.d.a) by age, race and ethnicity, and gender during a 4-year period relative to the weighted counts in the CPS-ASEC data for the same period.[11] The adjustment factors inflated or deflated the CPS-ASEC counts by subgroup to better reflect the Census Bureau estimate for that subgroup. The adjustment factors were used only when differences between the 4-year accumulations in the Census Bureau data and the 2015 population figures were in the same direction.

c. Determine the number of income-eligible infants and children.

The CPS-ASEC data with adjusted counts of infants and children were then used to estimate the number of infants and children in an economic unit with annual income less than or equal to 185 percent of the Federal Poverty Guidelines (USDA FNS, 2014, 2015).[12] WIC regulations[13] specify that all the people living as one economic unit (that is, related or unrelated persons who contribute to the household income) are treated as one household for eligibility determination. The CPS-ASEC data did not explicitly indicate how household members share resources. For the purposes of estimating WIC eligibility, the economic unit was defined as all persons in the CPS-ASEC household who were related by blood, marriage, or adoption, plus the unmarried partner of any member of the household and that partner's dependents.[14]

d. Determine the number of adjunctively income-eligible infants and children.

Individuals who participate in Medicaid, SNAP, or TANF may be adjunctively income-eligible for WIC. Therefore, the next step in the process was to count infants and children who appeared adjunctively income-eligible according to data from the CPS-ASEC survey. This survey collects information on enrollment in each of these programs during the prior year. To avoid double-counting infants and children who were both directly income-eligible (based on income thresholds) and adjunctively income-eligible (based on participation in Medicaid, SNAP, or TANF), only those adjunctively income-eligible infants and children in households whose annual income exceeded 185 percent of the Federal Poverty Guidelines were added to the number of income-eligible infants and children.

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[11] The national-level weight adjustments were calculated separately by (1) age of infant or child (0, 1, 2, 3, or 4 years old); (2) race and ethnicity (White-Only Non-Hispanic, Black-Only Non-Hispanic, Other Non-Hispanic, or Hispanic); and (3) gender (female or male). Data for a 4-year period was used to minimize large year-to-year swings in the factors.

[12] HHS issues new Federal Poverty Guidelines each year at the beginning of July, but the reference period for annual income in CPS-ASEC data is for the calendar year; therefore, the poverty guidelines were averaged over 2 consecutive years to estimate income eligibility for WIC. For the 2015 estimates, the guidelines used to estimate WIC eligibility from July 2014 through June 2015 were averaged with the guidelines used from July 2015 through June 2016 (USDA FNS, 2014, 2015).

[13] For all references to WIC regulations in this report, see Special Supplemental Nutrition Program for Women, Infants and Children (2014).

[14] For example, if a CPS-ASEC household included a woman who was living with her children, her boyfriend, and the boyfriend's child from a prior relationship, all of those individuals would have been included in the economic unit for the purposes of calculating the WIC eligibility estimates in this report.

e. Adjust for fluctuations in monthly income and certification periods.

After determining the adjusted count of income-eligible or adjunctively income-eligible infants and children, adjustments were made to address (1) the differences between annual and monthly income and (2) the effects of 6- and 12-month certification periods.[15] The annual-to-monthly income adjustment accounted for how annual income data and program participation data could incorrectly estimate monthly eligibility.[16] The adjustment for certification periods accounted for how eligible infants were certified for a year, whereas some eligible children were certified for only 6 months and others for a year, depending on the State. After a participant's certification period ends, eligibility must again be demonstrated.[17] These adjustment factors—computed separately for infants and children by race and ethnicity and to reflect shorter certification periods for children in some States—were computed using data from the Survey of Income and Program Participation (SIPP), which allows month-by-month observation of family circumstances (see table 2.1; U.S. Census Bureau, n.d.f).[18] Appendix D describes in detail the method for calculating the annual-to-monthly adjustment factors applied to children based on State-specific adoptions of 12-month certification periods for WIC-eligible children.

f. Adjust for nutritional risk.

The final step in producing national estimates of WIC-eligible infants and children was to adjust for nutritional risk. WIC-eligible individuals must be determined to be at nutritional risk regardless of their income. The estimates were adjusted to account for the fact that a small percentage of otherwise eligible infants and children may not have been determined to be at nutritional risk. The study used the same set of nutritional risk adjustment factors developed for the original CNSTAT panel report (Ver Ploeg & Betson, 2003).

2. State Estimates

The State-level estimates of WIC-eligible infants and children were calculated using the same methods used to generate the national-level estimates but with 2015 ACS data instead of 2016 CPS-ASEC data.[19] That is, the number of infants and children were first identified in each State, and the counts were then adjusted to reflect State population estimates (U.S. Census Bureau, n.d.b).[20] The number of infants and children in WIC units with annual income less than or equal to 185 percent of the Federal Poverty Guidelines was determined, and the number of adjunctively income-eligible infants and children were

[15] The Healthy, Hunger-Free Kids Act of 2010 (Pub. L. 111–296) gave States the option of certifying WIC-eligible children every 12 months instead of every 6 months. Whether and when a State has adopted this option affects WIC eligibility for children.

[16] For example, family incomes may fluctuate during the year, which may result in an infant or child being eligible based on income in certain months rather than annual income, or based on annual income rather than income in certain months. Program participation in Medicaid, SNAP, and TANF may also fluctuate during the year.

[17] For example, an infant or child who appears ineligible based on annual income may have been eligible at the start of the year as a result of being certified in the prior year; conversely, a child who appears eligible based on annual income may have been eligible for only 6 months if the family income had increased by the time the child was recertified.

[18] Because the SIPP data needed to update these annual-to-monthly adjustments will not be available until 2018, the 2015 estimates were calculated using the same annual-to-monthly adjustments used for the 2014 estimates.

[19] Unlike the CPS-ASEC data, the ACS data provided information for each household member's relationship to the reference person (householder) rather than the members' relationships with each other. To gain a better understanding of relationships across all household members, which is important for determining WIC eligibility, the study team used Minnesota's Population Center's IPUMS data. IPUMS data provides users with educated conjectures about the relationships between household members not related to the reference person.

[20] For State estimates, the weight adjustments were calculated by age (within each State), not by gender or race and ethnicity.

added to the count. The annual-to-monthly factors and the nutritional risk factors were then applied.[21] The ACS-based counts of WIC-eligible infants and children were then summed across the States, and each State's share of the ACS-based national-level estimate was determined (separately by year of age[22] of participant) and then applied to the CPS-based estimate.

3. Territory Estimates

Estimates of WIC-eligible infants and children in Puerto Rico are based on the 2015 PRCS data and were created with the same methods and adjustments used to develop the national-level estimates. Estimates for the other four U.S. territories served by WIC are based on the 2015 IDB data for those areas. The estimates underwent two adjustments: (1) 2010 decennial census data were used to estimate the percentage of the population that was income-eligible, and (2) the relationship between income eligibility and adjunctive income eligibility in the Nation and Puerto Rico in 2015 was used to estimate the additional number of infants and children eligible through adjunctive eligibility.

C. Determining the Number of WIC-Eligible Pregnant Women

The next step in estimating WIC eligibility in 2015 was to determine the number of WIC-eligible pregnant women in the Nation, States, and five U.S. territories. Because the CPS-ASEC and ACS data do not include information about pregnancy, the final average monthly estimate of WIC-eligible infants was used as the starting point to estimate the number of WIC-eligible pregnant women. A series of adjustments was made to complete the estimate of pregnant women.

1. National Estimates

a. Adjust estimates for multiple births and infant deaths.

The number of pregnant women can differ from the number of infants because of (1) multiple births (which lower the number of pregnant women compared with that of infants) and (2) fetal and infant deaths (which raise the number of pregnant women compared with that of infants). To account for these two differences, a small adjustment factor was applied to the 2015 estimates of eligible infants (see table 2.1).

b. Adjust estimates for length of pregnancy and income during pregnancy.

The 2015 estimates were also adjusted to account for two factors: women are pregnant for 9 out of 12 months of the year,[23] and some mothers of WIC-eligible infants were not themselves eligible during pregnancy (see table 2.1).[24]

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[21] When the annual-to-monthly factors were applied at the State level, the two race and ethnicity factors were applied in each State. The factors for children varied by each State's implementation of 12-month certification.

[22] Age 0, 1, 2, 3, or 4

[23] The estimates calculate pregnant women as eligible from conception, which is consistent with federal WIC eligibility guidelines.

[24] According to the recommendations of the CNSTAT panel, a woman would be more likely to be working during pregnancy than after birth, so family income would be higher for women during pregnancy. Therefore, with all else equal, women would be less likely during pregnancy versus after birth to have an income below the eligibility threshold.

c. Adjust for nutritional risk.

The final adjustment to derive the number of pregnant women was to account for the fact that a small percentage of otherwise eligible pregnant women may not have been determined to be at nutritional risk. This adjustment was based on the same CNSTAT set of nutritional risk factors that was used to adjust the estimate for infants (see table 2.1).

2. State Estimates

Similar to how the national-level estimates of WIC-eligible pregnant women were derived, the State-level estimates were calculated by using the estimates of WIC-eligible infants as a starting point. The adjustments described earlier in this section were applied to the ACS-based infant eligibility estimates, which were then used to generate each State's share of the ACS-based total WIC-eligible pregnant women. Those shares were then applied to the national-level estimate of WIC-eligible pregnant women based on the CPS-ASEC data.

3. Territory Estimates

Estimates of WIC-eligible pregnant women in Puerto Rico and the other four U.S. territories were calculated with a method parallel to that used to estimate the number of WIC-eligible women in the Nation. The adjustments described earlier in this section were applied to the infant eligibility estimates for Puerto Rico and the other U.S. territories to derive the number of WIC-eligible pregnant women.

D. Determining the Number of WIC-Eligible Postpartum Women

The final step in estimating the number of WIC-eligible individuals in 2015 was to estimate the number of WIC-eligible postpartum breastfeeding and nonbreastfeeding women in the Nation, States, and U.S. territories. Similar to the estimates of WIC-eligible pregnant women, estimates of WIC-eligible postpartum women were calculated using adjusted counts of WIC-eligible infants instead of separate counts from CPS-ASEC data. Breastfeeding status is key to estimating WIC eligibility for postpartum women, and CPS-ASEC data do not identify breastfeeding status. A new mother may receive WIC benefits for 6 months if she is not breastfeeding and up to 12 months if she is breastfeeding. Therefore, information was needed on breastfeeding rates among WIC-eligible mothers during the first 6 months and second 6 months after giving birth and the rate at which breastfeeding mothers ceased breastfeeding during these two periods. These rates were applied to the count of postpartum women to estimate the numbers of postpartum breastfeeding and postpartum nonbreastfeeding women for 2015.

1. National Estimates

Similar to how the study team calculated the estimates for pregnant women, the team made a series of adjustments to the final average monthly estimate of WIC-eligible infants to create the national-level estimate of WIC-eligible postpartum women. A description of these adjustments follows.

a. Adjust estimates for multiple births and infant deaths.

The study team made the same adjustment to the number of WIC-eligible infants to estimate WIC-eligible postpartum women as it did to estimate WIC-eligible pregnant women. To account for the

combined effect of multiple births and fetal and infant deaths, the small adjustment factor was applied to the count of WIC-eligible infants (see table 2.1).

b. Adjust estimates for breastfeeding status.

National breastfeeding rates were used to adjust for breastfeeding status by racial/ethnic group for the 2015 estimates. The breastfeeding rates were drawn from the most recent National Immunization Survey (NIS) conducted by the Centers for Disease Control and Prevention (CDC): the 2014 and 2015 surveys for the 2013 birth cohort.[25] The CDC conducted special tabulations of the NIS data to provide breastfeeding rates for all mothers, WIC-participating mothers, and nonparticipating WIC-eligible mothers who gave birth in 2013. These data were collected at three points in time: during the mother's hospital stay after giving birth, at 6 months postpartum, and at 12 months postpartum. These data were also collected for four racial/ethnic groups: White-Only Non-Hispanic, Black-Only Non-Hispanic, Other Non-Hispanic, and Hispanic. This information was used to calculate adjustments to derive WIC-eligible postpartum women by breastfeeding status.

c. Adjust for nutritional risk.

All postpartum women were assumed to be at nutritional risk, so an adjustment factor of 1.0 was used (see table 2.1).

2. State Estimates

Similar adjustments to those applied to the CPS-ASEC data were applied to the ACS-based infant eligibility estimates to derive State-level estimates of WIC-eligible postpartum breastfeeding and nonbreastfeeding women. The ACS-based estimates were then used to generate each State's share of total WIC-eligible postpartum women, and those shares were applied to the national-level estimate of WIC-eligible postpartum women based on the CPS-ASEC data.

The 2015 estimates were calculated using the CDC NIS data, a new source of State-level data for breastfeeding rates. In contrast, the 2014 estimates were created using the data from the Abbott Laboratories' 2014 Infant Feeding Survey (IFS).[26] The NIS-based 2015 rates had three key advantages compared with the IFS-based 2014 rates. Unlike the IFS rates, the NIS rates (1) provided all the information needed to estimate breastfeeding status for WIC-eligible postpartum women without having to impute missing information; (2) allowed consistency in the measurement of breastfeeding and its duration between the State-level and national estimates; and (3) were based on known and reliable sample sizes and weighting method. In contrast, the IFS data could be used to create estimates only for WIC-participating mothers, which then had to be adjusted to impute rates for WIC-eligible mothers. National-level estimates of postpartum women were not affected by the change in data, but State-level estimates were; therefore, State-level estimates for 2015 should not be directly compared with those for 2014. See appendix E in volume II of this report for an assessment of the effect of using the NIS State-level breastfeeding rates on the State-level estimates of postpartum women.

[25] Unpublished internal CDC data
[26] Unpublished special tabulations of IFS data provided by FNS

3. Territory Estimates

National breastfeeding rates were used to estimate the numbers of breastfeeding and nonbreastfeeding WIC-eligible postpartum women in Puerto Rico and the other four U.S. territories served by WIC.

E. Computing Coverage Rates

This report defines WIC coverage rates as the ratio of the number of WIC participants to WIC-eligible individuals. The source for the number of WIC participants was WIC administrative data from FNS[27] on the number of individuals who were enrolled in WIC *and* claimed their benefits in an average month of CY 2015.[28] FNS provides these administrative counts of WIC program participants for each of five WIC participant categories: infants, children (ages 1–4), pregnant women, postpartum breastfeeding women, and postpartum nonbreastfeeding women.[29] The coverage rates were calculated based on the ratio of the 2015 number of WIC participants (numerator) to the 2015 estimates of WIC-eligible individuals (denominator).

The administrative data on WIC participant counts used for this study did not provide the numbers of participating children by year of age (ages 1, 2, 3, or 4) and did not count participants by race and ethnicity. However, these data were available in the 2014 report on WIC participant and program characteristics (WIC PC2014 report; Thorn et al., 2015). Therefore, the study team was able to apply the distribution of WIC-enrolled individuals across these participant categories to the total number of WIC participants to estimate coverage rates by age and race and ethnicity.[30]

National coverage rate estimates for 2015 were derived for infants, children by year of age, and pregnant and postpartum breastfeeding and nonbreastfeeding women, as well as by race and ethnicity (see chapter 3). State coverage rate estimates for 2015 were derived for all participant categories except for postpartum women. State coverage rates for postpartum women were not broken out by breastfeeding and nonbreastfeeding women because of sample size restrictions (see chapter 6 for measures of precision).

F. Computing Participation Rates Among the Total Population

This report defines WIC participation rates as the ratio of the number of WIC participants (overall and by participant category) to the number of individuals in the demographic population targeted by WIC (overall and by participant category). The participation rates provide information on the percentages of all infants, children, pregnant, and postpartum women who received WIC benefits in 2015.

National participation rate estimates for 2015 were derived for infants, children by year of age, pregnant women, and postpartum breastfeeding and nonbreastfeeding women (see chapter 3).

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[27] All WIC administrative data referenced in this report is unpublished internal FNS data.

[28] A small number of individuals who were enrolled in WIC during a given month may not have participated (claimed their benefits) from their State agencies that month.

[29] Unpublished special tabulations of calendar year WIC administrative data

[30] For example, to estimate the number of WIC participants who were 2 years old, WIC PC2014 data were used to estimate the percentage of all WIC-enrolled children with those characteristics; that proportion was then applied to the number of WIC-participating children from WIC administrative data.

G. Changes From Previous Year's Report

This section describes changes from the previous year's report on national and State-level estimates of WIC eligibles (Johnson et al., 2017). An explanation of the differences in the methods used to develop the 2015 estimates in this report versus the 2014 estimates in the prior report follows.

2015 estimates are based on data from an improved source of State-level data for breastfeeding rates for WIC-eligible postpartum women. The 2015 estimates were calculated with 3-year pooled State-level breastfeeding rates for WIC-eligible mothers from the 2015 CDC NIS data[31] to estimate WIC-eligible postpartum breastfeeding and nonbreastfeeding women at the State level. The 2014 estimates were calculated with State-level breastfeeding rates from the 2014 IFS data,[32] which limited the ability to create estimates for postpartum women. Unlike the IFS data, the NIS data (1) provided all the information needed to estimate WIC-eligible postpartum women without having to impute missing data; (2) allowed consistency in the measurement of breastfeeding rates and duration between the national and State-level estimates, and (3) had less measurement error. With the NIS data, the study team was able to create State-level estimates for postpartum women using the same methodology used to generate the national-level estimates. Appendix E assesses the effect on State-level postpartum eligibility and coverage rate estimates as a result of using State-level breastfeeding rates drawn from NIS data instead of IFS data.

Characteristics of WIC-eligible infants and children in table 3.2 were calculated using revised poverty definitions and categories. Table 3.2 in chapter 3 of this report was calculated using the Federal Poverty *Guidelines* issued annually by HHS and used for determining financial eligibility for Federal programs instead of the poverty *thresholds* issued by the U.S. Census Bureau to quantify annual poverty. The measures are similar, but because they are developed slightly differently, they result in different measures of poverty (University of Wisconsin-Madison, Institute for Research on Poverty, 2016). In contrast to the 2014 report, this report used slightly different cut points for the poverty categories in table 3.2. Using the Federal Poverty Guidelines and new cut points to calculate the distribution of WIC-eligible infants and children made it easier to present poverty characteristics for these groups in a manner consistent with how these characteristics are presented for WIC-participating infants and children in WIC PC reports.

2015 estimates include more detailed State-level coverage rates and participation rates among the total population. This report presents State-level coverage rates by race and ethnicity subgroups for the first time: White-Only Non-Hispanic, Other Non-Hispanic,[33] and Hispanic. The 2014 estimates report presented coverage rates by race and ethnicity for regions but not States. The 2015 estimates report also provides State-level participation rates among the total population for the first time; the 2014 estimates report provided this information at the national level only.[34]

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[31] Unpublished internal CDC data

[32] Unpublished special tabulations of IFS data provided by FNS

[33] For State-level rates, Other Non-Hispanic includes Black-Only Non-Hispanic and Other Non-Hispanic. These categories were combined because of sample size concerns.

[34] Another area of interest is State-level estimates by urban versus rural status. State-level rates by urban versus rural status were *not* calculated for this report because of limitations in the WIC PC2014 and ACS data for identifying whether WIC-participating and WIC-eligible individuals resided in urban or rural locations. Counting WIC participants by urban or rural residence would require collecting more detailed geographic data, such as ZIP Code information, on participants. Counting WIC-eligible individuals by urban or rural residence would require access to restricted use U.S. Census Bureau data.

The study team assessed the feasibility of using a replicate-weight method for calculating standard errors. Standard errors for the 2015 WIC estimates were calculated using a generalized variance approach. The generalized variance function is a simple model that expresses the variance of estimates as a function of the expected value of the survey estimate. The parameters of the generalized variance function are estimated using direct replicate variances. These generalized variance parameters provide a relatively easy method to obtain approximate standard errors for many key characteristics. The U.S. Census Bureau uses replication methods to estimate the standard errors of CPS and ACS estimates and recommends using replication methods because they provide the most accurate variance estimates. For the 2015 estimates, the study team researched the feasibility of utilizing the replicate-weight method to replace the generalized variance parameters currently used; this system will be fully developed and implemented with the 2016 estimates in next year's report.

Table 2.1. Steps, Data Sources, Methods, and Adjustment Factors Used for 2015 Estimates of WIC Eligibility

Step	Data Source(s)	Methods and Adjustment Factors	
Infants and Children			
Demographic eligibility	• 2016 CPS-ASEC (National estimates) • 2015 ACS (State estimates) • 2015 PRCS (Puerto Rico estimates) • 2015 IDB (Other U.S. territories estimates)	Identify individuals aged 0, 1, 2, 3, or 4 in the survey.	
Weight adjustment	• National estimates – 2015 "vintage" postcensal population estimates from the U.S. Census Bureau; March CPS-ASEC data for 2013, 2014, 2015, and 2016 • State and Puerto Rico estimates – 2015 "vintage" postcensal population estimates from the U.S. Census Bureau for July 2015	Adjust sampling weights to account for undercount or overcount in CPS estimates relative to U.S. Census Bureau estimates by year of age, gender, and four race/ethnic categories (White-Only Non-Hispanic, Black-Only Non-Hispanic, Other Non-Hispanic, and Hispanic).	
		Adjustment Factors for Females	***Adjustment Factors for Males***
		• Infants – White-Only Non-Hispanic: 1.014 – Black-Only Non-Hispanic: 1.099 – Other Non-Hispanic: 1.073 – Hispanic: 0.999 • Children aged 1 – White-Only Non-Hispanic: 1.002 – Black-Only Non-Hispanic: 0.942 – Other Non-Hispanic: 0.911 – Hispanic: 0.977 • Children aged 2 – White-Only Non-Hispanic: 1.006 – Black-Only Non-Hispanic: 1.018 – Other Non-Hispanic: 0.958 – Hispanic: 1.000 • Children aged 3 – White-Only Non-Hispanic: 1.007 – Black-Only Non-Hispanic: 1.000 – Other Non-Hispanic: 0.995 – Hispanic: 1.004 • Children aged 4 – White-Only Non-Hispanic: 1.008 – Black-Only Non-Hispanic: 0.969 – Other Non-Hispanic: 1.000 – Hispanic: 1.023	• Infants – White-Only Non-Hispanic: 1.006 – Black-Only Non-Hispanic: 1.122 – Other Non-Hispanic: 1.001 – Hispanic: 0.994 • Children aged 1 – White-Only Non-Hispanic: 1.001 – Black-Only Non-Hispanic: 0.868 – Other Non-Hispanic: 1.003 – Hispanic: 1.000 • Children aged 2 – White-Only Non-Hispanic: 1.000 – Black-Only Non-Hispanic: 1.075 – Other Non-Hispanic: 1.016 – Hispanic: 1.000 • Children aged 3 – White-Only Non-Hispanic: 1.000 – Black-Only Non-Hispanic: 1.007 – Other Non-Hispanic: 1.000 – Hispanic: 1.001 • Children aged 4 – White-Only Non-Hispanic: 1.000 – Black-Only Non-Hispanic: 0.965 – Other Non-Hispanic: 0.953 – Hispanic: 1.005

Step	Data Source(s)	Methods and Adjustment Factors
Income eligibility	• 2016 CPS-ASEC (National estimates) • 2015 ACS (State estimates) • 2015 PRCS (Puerto Rico estimates) • 2015 IDB (Other U.S. territories estimates) • Blended FY 2014 and FY 2015 Federal Poverty Guidelines	Count as eligible if prior year's annual income was ≤ 185 percent of the Federal Poverty Guidelines.
Adjunctive eligibility	• 2016 CPS-ASEC • 2015 ACS • 2015 PRCS	Add in as eligible those infants and children in families who reported participating in Medicaid, SNAP, or TANF at any point during the prior calendar year.
Adjust for fluctuations in monthly income and certification periods	Average of factors for 2010, 2011, and 2012 as computed from 2008 SIPP panel	Adjust estimates to account for impact of monthly fluctuations in income and program participation and for impact of 6- and 12-month certification periods. • Infants adjustment factors – White-Only Non-Hispanic: 1.20 – All others: 1.07 • Children adjustment factors – White-Only Non-Hispanic: 1.08 – All others: 1.03
Adjust for nutritional risk	CNSTAT panel	Multiply infant and child estimates by factor to account for otherwise eligible infants and children who might not be at nutritional risk. • Adjustment factors – Infants: 0.97 – Children: 0.99
Pregnant and Postpartum Women		
Starting point	Infants as estimated using methods outlined earlier in table	Use as a starting point the final average monthly eligibility estimate for infants.
Adjust for multiple births and infant deaths	Data on multiple births and infant and fetal deaths from 2004 vital statistics data; March 2004 U.S. Census Bureau estimates for count of infants	Multiply by factor to account for impact of multiple births and infant deaths (so the number of pregnant women/mothers is not exactly equal to the number of infants.). Adjustment factor: 0.9961
For pregnant women: Adjust for length of pregnancy and income during pregnancy	2001, 2004, and 2008 panels of SIPP data	Multiply by combined factor to account for (1) 9 months of pregnancy (0.75 factor) and (2) lower likelihood of financial eligibility during pregnancy versus after birth (0.9 factor). ***Adjustment factor:*** 0.675

Step	Data Source(s)	Methods and Adjustment Factors
For postpartum women: Adjust for breastfeeding status	CDC NIS breastfeeding rates computed for 2013 birth cohort (NIS survey years 2014 and 2015)	• Breastfeeding: Multiply by factors to estimate average monthly women eligible for WIC as breastfeeding mothers (0 < 12 months postpartum). • Nonbreastfeeding: Multiply by factors to estimate average monthly women eligible for WIC as nonbreastfeeding women < 6 months postpartum. • Breastfeeding – White-Only Non-Hispanic: 0.424 – Black-Only Non-Hispanic: 0.349 – Other Non-Hispanic: 0.416 – Hispanic: 0.438 • Nonbreastfeeding – White-Only Non-Hispanic: 0.246 – Black-Only Non-Hispanic: 0.284 – Other Non-Hispanic: 0.252 – Hispanic: 0.228
Adjust for nutritional risk	CNSTAT panel	Multiply pregnant and postpartum women estimates by factor to account for some otherwise eligible women who may not have been at nutritional risk. The estimates assume all postpartum women were at nutritional risk. ***Adjustment factor:*** 0.97 (pregnant women); 1.0 (postpartum women)

Notes

The data sources listed in this table are as follows, in order of mention: for 2016 CPS-ASEC data, see NBER, n.d.; for 2015 ACS and PRCS data, see IPUMS-USA, n.d.; for 2015 IDB data, see U.S. Census Bureau, n.d.d; for March 2013, 2014, 2015, 2016 CPS-ASEC data, see NBER, n.d.; for July 2015 postcensal population estimate data, see U.S. Census Bureau, n.d.b, n.d.e; for 2014 and 2015 Federal Poverty Guidelines data, see USDA FNS, 2014, 2015; for 2001, 2004, 2008 SIPP panel data, see U.S. Census Bureau, n.d.f; for CNSTAT panel data, see Ver Ploeg & Betson, 2003. CDC NIS breastfeeding rates are based on unpublished internal CDC data.

Table 2.2. Step-by-Step Adjustments Applied to CPS-ASEC Data To Derive the Average Monthly Number of WIC-Eligible Individuals by Participant Category: CY 2015

Step	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	Total Children Aged 1–4	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Nonbreastfeeding Women	Total
Total number of infants/ children in CPS-ASEC data	**3,876,774**	**4,095,235**	**3,972,103**	**3,979,739**	**3,998,906**	**16,045,983**	–	–	–	**19,922,757**
Number after adjustment for CPS undercount/overcount	3,959,291	4,005,000	3,993,610	3,989,613	3,989,850	15,978,073	–	–	–	19,937,364
Number with annual income ≤ 185 percent of the Federal Poverty Guidelines	1,654,704	1,558,345	1,539,215	1,617,637	1,600,639	6,315,836	–	–	–	7,970,540
Number adjunctively eligible and with annual income > 185 percent of the Federal Poverty Guidelines[a]	621,483	600,284	664,258	603,704	610,161	2,478,408	–	–	–	3,099,891
Through Medicaid	504,382	460,457	501,861	435,605	470,697	1,868,619	–	–	–	2,373,001
Through SNAP	110,205	137,327	157,209	166,246	139,261	600,043	–	–	–	710,248
Through TANF	6,897	2,501	5,188	1,852	203	9,745	–	–	–	16,642
Total number income and adjunctively eligible	2,276,187	2,158,629	2,203,473	2,221,341	2,210,800	8,794,243	–	–	–	11,070,431
Number after adjustment for monthly income and certification periods	2,545,826	2,263,820	2,310,980	2,330,240	2,319,571	9,224,611	–	–	–	11,770,437
Total number eligible: Number after adjustment for nutritional risk (infants and children)	2,469,451	2,241,182	2,287,870	2,306,938	2,296,376	9,132,365	–	–	–	11,601,816
Starting point for estimates of women is number of fully eligible infants	–	–	–	–	–	–	**2,469,451**	**2,469,451**	**2,469,451**	**7,408,353**
Number after adjustment for length of pregnancy and income of woman during pregnancy	–	–	–	–	–	–	1,666,879	–	–	1,666,879

Step	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	Total Children Aged 1–4	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Nonbreastfeeding Women	Total
Number after adjustment for multiple births and infant deaths	–	–	–	–	–	–	1,660,379	2,459,820	2,459,820	6,580,019
Number after adjustment for breastfeeding	–	–	–	–	–	–	–	1,018,940	608,622	1,627,562
Total number eligible: Number after adjustment for nutritional risk (pregnant and postpartum women)	–	–	–	–	–	–	1,610,567	1,018,940	608,622	3,238,130
Total number eligible in the Nation, excluding U.S. territories served by WIC	2,469,451	2,241,182	2,287,870	2,306,938	2,296,376	9,132,365	1,610,567	1,018,940	608,622	14,839,946
Total number eligible in all U.S. territories served by WIC[b]	37,235	33,804	34,080	33,620	34,979	136,483	24,285	15,392	9,161	222,557
Total number eligible in the Nation, including U.S. territories served by WIC	**2,506,686**	**2,274,986**	**2,321,950**	**2,340,558**	**2,331,355**	**9,268,848**	**1,634,852**	**1,034,333**	**617,783**	**15,062,503**

Notes

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

[b] See appendix B in volume II of this report for the derivation of WIC eligibles in U.S. territories.

"–" denotes blank cells.

Sources: NBER, n.d.; IPUMS-USA, n.d.; U.S. Census Bureau, n.d.d; Thorn et al., 2015

Chapter 3. WIC Eligibility Estimates for CY 2015

This chapter presents estimates of WIC-eligible individuals in CY 2015. Section A presents national-level estimates by participant group and describes the characteristics of WIC-eligible infants and children. Section B examines changes in the number of WIC-eligible individuals from CY 2014 to CY 2015. Section C presents regional- and State-level estimates, and section D describes long-term trends in WIC eligibility.

A. National-Level Estimates of WIC-Eligible Individuals

In an average month in CY 2015, 15.1 million individuals were eligible for WIC in all States and the U.S. territories served by WIC (see table 3.1). Of those eligible for WIC, more than half (62 percent) were children (ages 1–4), 17 percent were infants, and 22 percent were women (see figure 3.1). WIC-eligible children were evenly distributed by age; the distribution for each year of age ranged from 15 to 16 percent. Of WIC-eligible individuals, pregnant and postpartum women each represented about 11 percent of the population, and postpartum breastfeeding women represented a larger proportion than postpartum nonbreastfeeding women (7 percent versus 4 percent).

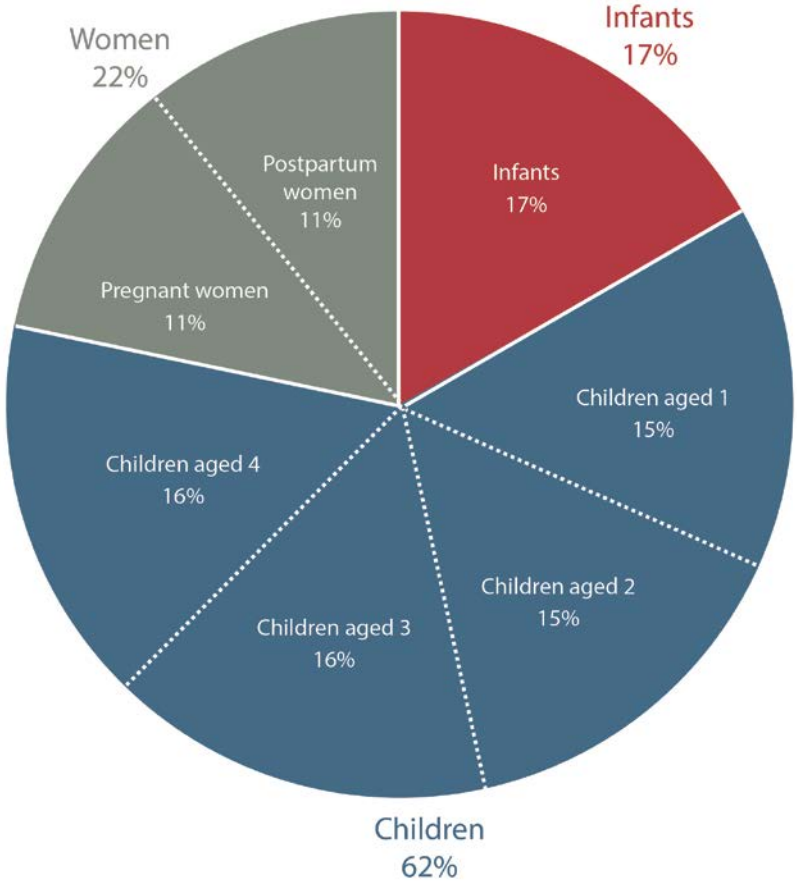
The eligibility rate is the percentage of the total population in each participant category that is estimated to be eligible for WIC. In an average month in CY 2015, almost two-thirds of all infants (63 percent) and 57 percent of all children aged 1 to 4 were eligible for WIC (see figure 3.2 and table 3.1). Almost 55 percent of all pregnant women and 42 percent of all postpartum women were eligible.

Table 3.1. Estimated Average Monthly Number of WIC-Eligible Individuals by Participant Category: CY 2015

Participant Category	Number Eligible	Percent of Total Eligible	Total Population[a]	Eligibility Rate[b] (Percent)
Infants	2,506,686	16.6	3,998,800	62.7
Total children aged 1–4	9,268,848	61.5	16,142,707	57.4
Children aged 1	2,274,986	15.1	4,044,481	56.2
Children aged 2	2,321,950	15.4	4,034,206	57.6
Children aged 3	2,340,558	15.5	4,031,844	58.1
Children aged 4	2,331,355	15.5	4,032,176	57.8
Total women	3,286,968	21.8	6,970,608	47.2
Pregnant women	1,634,852	10.9	2,987,403	54.7
Total postpartum women	1,652,116	11.0	3,983,205	41.5
Breastfeeding women	1,034,333	6.9	2,147,025	48.2
Nonbreastfeeding women	617,783	4.1	1,836,179	33.6
Total	**15,062,503**	**100.0**	**27,112,115**	**55.6**

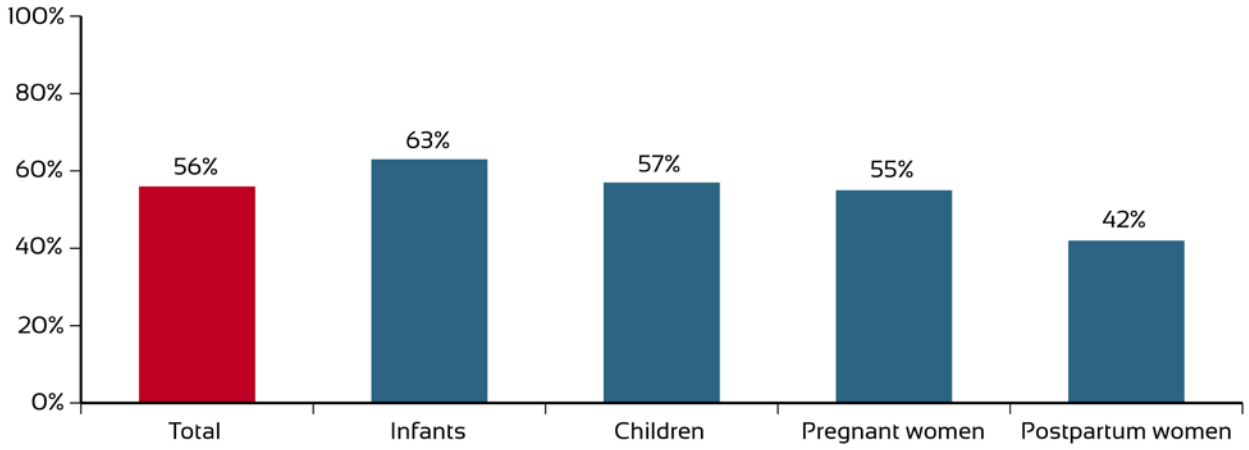
Notes
[a] The total population consists of individuals in the Nation and the U.S. territories served by WIC in each participant category.
[b] The eligibility rate is the ratio of total individuals eligible for WIC to the total population in each participant category.
Sources: NBER, n.d.; IPUMS-USA, n.d.; U.S. Census Bureau, n.d.d

Figure 3.1. Distribution of WIC-Eligible Individuals: CY 2015



Sources: NBER, n.d.; IPUMS-USA, n.d.; U.S. Census Bureau, n.d.d

Figure 3.2. WIC Eligibility Rates by Participant Category: CY 2015



Sources: NBER, n.d.; IPUMS-USA, n.d.; U.S. Census Bureau, n.d.d

1. Characteristics of WIC-Eligible Infants and Children

The CPS-ASEC data (NBER, n.d.) were used to examine the characteristics of the infants and children identified as eligible for WIC in CY 2015 (see table 3.2).[35] About half of WIC-eligible infants and children were male and half were female; about two-thirds were White (68 percent), 20 percent were Black, and the remaining (12 percent) were another race or multiple races. One-third of eligible infants and children were Hispanic (34 percent), and a majority lived in two-parent households (58 percent; see figure 3.3). Most lived in families receiving Medicaid (78 percent) and/or SNAP (42 percent). The characteristics of WIC-eligible infants and children were generally similar, but infants were more likely to live in two-parent households (63 percent versus 56 percent) and less likely to live with working parents (69 percent versus 74 percent).

The CPS-ASEC data were also used to examine the characteristics of infants and children who appeared to be solely adjunctively income-eligible (in households with income of more than 185 percent of the Federal Poverty Guidelines but participating in Medicaid, SNAP, or TANF) compared with those directly income-eligible for WIC (in households with income less than or equal to the Federal Poverty Guidelines.[36] For example, almost all infants and children who were solely adjunctively income-eligible received Medicaid (96 percent), and more than three-quarters (77 percent) received Medicaid but not SNAP or TANF. In comparison, 71 percent of directly income-eligible infants and children received Medicaid, and only 27 percent received Medicaid but not SNAP or TANF. Those who were adjunctively income-eligible were more likely to live in two-parent families (69 percent versus 53 percent) and live with one or more working parents (85 percent versus 68 percent) than those who were directly income-eligible.

[35] Table 3.2 presents characteristics of WIC-eligible infants and children based on the CPS-ASEC data using weights that were adjusted for the undercount/overcount, monthly income, certification periods, and nutritional risks of these individuals. Because WIC eligibility estimates for women were derived by applying proportional adjustments to the infant eligibility estimates rather than by directly observing individual cases in the survey data, comparable characteristics could not be computed for WIC-eligible women.

[36] Although 28 percent of all WIC-*eligible* infants and children appeared to be solely adjunctively income-eligible, among WIC *participants,* this percentage was reported to be much lower (1.3 percent in 2014; Thorn et al., 2015). There are various reasons for the relatively large percentage of participants who appeared to have income that exceeded 185 percent of the poverty guidelines. One reason is that State Medicaid income thresholds for infants and children are equal to or greater than 250 percent of the Federal Poverty Guidelines in many States and equal to or greater than 300 percent of the poverty guidelines in other States (Heberlein, Brooks, Artiga, & Stephens, 2013). Moreover, the programs that confer adjunctive eligibility use income disregards and do not necessarily count the income of all members of the family as defined by WIC.

Table 3.2. Distribution of the Average Monthly Numbers of Infants, Children, and Infants and Children Eligible for WIC (Percentages) by Demographic and Income Characteristics and Adjunctive Eligibility: CY 2015

Characteristics	WIC-Eligible Infants			WIC-Eligible Children Aged 1–4			WIC-Eligible Infants and Children Aged 0–4		
	Family Income ≤ 185% FPG[a]	Adjunctively Eligible[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible[b]	Total
Gender	–	–	–	–	–	–	–	–	–
Male	49.3	50.5	49.7	50.4	49.2	50.1	50.2	49.5	50.0
Female	50.7	49.5	50.3	49.6	50.8	49.9	49.8	50.5	50.0
Race	–	–	–	–	–	–	–	–	–
White	64.7	75.8	67.8	66.1	71.6	67.7	65.8	72.5	67.7
Black	23.8	12.4	20.6	21.9	16.3	20.3	22.3	15.5	20.4
Other	11.5	11.9	11.6	12.0	12.1	12.0	11.9	12.1	11.9
Ethnicity	–	–	–	–	–	–	–	–	–
Hispanic	36.8	25.7	33.7	34.9	30.5	33.7	35.3	29.5	33.7
Non-Hispanic	63.2	74.3	66.3	65.1	69.5	66.3	64.7	70.5	66.3
Living arrangement	–	–	–	–	–	–	–	–	–
Two-parent family	57.7	77.4	63.2	52.0	66.3	56.0	53.2	68.6	57.6
Single-parent family	37.6	19.7	32.7	42.0	29.2	38.4	41.1	27.2	37.2
No-parent family	4.6	2.8	4.1	6.0	4.6	5.6	5.7	4.2	5.3
Related nonparent caretaker	2.5	2.8	2.6	3.6	4.6	3.9	3.3	4.2	3.6
Unrelated nonparent caretaker	2.1	0.0	1.5	2.4	0.0	1.8	2.4	0.0	1.7
Number of people in household	–	–	–	–	–	–	–	–	–
2	3.9	0.0	2.8	6.2	4.2	5.6	5.7	3.3	5.0
3	20.9	34.8	24.7	19.4	22.6	20.3	19.7	25.2	21.3
4	27.6	32.4	29.0	27.8	33.4	29.4	27.8	33.2	29.3
5	22.2	15.9	20.4	22.5	19.9	21.8	22.4	19.1	21.5
6 or more	25.5	16.9	23.1	24.1	19.8	22.9	24.4	19.2	23.0

Characteristics	WIC-Eligible Infants			WIC-Eligible Children Aged 1–4			WIC-Eligible Infants and Children Aged 0–4		
	Family Income ≤ 185% FPG[a]	Adjunctively Eligible[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible[b]	Total
Number with working parent(s)	65.0	77.7	68.6	68.8	86.7	73.8	68.0	84.8	72.7
Annual family income relative to FPG[b]	–	–	–	–	–	–	–	–	–
No income	4.6	0.0	3.3	6.2	0.0	4.4	5.8	0.0	4.2
Up to 50% FPG	15.9	0.0	11.5	17.8	0.0	12.8	17.4	0.0	12.5
More than 50% up to 100% FPG	25.5	0.0	18.4	26.4	0.0	18.9	26.2	0.0	18.8
More than 100% up to 130% FPG	20.5	0.0	14.8	18.6	0.0	13.3	19.0	0.0	13.6
More than 130% up to 150% FPG	12.7	0.0	9.2	10.9	0.0	7.8	11.3	0.0	8.1
More than 150% up to 185% FPG	20.8	0.0	15.0	20.2	0.0	14.5	20.3	0.0	14.6
More than 185% up to 200% FPG	0.0	10.5	2.9	0.0	11.8	3.3	0.0	11.5	3.2
More than 200% FPG	0.0	89.5	24.8	0.0	88.2	25.0	0.0	88.5	24.9
Receipt of other benefits	–	–	–	–	–	–	–	–	–
No benefit receipt	23.1	0.0	16.7	22.9	0.0	16.4	22.9	0.0	16.5
Medicaid, SNAP, and TANF	6.0	1.5	4.7	5.0	2.5	4.3	5.2	2.3	4.4
SNAP and TANF only	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medicaid and SNAP only	36.8	13.2	30.3	38.8	16.9	32.6	38.3	16.1	32.1
Medicaid and TANF only	0.5	1.0	0.7	0.2	0.4	0.3	0.3	0.5	0.3

Characteristics	WIC-Eligible Infants			WIC-Eligible Children Aged 1–4			WIC-Eligible Infants and Children Aged 0–4		
	Family Income ≤ 185% FPG[a]	Adjunctively Eligible[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible[b]	Total
SNAP only	6.0	2.8	5.1	6.2	4.7	5.7	6.1	4.3	5.6
TANF only	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medicaid only	27.5	81.5	42.5	27.0	75.5	40.7	27.1	76.8	41.1
Total	**1,784,223**	**685,228**	**2,469,451**	**6,548,812**	**2,583,553**	**9,132,365**	**8,333,035**	**3,268,781**	**11,601,816**

Notes

[a] The WIC economic unit is defined as all persons in the CPS-ASEC household who are related by blood, marriage, or adoption, plus the unmarried partner of any family member as well as that partner's dependents. Infants and children in economic units with annual income less than or equal to 185 percent of the Federal Poverty Guidelines for the unit's size are income-eligible for WIC.

[b] Adjunctively income-eligible infants and children were in economic units that reported participating in Medicaid, SNAP, or TANF during the prior year and had annual income exceeding 185 percent of the Federal Poverty Guidelines for the unit's size.

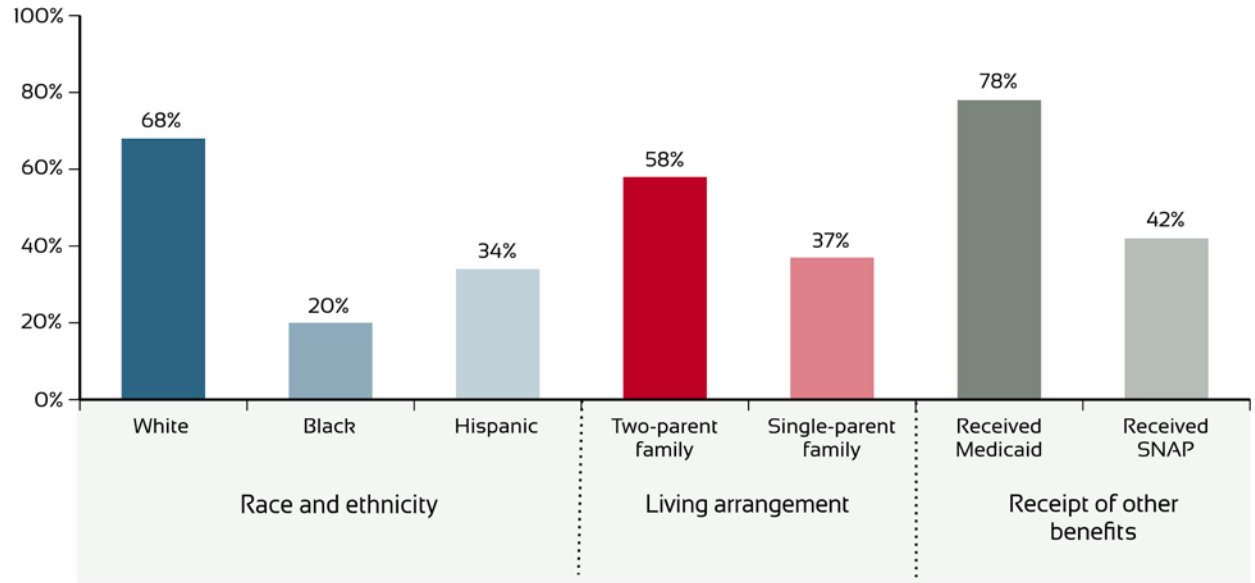
This table does not include estimates for the U.S. territories.

"–" denotes blank cells.

FPG = Federal Poverty Guidelines

Source: NBER, n.d.

Figure 3.3. Characteristics of WIC-Eligible Infants and Children



Note
The race and ethnicity categories are not mutually exclusive because the race categories include both Hispanics and non-Hispanics.
Source: NBER, n.d., IPUMS-USA, n.d.

B. Changes in the Numbers of WIC-Eligible Individuals: CY 2014–CY 2015

The total number of individuals eligible for WIC increased only slightly between CY 2014 and CY 2015, from 15.0 million to 15.1 million, an increase of only 0.4 percent (see table 3.3). The number of eligible infants increased by 2.2 percent, but the number of eligible children dropped slightly by 0.8 percent.

Because the estimated number of eligible infants was used as the starting point for estimating the number of eligible pregnant and postpartum women, the increase in the number of infants resulted in an increase in the number of women. The number of eligible pregnant women increased by 2.2 percent (equal to the percentage increase in eligible infants), and the number of eligible postpartum women increased by 2.8 percent.[37] The number of eligible breastfeeding women increased by 3.6 percent, but the number of eligible nonbreastfeeding women increased by only 1.5 percent.

[37] The increase in the number of eligible postpartum women was affected by both the number of eligible infants and the increase in breastfeeding rates between 2014 and 2015.

The changes in the numbers of WIC-eligible individuals (both overall and for the participant categories) are not statistically significant when tested at the 90-percent confidence level.[38] Therefore, it is not certain whether the changes in WIC eligibility between 2014 and 2015 were true changes or a result of sampling variability in the CPS-ASEC survey data.

The percentage changes in the WIC-eligible population shown in table 3.3 can also be viewed as the combined change in the total population for each participant category and the eligibility rate for each category. For infants, the 2.2-percent increase in the total number of eligibles can be attributed to the 1.0-percent increase in the total population of infants and the 1.2-percent increase in the eligibility rate among those infants. The increase in the eligibility rate appears to have been driven largely by an increase in adjunctive income eligibility through participation in Medicaid. The number of infants adjunctively income-eligible for WIC through Medicaid increased by 17 percent between CY 2014 and CY 2015 (see appendix A in volume II of this report). For children, the small (0.8 percent) drop in the total number of eligibles can be attributed primarily to the 0.9-percent decrease in the eligibility rate among children (combined with the miniscule increase of 0.01 percent in the total population of children).

[38] The statistical significance testing was conducted on the 2014–2015 change in WIC eligibility based on the CPS-ASEC data, which included data only for the 50 States and the District of Columbia. It did not include data for Puerto Rico or the other four U.S. territories served by WIC.

Table 3.3. Changes in the Total Population, Total WIC Eligibles, and WIC Eligibility Rates by Participant Category: CY 2014–CY 2015

Participant Category	Total Population		Percent Change	Total WIC Eligibles		Percent Change	WIC Eligibility Rate		Percent Change
	2014	2015		2014	2015		2014	2015	
Infants	3,958,480	3,998,800	1.0	2,451,750	2,506,686	2.2	61.9	62.7	1.2
Total children aged 1–4	16,141,207	16,142,707	0.0	9,347,672	9,268,848	-0.8	57.9	57.4	-0.9
Children aged 1	4,030,564	4,044,481	0.3	2,312,140	2,274,986	-1.6	57.4	56.2	-1.9
Children aged 2	4,005,410	4,034,206	0.7	2,318,334	2,321,950	0.2	57.9	57.6	-0.6
Children aged 3	4,065,415	4,031,844	-0.8	2,357,342	2,340,558	-0.7	58.0	58.1	0.1
Children aged 4	4,039,819	4,032,176	-0.2	2,359,857	2,331,355	-1.2	58.4	57.8	-1.0
Pregnant women	2,957,281	2,987,403	1.0	1,599,023	1,634,852	2.2	54.1	54.7	1.2
All postpartum women	3,943,041	3,983,205	1.0	1,606,863	1,652,116	2.8	40.8	41.5	1.8
Breastfeeding women	2,087,752	2,147,025	2.8	998,025	1,034,333	3.6	47.8	48.2	0.8
Nonbreastfeeding women	1,855,289	1,836,179	-1.0	608,838	617,783	1.5	32.8	33.6	2.5
Total	**27,000,009**	**27,112,115**	**0.4**	**15,005,308**	**15,062,503**	**0.4**	**55.6**	**55.6**	**0.0**

Sources: NBER, n.d.; IPUMS-USA, n.d.; U.S. Census Bureau, n.d.d

C. Regional- and State-Level Estimates of WIC-Eligible Individuals

The number of individuals eligible for WIC varied across regions and States because of differences in total populations, demographic characteristics, income levels, and State policy choices (see appendix B for a list of States and U.S. territories by region). In CY 2015, the Southeast and Western regions had the largest percentages of eligible individuals (21 percent for each; see table 3.4). In contrast, the Northeast and Mountain Plains regions had the smallest percentages of eligible individuals (9 percent and 8 percent, respectively). The distribution of WIC eligibility shows similar regional variations by participant category.

WIC CY 2015 eligibility rates, which indicate the percentage of the total population in each participant category that was eligible for WIC, were highest in the Southeast and Southwest regions (61 percent for each) and lowest in the Mid-Atlantic region (50 percent) as shown in table 3.5. Eligibility rates by participant category show similar variations by region (see figure 3.4)

By State, California had the largest share of WIC eligibles (13 percent), reflecting its large population (see table 3.6). The States with the four largest eligible populations (California, Texas, Florida, and New York) had 35 percent of the total U.S. WIC population in CY 2015.

Table 3.4. Distribution of WIC Eligibles (Percentages) by FNS Region and Participant Category: CY 2015

FNS Region	Infants	Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Northeast	8.7	8.8	8.7	9.4	8.8
Mid-Atlantic	11.2	11.3	11.2	11.2	11.3
Southeast	21.5	21.1	21.5	20.2	21.1
Midwest	14.8	14.9	14.8	14.1	14.8
Southwest	15.9	15.7	15.9	15.2	15.7
Mountain Plains	7.9	7.5	7.9	8.1	7.7
Western	20.0	20.6	20.0	21.8	20.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d

Table 3.5. WIC Eligibility Rates (Percentages) by FNS Region and Participant Category: CY 2015

Eligibility Rate 2015	Infants	Children Aged 1–4	Pregnant Women	All Postpartum Women	Total
Northeast	56.2	52.4	49.1	39.7	50.7
Mid-Atlantic	56.8	51.9	49.6	37.5	50.2
Southeast	70.3	63.4	61.4	44.3	61.4
Midwest	59.4	54.6	51.8	37.8	52.6
Southwest	68.7	62.8	60.0	43.8	60.6
Mountain Plains	58.9	51.4	51.4	39.6	50.8
Western	62.0	58.5	54.1	44.1	56.4
Total	**62.7**	**57.4**	**54.7**	**41.5**	**55.6**

Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d

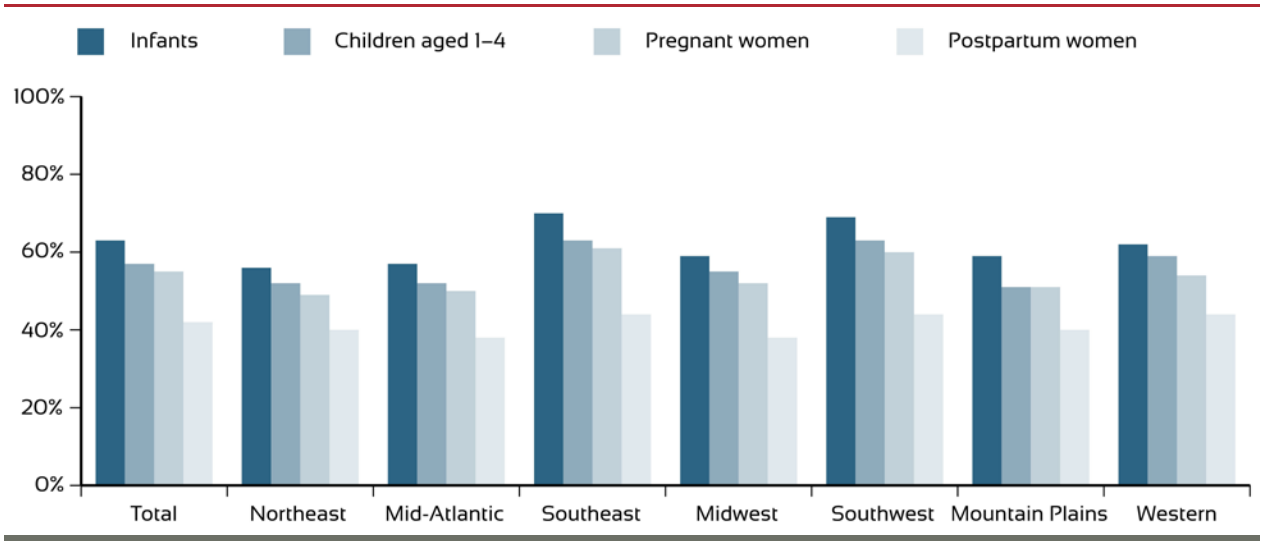
Table 3.6. Distribution of WIC Eligibles (Percentages) by State and FNS Region: CY 2015

State[a]	Percent Share of National Estimate of WIC Eligibles
Alabama	1.6
Alaska	0.3
Arizona	2.2
Arkansas	1.2
California	12.7
Colorado	1.5
Connecticut	0.7
Delaware	0.2
District of Columbia	0.2
Florida	6.3
Georgia	3.6
Hawaii	0.4
Idaho	0.6
Illinois	3.7
Indiana	2.1
Iowa	0.9
Kansas	0.9
Kentucky	1.4
Louisiana	1.7
Maine	0.3
Maryland	1.6
Massachusetts	1.4
Michigan	2.9
Minnesota	1.4
Mississippi	1.2
Missouri	1.9
Montana	0.3
Nebraska	0.6
Nevada	0.9
New Hampshire	0.2
New Jersey	2.1
New Mexico	0.8
New York	5.8
North Carolina	3.2
North Dakota	0.2
Ohio	3.4
Oklahoma	1.5
Oregon	1.2
Pennsylvania	3.3
Puerto Rico	1.3

State[a]	Percent Share of National Estimate of WIC Eligibles
Rhode Island	0.2
South Carolina	1.5
South Dakota	0.3
Tennessee	2.3
Texas	10.5
Utah	1.0
Vermont	0.1
Virginia	2.0
Washington	2.2
West Virginia	0.6
Wisconsin	1.4
Wyoming	0.2
FNS Region[b]	
Northeast	8.8
Mid-Atlantic	11.3
Southeast	21.1
Midwest	14.8
Southwest	15.7
Mountain Plains	7.7
Western	20.6
Total	**100.0**

Notes
[a] State and regional eligibility estimates include individuals in ITOs who were eligible for WIC.
[b] Estimates for U.S. territories other than Puerto Rico are included in regional totals but not shown separately because of constraints related to small sample size.
Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d

Figure 3.4. WIC Eligibility Rates by Region and Participant Category: CY 2015



Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d

D. Long-Term Trends in WIC Eligibility Estimates: CY 2005–CY 2015

Overall, the number of WIC-eligible individuals increased only slightly from 2005 to 2015. During this 10-year period, the number of eligible individuals increased by 842,000, or less than 6 percent (see table 3.7). The total number fluctuated over this period: it fell from 14.2 million in 2005 to 13.8 million in 2007, increased to 14.8 million in 2010 (during the Great Recession), declined following the recession to 14.1 million, and has increased every year since 2012, reaching 15.1 million in 2015.

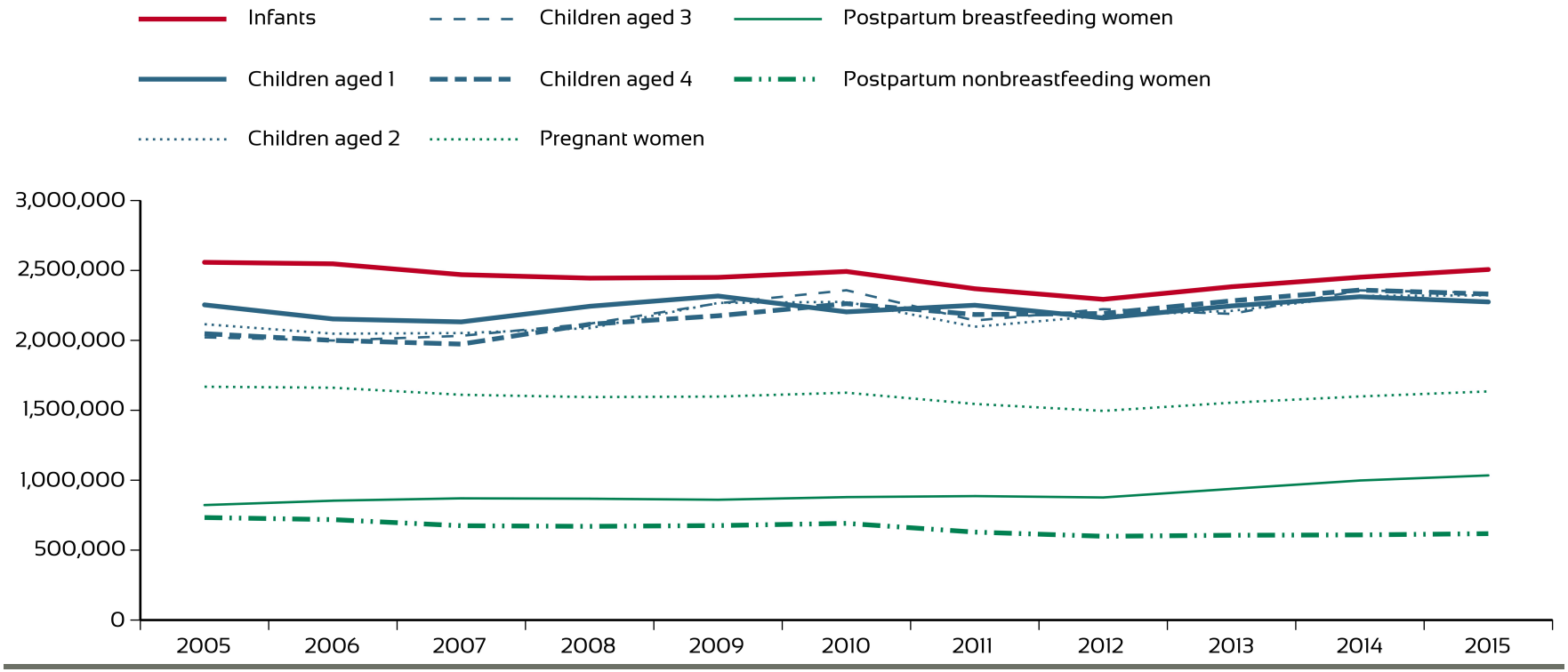
As table 3.7 shows, the relative share of the eligible population by participant category has remained the same over time: children have consistently made up the largest category, followed by infants, pregnant women, postpartum breastfeeding women, and postpartum nonbreastfeeding women. As figure 3.5 shows, the relative share of eligible children by age group has also remained stable over time, with a slight increase among older children (ages 3 and 4) compared with younger children (ages 1 and 2).

Table 3.7. Estimated Average Monthly WIC Eligibility by Year and Participant Category: CY 2005–CY 2015

Year	Infants	Total Children Aged 1–4	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Nonbreastfeeding Women	Total
2005	2,558,198	8,438,791	1,668,448	822,301	732,981	14,220,719
2006	2,547,352	8,199,817	1,661,374	853,615	718,203	13,980,361
2007	2,469,895	8,189,923	1,610,857	870,455	674,522	13,815,652
2008	2,444,907	8,565,160	1,594,559	867,826	670,086	14,142,538
2009	2,450,486	9,025,535	1,598,198	860,220	675,687	14,610,126
2010	2,492,692	9,100,231	1,625,725	879,159	691,372	14,789,179
2011	2,369,335	8,675,795	1,545,272	886,444	628,865	14,105,711
2012	2,293,360	8,752,082	1,495,721	876,592	599,108	14,016,863
2013	2,383,446	8,929,390	1,554,475	938,157	606,333	14,411,801
2014	2,451,750	9,347,672	1,599,023	998,025	608,838	15,005,308
2015	2,506,686	9,268,848	1,634,852	1,034,333	617,783	15,062,503

Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d

Figure 3.5. Trends in WIC Eligibility by Participant Category: CY 2005–CY 2015



Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d

Chapter 4. WIC Coverage Rates for CY 2015

This chapter presents CY 2015 estimates of the numbers of WIC participants as percentages of the number of WIC eligible women, infants, and children (known as coverage rates) The coverage rates were calculated as the average monthly numbers of WIC participants divided by the average monthly numbers of WIC-eligible individuals during the 12 months of CY 2015. WIC coverage rates are useful for understanding how well WIC reaches those who need the benefits provided by the program.

Section A presents 2015 national WIC coverage rates by participant category and by race and ethnicity. Section B examines changes in coverage rates from CY 2014 to CY 2015. Section C presents regional- and State-level coverage rates, and section D discusses long-term trends.

A. National-Level WIC Coverage Rates

Of the 15.1 million individuals eligible for WIC in an average month in CY 2015, 7.9 million participated, resulting in a 53-percent national coverage rate (see table 4.1). Coverage rates were highest for infants (77 percent) and lowest for children aged 1 to 4 (44 percent; see figure 4.1). However, coverage rates for children decreased with age; rates were highest for 1-year-olds (63 percent) and lowest for 4-year-olds (26 percent; see figure 4.2). Coverage rates were higher for postpartum women (69 percent) than pregnant women (46 percent), and rates were much higher for postpartum nonbreastfeeding women (89 percent) than postpartum breastfeeding women (57 percent).[39]

Overall coverage rates were highest for Hispanics (63 percent) and lowest for White-Only Non-Hispanics (42 percent; see table 4.2). The coverage rate for Black-Only Non-Hispanics was 57 percent. This pattern of coverage rates by race and ethnicity was similar for most participant categories, but for infants and postpartum women, coverage rates were higher for Black-Only Non-Hispanics than Hispanics (see figure 4.3).

Table 4.1. WIC National-Level Coverage Rates by Participant Category: CY 2015

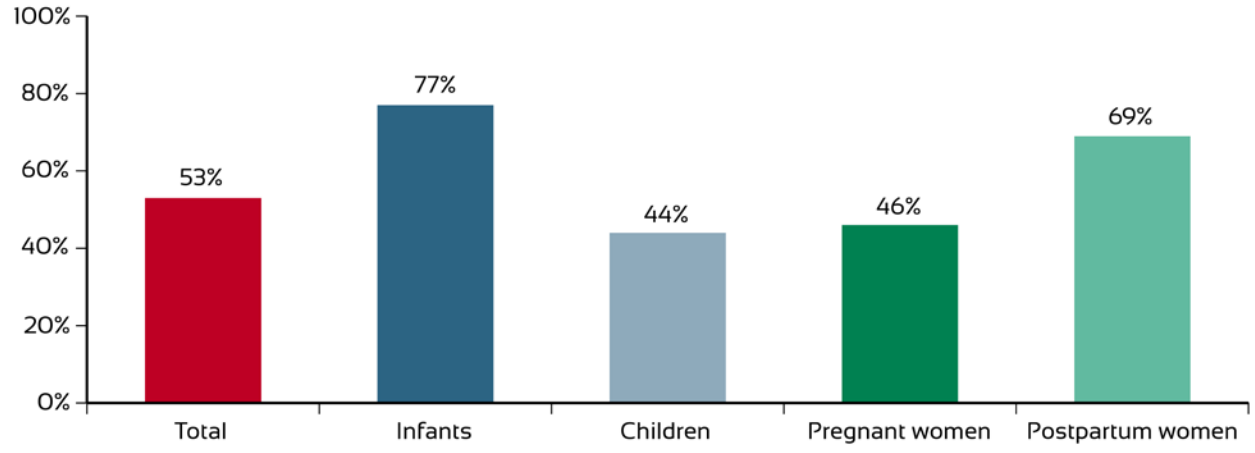
Participant Category	Number Eligible	Number Participating	Coverage Rate (Percent)
Infants	2,506,686	1,927,670	76.9
Total children aged 1–4	9,268,848	4,111,154	44.4
Children aged 1[a]	2,274,986	1,428,185	62.8
Children aged 2[a]	2,321,950	1,092,412	47.0
Children aged 3[a]	2,340,558	978,106	41.8
Children aged 4[a]	2,331,355	612,451	26.3
Pregnant women	1,634,852	758,250	46.4

[39] As noted in the methodology section on page 7, pregnant women's eligibility for WIC in this analysis is defined as beginning at conception, which is consistent with federal WIC eligibility guidelines. However, not all women realize they are pregnant during the first several weeks of pregnancy and, therefore, were not enrolled in WIC at conception. This would contribute to a lower coverage rate among pregnant women relative to infants or postpartum women.

Participant Category	Number Eligible	Number Participating	Coverage Rate (Percent)
Postpartum women	1,652,116	1,142,685	69.2
Breastfeeding women	1,034,333	593,604	57.4
Nonbreastfeeding women	617,783	549,081	88.9
Total	**15,062,503**	**7,939,758**	**52.7**

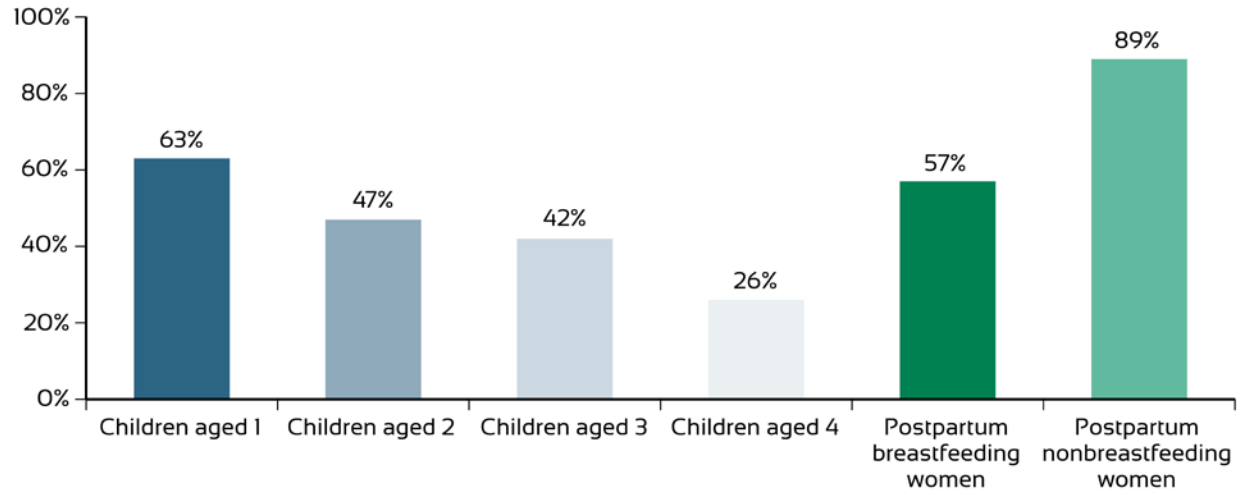
Notes
[a] WIC administrative data on participating children by year of age were not available. The numbers of participating children by year of age in this table are based on the distribution among children enrolled in WIC according to WIC PC2014 data.
Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure 4.1. WIC Coverage Rates by Participant Category: CY 2015



Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure 4.2. WIC Coverage Rates for Children by Age and Postpartum Women by Breastfeeding Status: CY 2015



Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Table 4.2. WIC Eligibles, Participants, and Coverage Rates by Participant Category and by Race and Ethnicity: CY 2015

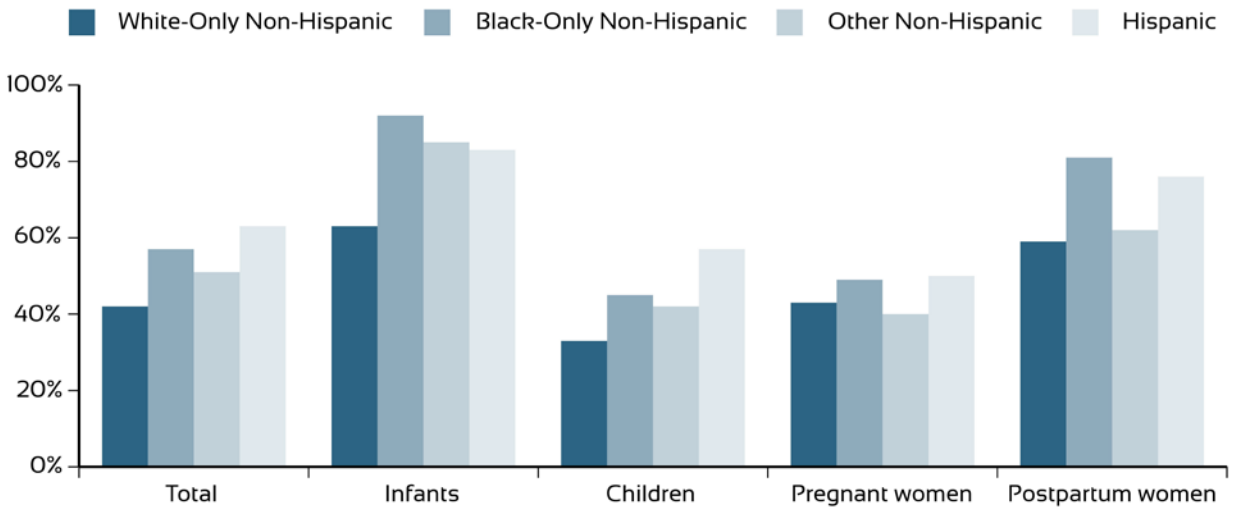
Participant Category	White-Only Non-Hispanic	Black-Only Non-Hispanic	Other Non-Hispanic	Hispanic	All Races
Eligibles					
Infants	987,876	456,279	193,360	863,871	2,501,386
Children aged 1-4	3,562,873	1,679,995	817,554	3,190,705	9,251,127
Pregnant women	644,289	297,583	126,109	563,414	1,631,395
Postpartum women	659,294	287,698	128,661	572,968	1,648,621
Total	**5,854,332**	**2,721,555**	**1,265,684**	**5,190,958**	**15,032,529**
Participants					
Infants	625,145	417,949	164,730	715,538	1,923,361
Children aged 1-4	1,178,898	753,800	346,128	1,819,860	4,098,685
Pregnant women	275,996	146,161	50,354	284,160	756,671
Postpartum women	389,626	233,137	79,914	437,158	1,139,835
Total	**2,469,663**	**1,551,047**	**641,126**	**3,256,716**	**7,918,552**
Coverage Rates (Percents)					
Infants	63.3	91.6	85.2	82.8	76.9
Children aged 1-4	33.1	44.9	42.3	57.0	44.4
Pregnant women	42.8	49.1	39.9	50.4	46.4
Postpartum women	59.1	81.0	62.1	76.3	69.2
Total	**42.2**	**57.0**	**50.7**	**62.7**	**52.7**

Notes

Estimates for U.S. territories other than Puerto Rico are not included in totals because the IDB data did not include information on race and ethnicity. Estimates for Puerto Rico are included in totals.

Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; unpublished internal WIC administrative

Figure 4.3. WIC Coverage Rates by Race and Ethnicity and by Participant Category: CY 2015



Sources: NBER, n.d.; IPUMS-USA, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

B. Changes in WIC Coverage Rates: CY 2014–CY 2015

The national WIC coverage rate decreased by 2 percentage points (from 55 percent to 53 percent) between CY 2014 and CY 2015, primarily because of a decrease in WIC participation rather than a change in eligibility. The number of WIC participants dropped by 4 percent between CY 2014 and CY 2015; the effect of this decrease was slightly compounded by a small (0.4 percent) increase in the number of WIC-eligible individuals (see table 4.3).

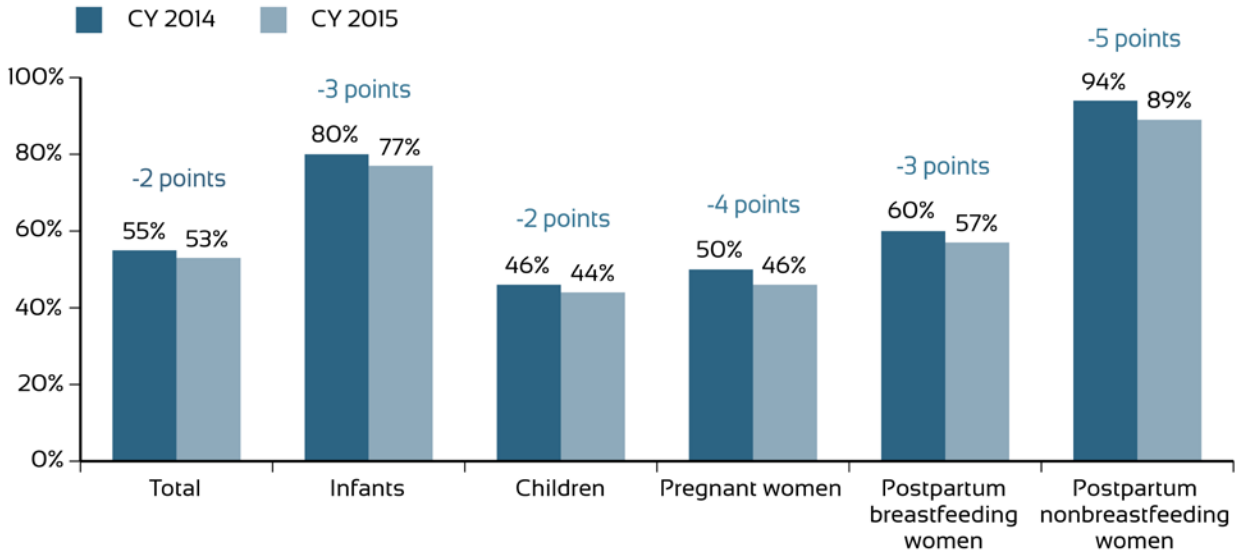
Coverage rates dropped for all participant categories; rates declined the least for children and postpartum breastfeeding women (by 2 percentage points each) and the most for postpartum nonbreastfeeding women (5 percentage points) and pregnant women (4 percentage points; see figure 4.4). The changes in coverage rates are based on the change in WIC participation and eligibility. Postpartum breastfeeding women were the only group with no decline in WIC participation; their coverage rate dropped because of a 4-percent increase in the number of eligibles. These changes in WIC coverage rates (both overall and for participant categories) were not statistically significant when tested at the 90-percent confidence level. Therefore, it is not certain whether the changes between 2014 and 2015 were true changes or a result of sampling variability in the CPS-ASEC survey data.

Table 4.3. Change in WIC Coverage Rates by Participant Category: CY 2014–CY 2015

Participant Category	Total Eligibles		Percent Change	Total Participants		Percent Change	Coverage Rate (Percent)		Difference
	2014	2015		2014	2015		2014	2015	
Infants	2,451,750	2,506,686	2.2	1,961,762	1,927,670	-1.7	80.0	76.9	-3.1
Total children aged 1–4	9,347,672	9,268,848	-0.8	4,296,463	4,111,154	-4.3	46.0	44.4	-1.6
Pregnant women	1,599,023	1,634,852	2.2	802,892	758,250	-5.6	50.2	46.4	-3.8
All postpartum women	1,606,863	1,652,116	2.8	1,166,655	1,142,685	-2.1	72.6	69.2	-3.4
Postpartum breastfeeding women	998,025	1,034,333	3.6	593,826	593,604	0.0	59.5	57.4	-2.1
Postpartum nonbreastfeeding women	608,838	617,783	1.5	572,829	549,081	-4.1	94.1	88.9	-5.2
Total	**15,005,308**	**15,062,503**	**0.4**	**8,227,771**	**7,939,758**	**-3.5**	**54.8**	**52.7**	**-2.1**

Sources: NBER, n.d.; IPUMS-USA, n.d.; .U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure 4.4. Change in WIC Coverage Rates by Participant Category: CY 2014–CY 2015



Sources: NBER, n.d.; IPUMS-USA, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

C. Regional- and State-Level WIC Coverage Rates

WIC coverage rates varied somewhat by region and more substantially by State (see appendix B for a list of States and U.S. territories by region). When comparing total coverage rates across regions, the Western region had the highest rate (60 percent), and the Mountain Plains region had the lowest rate (44 percent) in comparison with the 53-percent national rate (see table 4.4).

In general, when comparing coverage rates by participant category, regional rates were similar to national rates, with some exceptions. For example, similar to national coverage rates, coverage rates for infants were highest across most regions; however, in the Southwest, coverage rates for postpartum women were highest. Also similar to national rates, rates for children were lowest across most regions except for the Northeast and Western regions, where rates were lowest for pregnant women.

Regional coverage rates by race and ethnicity were similar to national rates by race and ethnicity (see table 4.5). For example, rates were highest for Hispanics across most regions except for the Northeast, where rates were higher for Black-Only Non-Hispanics and Other Non-Hispanics.

Coverage rates declined in all regions from 2014 to 2015 as shown in table 4.6. The drop in rates ranged from less than 1 percentage point in the Northeast and Southeast regions to 4 percentage points in the Western region compared with the overall 2-percentage point decrease across the Nation.

A comparison of coverage rates by State in CY 2015 found substantial variation. Rates ranged from a high of 65 percent in California and Vermont to a low of 37 percent in Utah, compared with the national average coverage rate of 53 percent (see table 4.7 and figure 4.5). Eight States and one U.S. territory had coverage rates higher than 55 percent (California, Hawaii, Maryland, Michigan, Minnesota, Puerto Rico, Rhode Island, Texas, and Vermont), and eight States had coverage rates lower than 44 percent (Colorado, Illinois, Montana, Nebraska, New Hampshire, New Mexico, Tennessee, and Utah).

State coverage rates by participant categories were generally consistent with State coverage rates overall but differed in some cases. For example, in States such as California, Maryland, and Minnesota, coverage rates were consistently higher than national rates across all categories (see table 4.8 and figures 4.6 through 4.9). Similarly, in States such as Colorado, Illinois, and Montana, coverage rates were consistently lower than national rates across all categories. However, some States had higher or lower coverage rates compared with average coverage rates for some categories. For example, compared with the national average, coverage rates in Michigan were higher for infants, children, and pregnant women (by 4 to 6 percentage points) but lower for postpartum women (11 percentage points). In Texas, compared with the national average, coverage rates were the same or 4 percentage points higher for infants, children, and pregnant women, and 19 percentage points higher (88 percent versus 69 percent) for postpartum women.

State rates by race and ethnicity were also generally consistent with average State rates for these subgroups.[40] For example, similar to national coverage rates, State-level coverage rates were higher for Hispanics than for White-Only Non-Hispanics in every State except for Hawaii and Vermont (see table 4.9 and figures 4.10–4.12).

Some of the variations in State coverage rates by participant category and race and ethnicity may be because of sampling variability or limitations in data resulting from small sample sizes; caution should be used when examining State-level estimates. For example, table 4.8 shows that for some States with small populations, such as South Dakota and Vermont, coverage rates were higher for 1-year-olds than infants. It is unlikely that any State truly had higher coverage rates for 1-year-olds than infants. This demonstrates the limits of small sample sizes for States, especially those with small populations. See chapter 6 for more information on measures of statistical uncertainty for the estimates.

[40] Because of small sample sizes, estimates for Black-Only Non-Hispanic and Other Non-Hispanic subgroups were combined.

Table 4.4. WIC Eligibles, Participants, and Coverage Rates by FNS Region and Participant Category: CY 2015

FNS Region	Infants	Children Aged 1–4	Pregnant Women	All Postpartum Women	Total
Eligibles					
Northeast	216,978	818,395	141,512	154,510	1,331,395
Mid-Atlantic	281,006	1,049,675	183,271	184,337	1,698,288
Southeast	539,363	1,951,240	351,771	334,096	3,176,471
Midwest	370,624	1,384,142	241,719	233,602	2,230,087
Southwest	399,527	1,457,684	260,570	250,896	2,368,678
Mountain Plains	197,829	698,992	129,023	133,885	1,159,729
Western	501,360	1,908,721	326,985	360,789	3,097,855
Total	**2,506,686**	**9,268,848**	**1,634,852**	**1,652,116**	**15,062,503**
Participants					
Northeast	162,520	377,248	63,874	99,756	703,399
Mid-Atlantic	221,915	495,536	90,603	119,841	927,895
Southeast	411,097	781,657	158,204	236,532	1,587,489
Midwest	285,261	558,064	106,851	147,349	1,097,525
Southwest	320,797	605,405	125,326	205,443	1,256,972
Mountain Plains	127,647	254,229	48,164	74,390	504,430
Western	398,433	1,039,015	165,227	259,373	1,862,049
Total	**1,927,670**	**4,111,154**	**758,250**	**1,142,685**	**7,939,758**
Coverage Rates (Percents)					
Northeast	74.9	46.1	45.1	64.6	52.8
Mid-Atlantic	79.0	47.2	49.4	65.0	54.6
Southeast	76.2	40.1	45.0	70.8	50.0
Midwest	77.0	40.3	44.2	63.1	49.2
Southwest	80.3	41.5	48.1	81.9	53.1
Mountain Plains	64.5	36.4	37.3	55.6	43.5
Western	79.5	54.4	50.5	71.9	60.1
Total	**76.9**	**44.4**	**46.4**	**69.2**	**52.7**

Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Table 4.5. WIC Eligibles, Participants, and Coverage Rates by FNS Region and by Race and Ethnicity Category: CY 2015

FNS Region	White-Only Non-Hispanic	Black-Only Non-Hispanic	Other Non-Hispanic	Hispanic	All Races
Eligibles					
Northeast	527,383	226,452	132,193	445,367	1,331,395
Mid-Atlantic	624,554	382,397	127,302	558,378	1,692,631
Southeast	1,336,600	994,337	184,513	661,021	3,176,471
Midwest	1,194,068	464,048	189,104	382,867	2,230,087
Southwest	663,195	383,889	160,809	1,160,785	2,368,678
Mountain Plains	695,050	103,318	109,549	251,812	1,159,729
Western	813,482	167,115	362,213	1,730,729	3,073,539
Total	**5,854,332**	**2,721,555**	**1,265,684**	**5,190,958**	**15,032,529**
Participants					
Northeast	229,594	142,489	76,056	255,259	703,399
Mid-Atlantic	274,103	220,712	49,820	378,913	923,547
Southeast	596,698	548,929	71,610	370,253	1,587,489
Midwest	518,504	259,066	103,353	216,602	1,097,525
Southwest	261,251	212,343	70,329	713,048	1,256,972
Mountain Plains	260,388	55,599	51,849	136,594	504,430
Western	329,126	111,908	218,109	1,186,047	1,845,190
Total	**2,469,663**	**1,551,047**	**641,126**	**3,256,716**	**7,918,552**
Coverage Rates (Percents)					
Northeast	43.5	62.9	57.5	57.3	52.8
Mid-Atlantic	43.9	57.7	39.1	67.9	54.6
Southeast	44.6	55.2	38.8	56.0	50.0
Midwest	43.4	55.8	54.7	56.6	49.2
Southwest	39.4	55.3	43.7	61.4	53.1
Mountain Plains	37.5	53.8	47.3	54.2	43.5
Western	40.5	67.0	60.2	68.5	60.0
Total	**42.2**	**57.0**	**50.7**	**62.7**	**52.7**

Notes

Estimates for U.S. territories other than Puerto Rico are not included in regional totals because the IDB data did not include information on race and ethnicity. Estimates for Puerto Rico are included in regional totals.

Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; unpublished internal WIC administrative data

Table 4.6. WIC Coverage Rates by FNS Region and Participant Category: CY 2014 and CY 2015

FNS Region	Infants	Children Aged 1–4	Pregnant Women	All Postpartum Women	Total
Coverage Rate 2015 (Percents)					
Northeast	74.9	46.1	45.1	64.6	52.8
Mid-Atlantic	79.0	47.2	49.4	65.0	54.6
Southeast	76.2	40.1	45.0	70.8	50.0
Midwest	77.0	40.3	44.2	63.1	49.2
Southwest	80.3	41.5	48.1	81.9	53.1
Mountain Plains	64.5	36.4	37.3	55.6	43.5
Western	79.5	54.4	50.5	71.9	60.1
Total	**76.9**	**44.4**	**46.4**	**69.2**	**52.7**
Coverage Rate 2014 (Percents)					
Northeast	75.8	46.3	47.0	69.7	53.7
Mid-Atlantic	82.1	48.5	49.8	73.8	56.6
Southeast	77.7	40.0	47.9	72.0	50.4
Midwest	79.1	42.5	49.0	63.7	51.5
Southwest	85.2	43.7	53.6	86.0	55.9
Mountain Plains	67.6	37.8	41.0	58.8	45.5
Western	84.8	57.9	56.3	75.6	64.0
Total	**80.0**	**46.0**	**50.2**	**72.6**	**54.8**
Change in Coverage Rate 2015 Versus 2014 (Differences)					
Northeast	-0.9	-0.2	-1.9	-5.1	-0.9
Mid-Atlantic	-3.1	-1.2	-0.4	-8.8	-2.0
Southeast	-1.5	0.0	-2.9	-1.3	-0.4
Midwest	-2.2	-2.2	-4.8	-0.7	-2.3
Southwest	-4.9	-2.1	-5.5	-4.1	-2.9
Mountain Plains	-3.1	-1.4	-3.7	-3.2	-2.0
Western	-5.3	-3.4	-5.7	-3.7	-3.9
Total	**-3.1**	**-1.6**	**-3.8**	**-3.4**	**-2.1**

Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

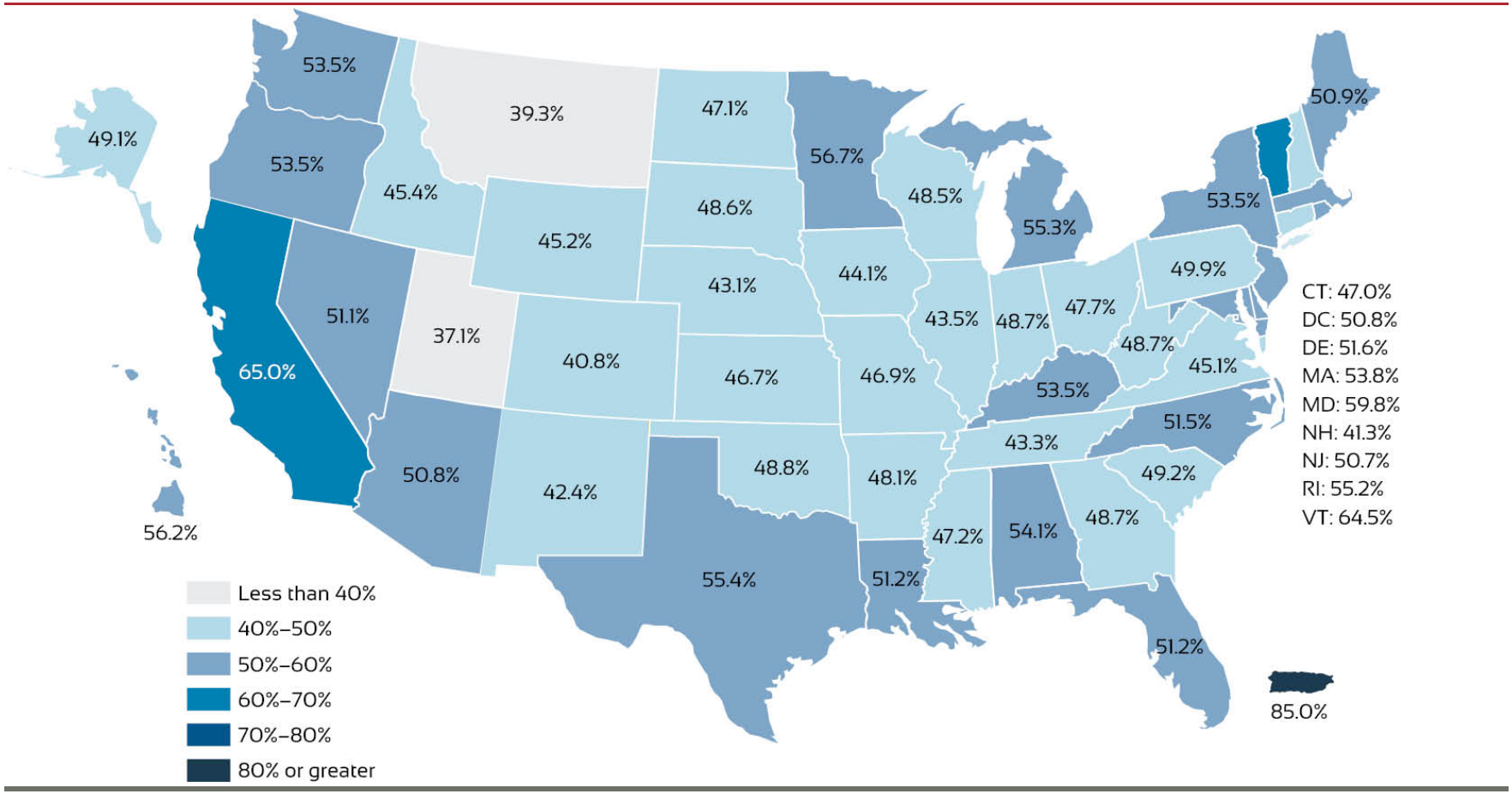
Table 4.7. WIC Eligibles, Participants, and Coverage Rates by State and FNS Region: CY 2015

State[a]	Eligibles	Participants	Coverage Rate (Percent)
Alabama	242,502	131,294	54.1
Alaska	39,888	19,584	49.1
Arizona	329,219	167,106	50.8
Arkansas	174,843	84,180	48.1
California	1,911,706	1,243,411	65.0
Colorado	220,959	90,174	40.8
Connecticut	107,811	50,716	47.0
Delaware	36,272	18,728	51.6
District of Columbia	28,486	14,462	50.8
Florida	945,960	484,409	51.2
Georgia	535,291	260,836	48.7
Hawaii	55,255	31,027	56.2
Idaho	88,337	40,143	45.4
Illinois	549,968	238,977	43.5
Indiana	311,910	152,046	48.7
Iowa	142,283	62,790	44.1
Kansas	132,535	61,877	46.7
Kentucky	215,143	115,039	53.5
Louisiana	250,681	128,432	51.2
Maine	42,262	21,512	50.9
Maryland	237,998	142,381	59.8
Massachusetts	210,874	113,509	53.8
Michigan	437,390	242,002	55.3
Minnesota	208,727	118,281	56.7
Mississippi	187,174	88,260	47.2
Missouri	283,174	132,948	46.9
Montana	46,828	18,387	39.3
Nebraska	86,645	37,306	43.1
Nevada	141,662	72,415	51.1
New Hampshire	35,416	14,627	41.3
New Jersey	316,238	160,382	50.7
New Mexico	127,906	54,291	42.4
New York	876,817	468,973	53.5
North Carolina	480,251	247,384	51.5
North Dakota	26,373	12,433	47.1
Ohio	507,598	242,104	47.7
Oklahoma	228,713	111,670	48.8
Oregon	181,220	96,979	53.5
Pennsylvania	489,575	244,071	49.9
Puerto Rico	192,583	163,785	85.0

State[a]	Eligibles	Participants	Coverage Rate (Percent)
Rhode Island	37,248	20,543	55.2
South Carolina	228,293	112,347	49.2
South Dakota	39,846	19,385	48.6
Tennessee	341,855	147,922	43.3
Texas	1,586,534	878,398	55.4
Utah	156,990	58,237	37.1
Vermont	20,966	13,520	64.5
Virginia	306,759	138,478	45.1
Washington	326,252	174,526	53.5
West Virginia	84,718	41,261	48.7
Wisconsin	214,494	104,116	48.5
Wyoming	24,095	10,894	45.2
FNS Region			
Northeast	1,331,395	703,399	52.8
Mid-Atlantic	1,698,288	927,895	54.6
Southeast	3,176,471	1,587,489	50.0
Midwest	2,230,087	1,097,525	49.2
Southwest	2,368,678	1,256,972	53.1
Mountain Plains	1,159,729	504,430	43.5
Western	3,097,855	1,862,049	60.1
Total	**15,062,503**	**7,939,758**	**52.7**

Notes
[a] State and regional eligibility estimates and participant data include individuals in ITOs who were eligible for WIC. Estimates for U.S. territories other than Puerto Rico are included in regional totals but not shown separately because of constraints related to small sample size. Estimates for Puerto Rico are shown separately.
Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure 4.5. WIC Coverage Rates for Total Eligible Individuals by State: CY 2015
National Coverage Rate: 52.7 Percent



Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Table 4.8. WIC Coverage Rates (Percentages) by State and Participant Category: CY 2015

State[a,b]	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	All Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Alabama	79.9	60.2	48.4	38.2	28.1	43.5	56.0	70.5	54.1
Alaska	80.8	60.4	37.0	36.6	26.4	39.2	54.5	64.7	49.1
Arizona	77.1	58.5	41.0	36.6	34.1	42.3	38.9	68.1	50.8
Arkansas	76.9	58.7	34.8	29.8	23.6	36.4	49.0	66.7	48.1
California	84.1	73.2	61.6	60.7	42.8	59.6	55.1	77.2	65.0
Colorado	59.2	51.1	32.7	30.4	22.6	34.1	34.6	55.9	40.8
Connecticut	72.8	60.6	49.0	33.0	22.0	40.1	45.1	49.7	47.0
Delaware	91.0	67.3	37.4	39.4	14.7	39.4	56.0	69.0	51.6
District of Columbia	93.3	54.3	41.9	33.6	17.1	35.5	45.5	86.3	50.8
Florida	75.7	60.4	47.9	39.0	21.8	42.3	46.6	67.8	51.2
Georgia	71.4	51.3	45.4	40.4	22.7	39.7	31.0	82.9	48.7
Hawaii	76.3	67.3	51.8	39.4	44.6	50.1	45.4	66.3	56.2
Idaho	66.6	50.1	40.0	35.7	27.3	38.4	40.0	57.2	45.4
Illinois	74.9	46.3	41.1	28.9	16.6	33.1	42.6	58.9	43.5
Indiana	75.9	53.9	40.9	36.0	26.8	39.4	41.1	70.8	48.7
Iowa	63.3	61.2	38.6	35.9	18.5	38.2	33.0	55.1	44.1
Kansas	69.1	60.8	37.2	36.6	27.2	39.4	42.5	56.7	46.7
Kentucky	82.0	56.6	50.1	37.0	30.5	43.5	53.2	67.1	53.5
Louisiana	88.6	57.3	37.6	31.0	22.5	36.7	52.4	79.7	51.2
Maine	65.1	65.5	53.7	47.4	32.7	49.4	36.9	50.2	50.9
Maryland	80.7	87.8	55.1	49.8	27.8	53.4	52.8	66.8	59.8
Massachusetts	74.6	68.7	51.2	49.6	21.8	47.8	46.3	63.7	53.8
Michigan	82.3	53.6	51.8	43.1	41.5	47.5	52.8	61.0	55.3
Minnesota	78.9	66.9	48.2	50.2	35.5	50.2	46.9	68.8	56.7
Mississippi	78.2	51.3	38.1	31.9	23.5	35.9	42.0	68.4	47.2
Missouri	75.8	52.8	37.8	30.9	23.4	36.3	45.8	64.1	46.9
Montana	64.5	48.4	29.8	34.3	16.8	31.3	39.8	50.7	39.3
Nebraska	56.4	50.2	44.0	41.6	27.7	40.3	29.7	48.4	43.1
Nevada	73.4	60.5	42.7	42.0	32.7	44.1	39.0	67.2	51.1

State[a,b]	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	All Children Aged 1–4	Pregnant Women	Postpartum Women	Total
New Hampshire	72.9	51.7	33.8	26.2	22.6	32.6	41.9	56.3	41.3
New Jersey	66.7	69.2	44.9	42.1	30.3	46.4	39.6	59.8	50.7
New Mexico	69.4	46.8	35.4	32.5	18.4	33.4	40.0	63.5	42.4
New York	76.0	65.3	51.2	44.7	24.1	46.2	45.6	67.8	53.5
North Carolina	76.5	60.3	48.8	44.3	17.9	42.6	45.3	70.4	51.5
North Dakota	72.7	48.5	43.0	38.8	23.3	39.4	37.7	61.3	47.1
Ohio	75.9	49.3	40.1	37.4	25.7	38.0	41.3	63.8	47.7
Oklahoma	73.7	61.2	46.9	36.9	16.7	39.8	50.1	60.8	48.8
Oregon	67.1	61.9	52.0	53.7	35.0	50.3	46.0	56.2	53.5
Pennsylvania	83.4	61.6	45.7	35.5	20.3	39.9	47.7	62.1	49.9
Rhode Island	76.1	69.6	52.1	43.6	38.2	50.1	44.9	58.0	55.2
South Carolina	82.1	53.7	38.8	30.1	21.9	35.9	49.8	74.4	49.2
South Dakota	69.6	76.6	40.2	35.2	24.0	42.9	36.5	60.8	48.6
Tennessee	73.3	53.9	32.6	28.9	11.0	31.4	47.0	62.0	43.3
Texas	81.1	75.1	43.9	39.7	15.8	43.8	47.6	88.1	55.4
Utah	52.0	43.7	33.8	33.7	17.5	32.4	29.9	45.2	37.1
Vermont	65.6	78.4	85.6	58.5	59.1	69.9	39.7	62.9	64.5
Virginia	74.5	62.3	34.1	26.5	17.6	34.9	45.0	61.7	45.1
Washington	69.8	58.1	53.8	47.2	34.6	48.5	48.5	62.2	53.5
West Virginia	75.9	50.4	39.9	38.1	26.7	38.9	46.3	68.4	48.7
Wisconsin	73.4	58.6	42.0	39.4	27.9	41.7	39.8	59.2	48.5
Wyoming	59.9	50.4	42.7	43.0	25.3	40.1	36.9	55.6	45.2
Total[c]	**76.9**	**62.8**	**47.0**	**41.8**	**26.3**	**44.4**	**46.4**	**69.2**	**52.7**

Notes

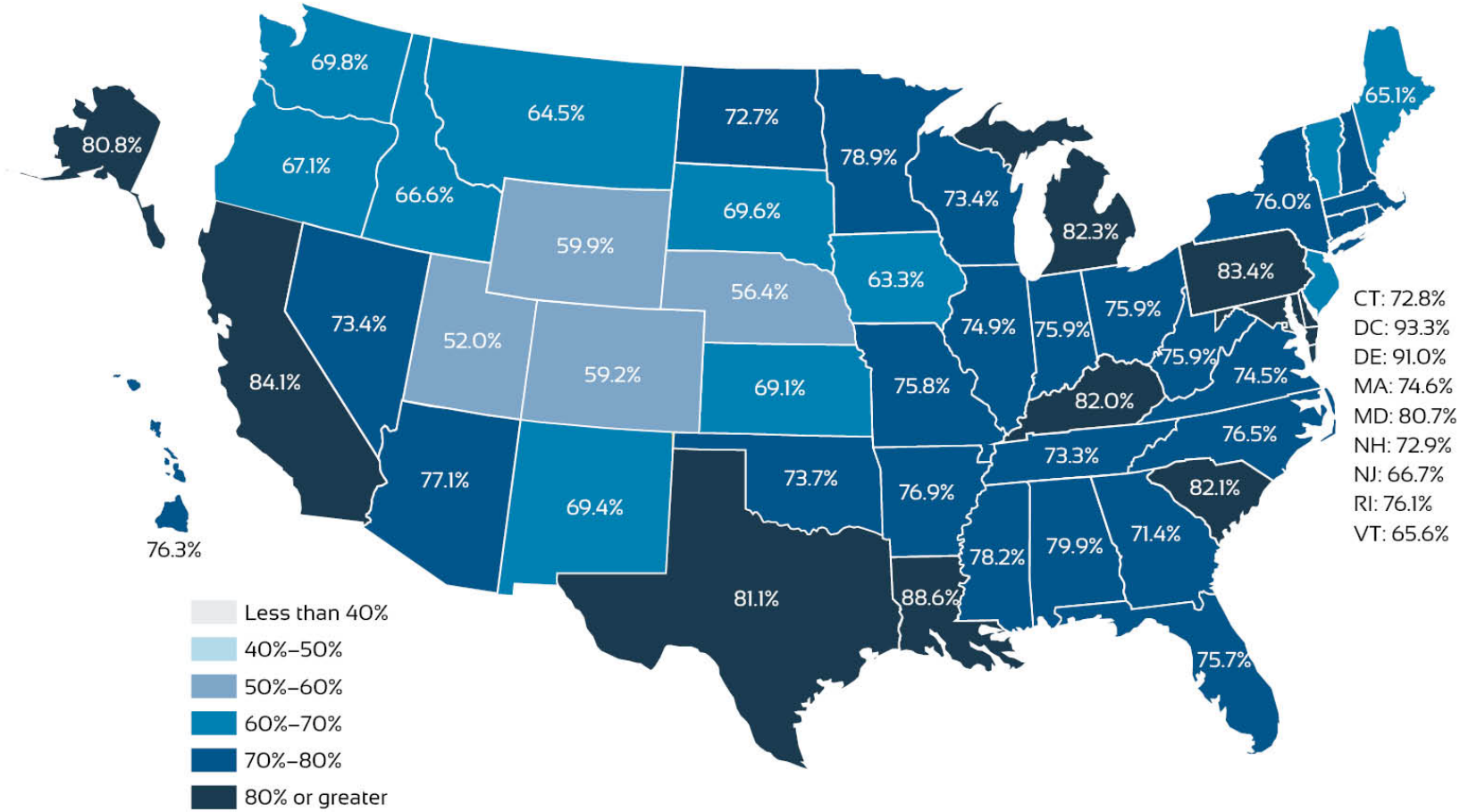
[a] State and regional eligibility estimates and participant data include individuals in ITOs who were eligible for WIC.

[b] Estimates of State-level coverage rates by year of age for children and other participant categories should be viewed with caution because of the small sample sizes for many States. See chapter 6 for more details on statistical uncertainty for these estimates.

[c] Estimates for Puerto Rico and other U.S. territories are included in the total but are not shown separately because of small sample sizes.

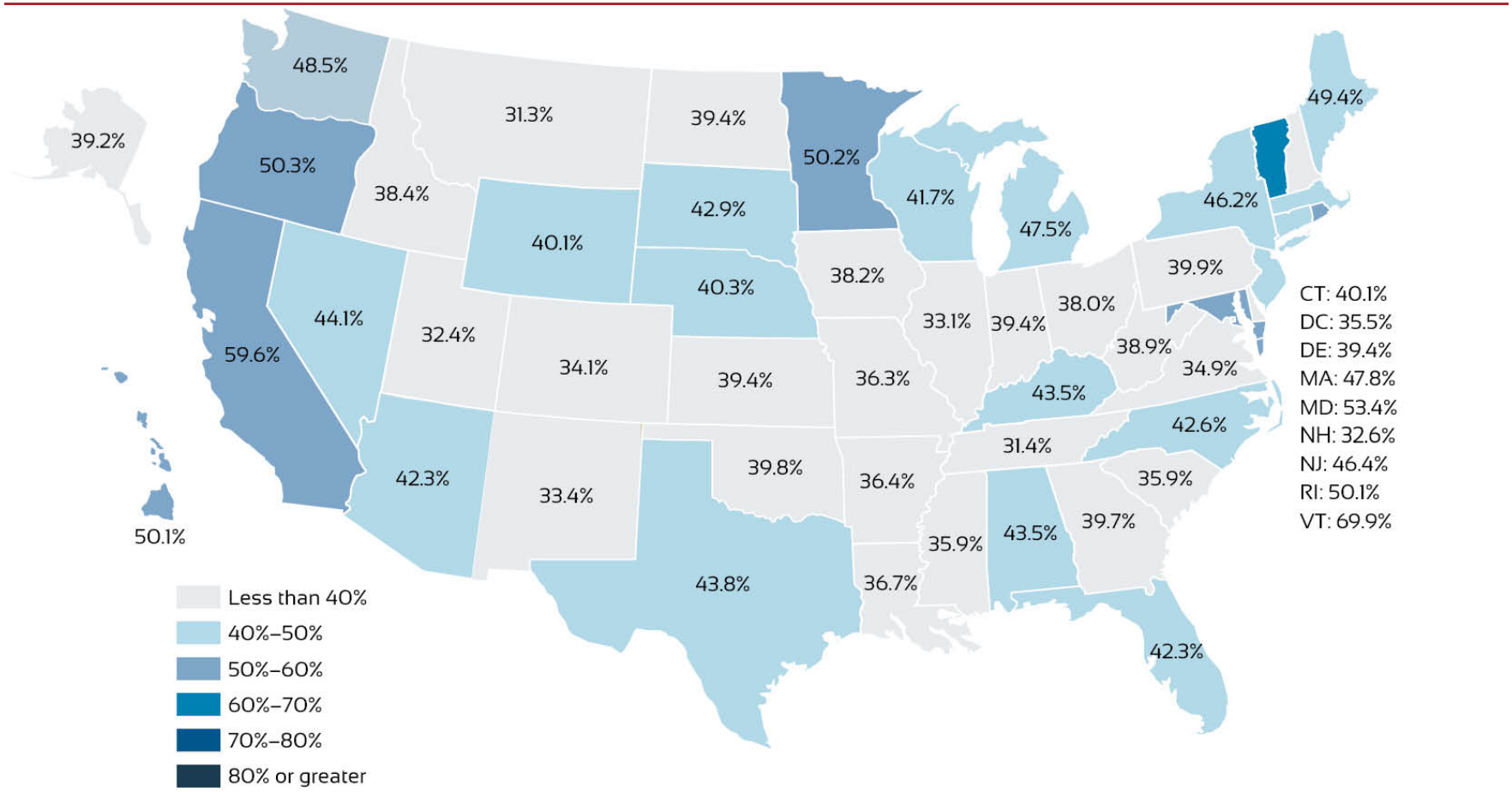
Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; Thorn et al., 2015; unpublished internal WIC administrative data

Figure 4.6. WIC Coverage Rates for Infants by State: CY 2015
National Coverage Rate for Infants: 76.9 Percent



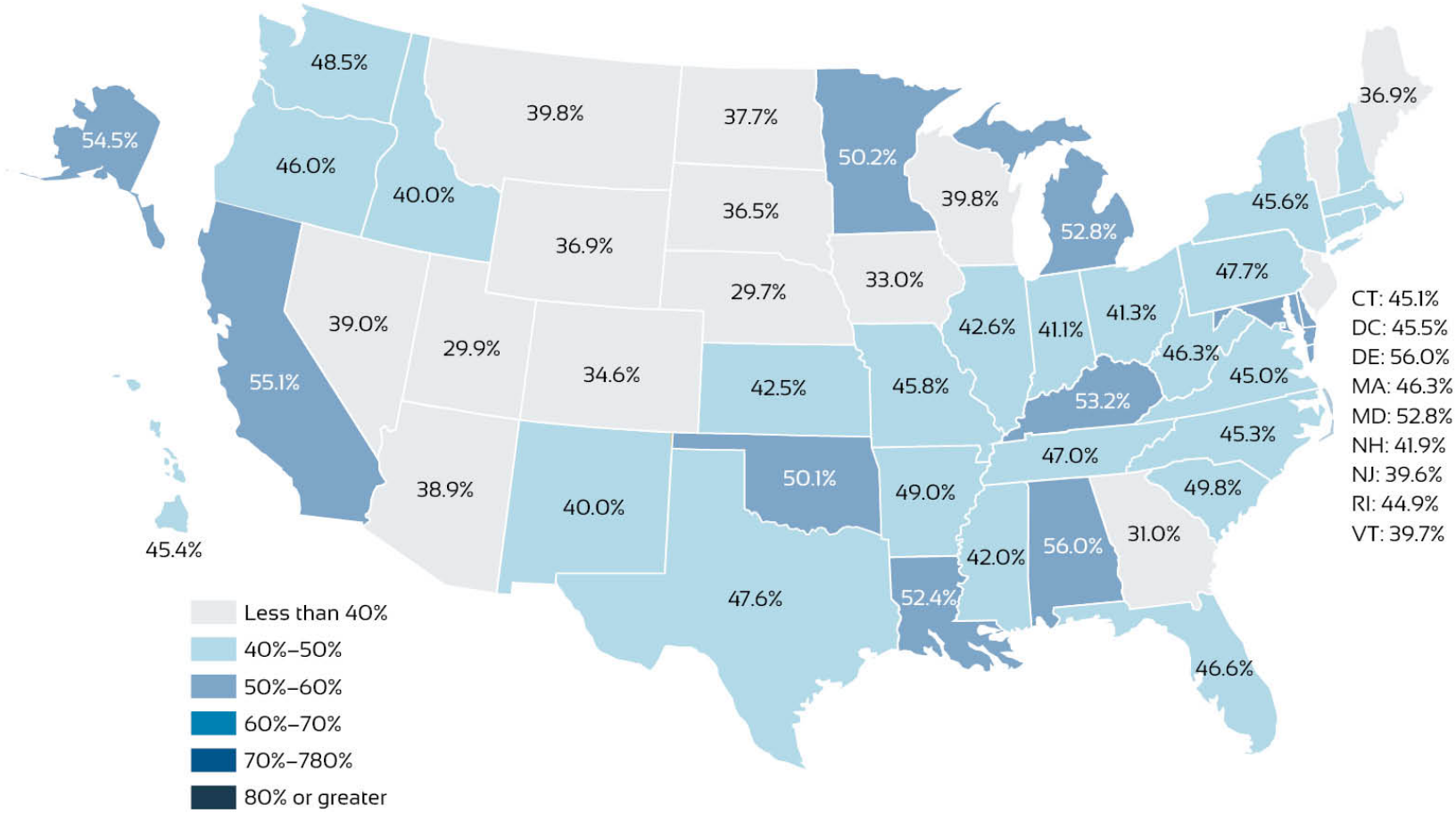
Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure 4.7. WIC Coverage Rates for Children (Aged 1–4) by State: CY 2015
National Coverage Rate for Children: 44.4 Percent



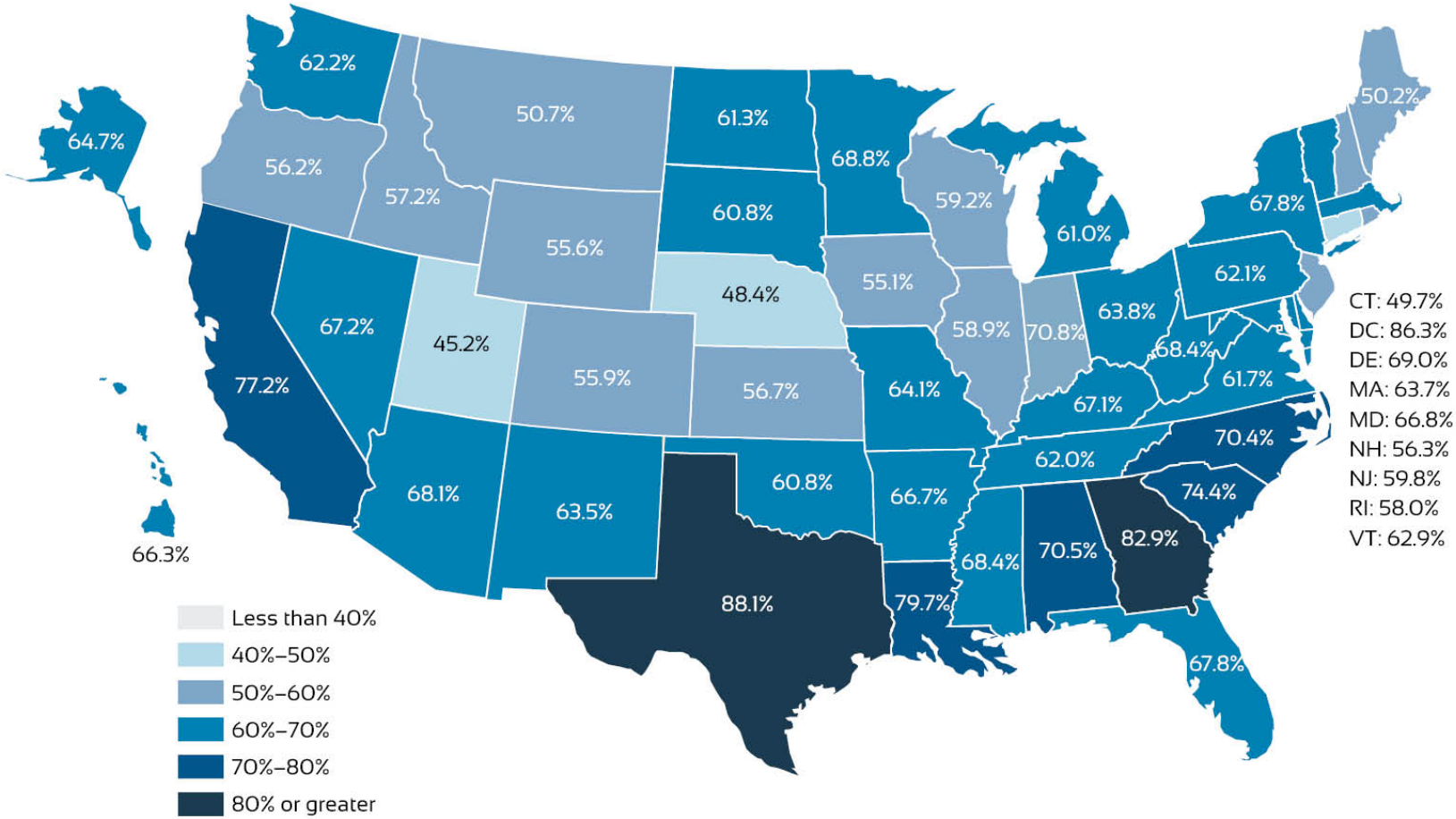
Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure 4.8. WIC Coverage Rates for Pregnant Women by State: CY 2015
National Coverage Rate for Pregnant Women: 46.4 Percent



Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure 4.9. WIC Coverage Rates for Postpartum Women by State: CY 2015
National Coverage Rate for Postpartum Women: 69.2 Percent



Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

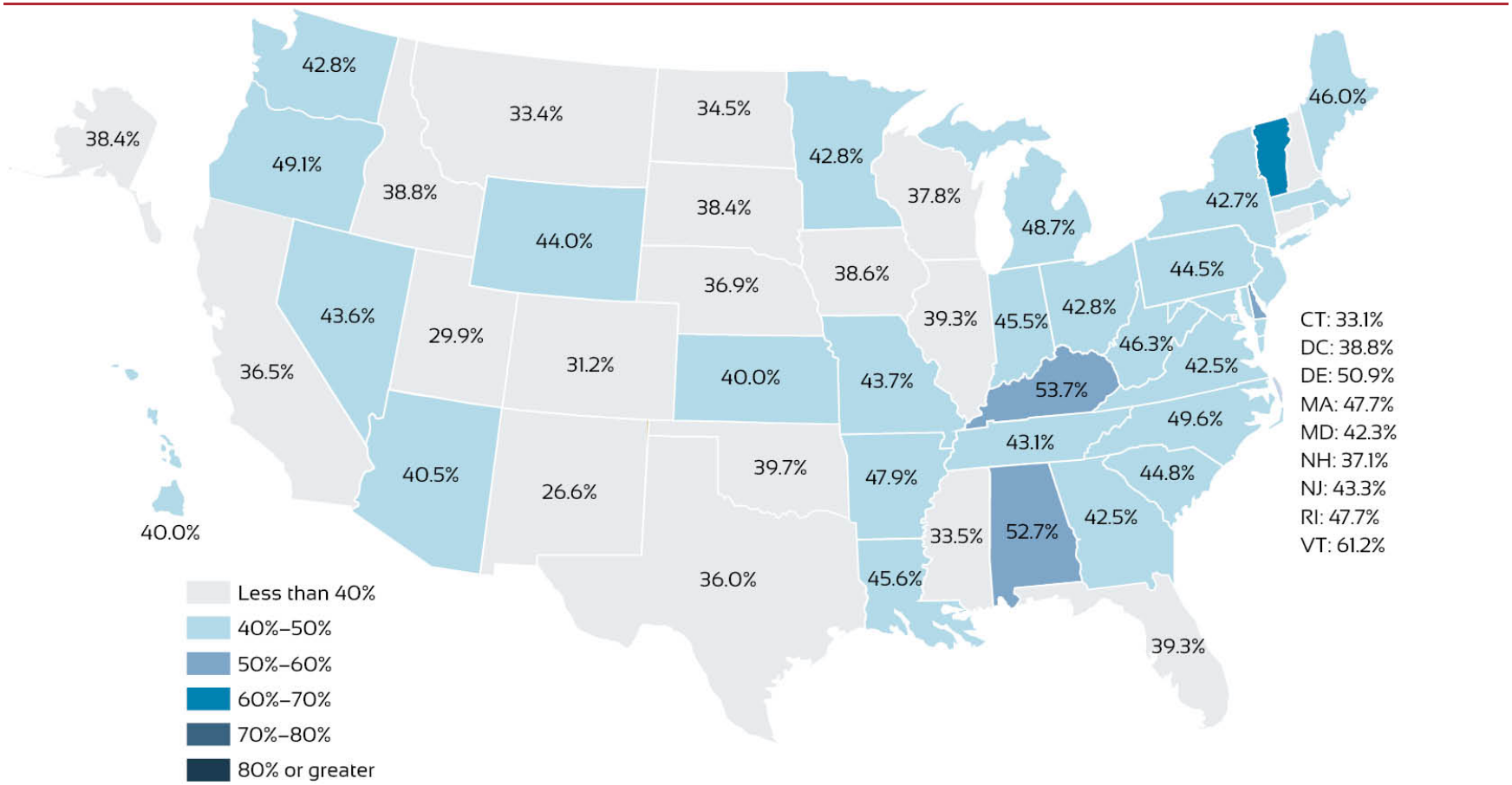
Table 4.9. State-Level WIC Coverage Rates (Percentages) by Race and Ethnicity: CY 2015

State	All Races	White-Only Non-Hispanic	Black-Only and Other Non-Hispanic[a]	Hispanic
Alabama	54.1	52.7	52.6	67.2
Alaska	49.1	38.4	61.4	41.4
Arizona	50.8	40.5	62.4	52.4
Arkansas	48.1	47.9	48.6	48.4
California	65.0	36.5	65.1	72.3
Colorado	40.8	31.2	44.6	49.1
Connecticut	47.0	33.1	52.0	55.6
Delaware	51.6	50.9	48.7	58.0
District of Columbia	50.8	38.8	46.3	72.3
Florida	51.2	39.3	57.1	57.8
Georgia	48.7	42.5	52.6	50.7
Hawaii	56.2	40.0	71.9	36.2
Idaho	45.4	38.8	50.4	66.0
Illinois	43.5	39.3	41.4	49.7
Indiana	48.7	45.5	50.8	59.3
Iowa	44.1	38.6	52.9	62.2
Kansas	46.7	40.0	48.0	59.6
Kentucky	53.5	53.7	46.5	72.4
Louisiana	51.2	45.6	55.3	51.4
Maine	50.9	46.0	93.4	92.0
Maryland	59.8	42.3	63.8	72.7
Massachusetts	53.8	47.7	52.9	61.5
Michigan	55.3	48.7	62.8	69.5
Minnesota	56.7	42.8	75.5	70.7
Mississippi	47.2	33.5	58.1	43.7
Missouri	46.9	43.7	52.8	55.2
Montana	39.3	33.4	53.8	82.5
Nebraska	43.1	36.9	43.2	53.8
Nevada	51.1	43.6	51.1	55.3
New Hampshire	41.3	37.1	60.5	78.7
New Jersey	50.7	43.3	49.4	55.6
New Mexico	42.4	26.6	35.7	49.9
New York	53.5	42.7	62.5	56.5
North Carolina	51.5	49.6	51.8	54.4
North Dakota	47.1	34.5	75.3	60.3
Ohio	47.7	42.8	56.4	53.6
Oklahoma	48.8	39.7	56.8	60.0
Oregon	53.5	49.1	46.7	65.0
Pennsylvania	49.9	44.5	53.4	60.1

State	All Races	White-Only Non-Hispanic	Black-Only and Other Non-Hispanic[a]	Hispanic
Rhode Island	55.2	47.7	72.8	55.4
South Carolina	49.2	44.8	49.9	62.8
South Dakota	48.6	38.4	64.8	52.7
Tennessee	43.3	43.1	41.9	47.4
Texas	55.4	36.0	50.8	63.0
Utah	37.1	29.9	35.3	56.7
Vermont	64.5	61.2	110.4	34.6
Virginia	45.1	42.5	45.8	49.3
Washington	53.5	42.8	56.9	68.3
West Virginia	48.7	46.3	84.6	47.3
Wisconsin	48.5	37.8	60.5	64.1
Wyoming	45.2	44.0	38.4	54.0
Total	**52.7**	**42.2**	**55.0**	**62.7**

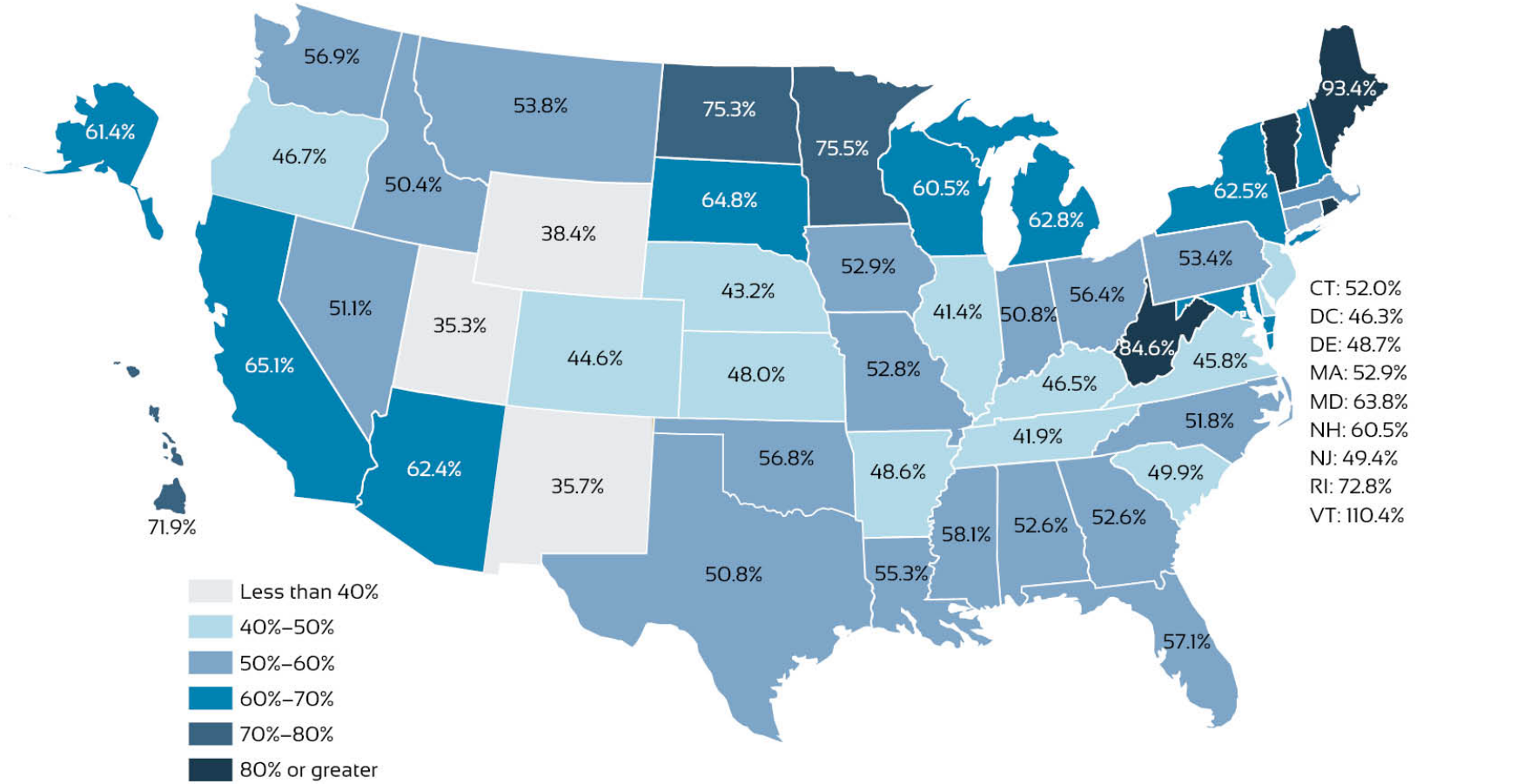
Notes
[a] The Black-Only Non-Hispanic and Other Non-Hispanic categories were combined because of sample size concerns.
Estimates for Puerto Rico are included in the totals but not shown separately because of small sample sizes. Estimates for U.S. territories other than Puerto Rico are not included in the totals because the IDB data did not include information on race and ethnicity.
Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; unpublished internal WIC administrative data

Figure 4.10. WIC Coverage Rates for White-Only Non-Hispanic Individuals by State: CY 2015
National Coverage Rate for White-Only Non-Hispanic Individuals: 42.2 Percent



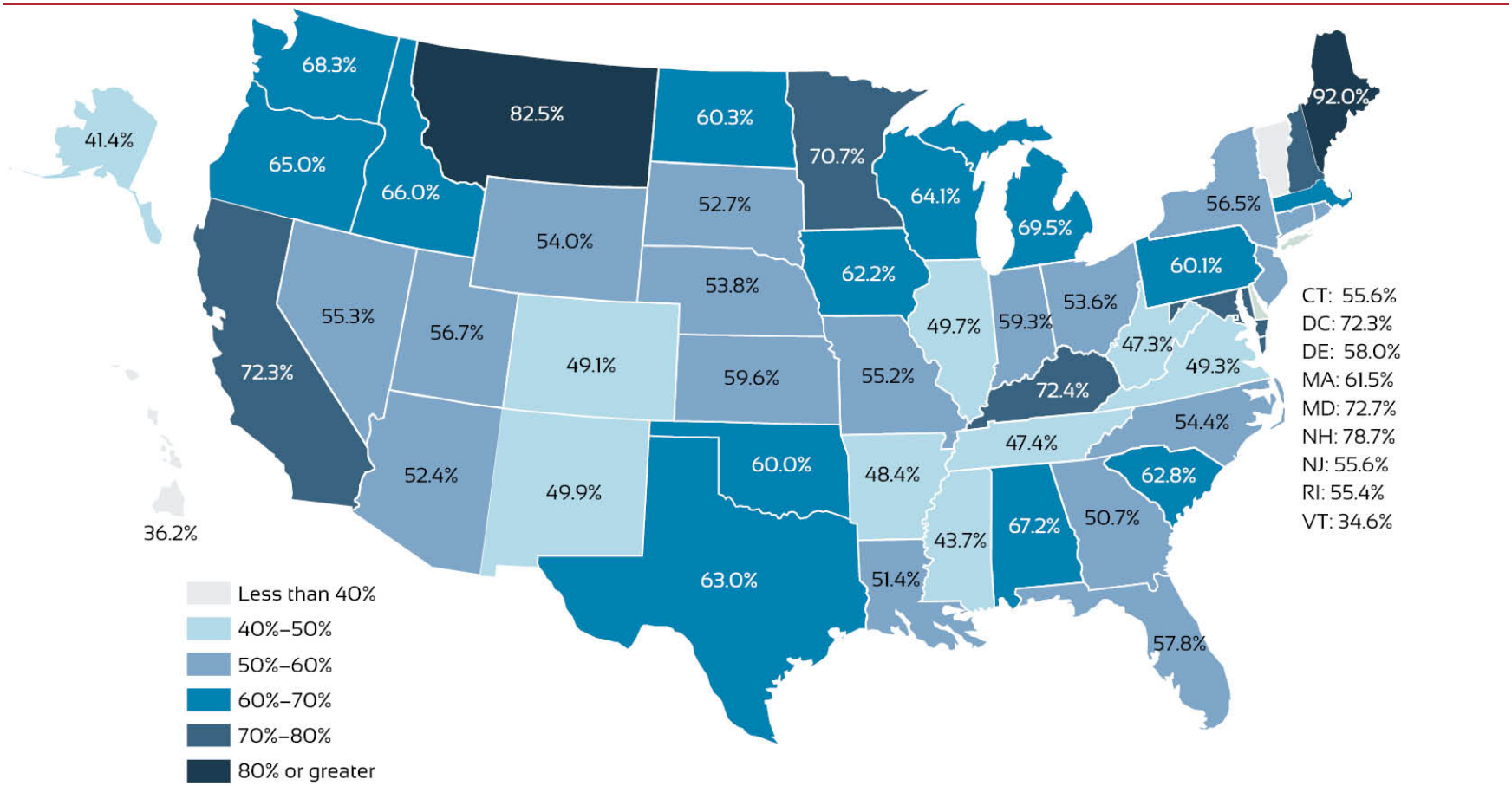
Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; unpublished internal WIC administrative data

Figure 4.11. WIC Coverage Rates for Black-Only and Other Non-Hispanic Individuals by State: CY 2015
National Coverage Rate for Black-Only and Other Non-Hispanic Individuals: 55.0 Percent



Note
The Black-Only Non-Hispanic and Other Non-Hispanic categories were combined because of sample size concerns.
Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; unpublished internal WIC administrative data

Figure 4.12. WIC Coverage Rates for Hispanic Individuals by State: CY 2015
National Coverage Rate for Hispanic Individuals: 62.7 Percent



Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; unpublished internal WIC administrative data

D. Long-Term Trends in WIC Coverage Rates: CY 2005–CY 2015

WIC coverage rates increased from 57 percent in 2005 to a high of 64 percent in 2011 and have declined since 2011 to the estimated 2015 rate of 53 percent. The decline resulted from a decrease in participation (from 9.0 million in 2011 to 7.9 million in 2015) concurrent with an increase in eligible individuals (from 14.1 million in 2011 to 15.1 million in 2015; see table 4.10).

The relative magnitude of coverage rates by participant category was consistent from 2005 to 2015 (see table 4.11). For example, throughout that period, coverage rates were consistently highest for infants, followed by postpartum women and pregnant women (see figure 4.13). Coverage rates for children were consistently the lowest. However, if rates for children are divided by year of age, coverage rates for children aged 1 were consistently highest (and higher than total coverage rates), followed by children aged 2 and 3; children aged 4 had the lowest coverage rates (see figure 4.14).

Figure 4.15 shows the overall coverage rates by region from CY 2005 through CY 2015. The Western region consistently had the highest coverage rates during this period (primarily because of the high rates in California), and the Mountain Plains region had the lowest coverage rates. See appendix C in volume II of this report for trends in coverage rates by region from 2005 through 2015 for each participant category.

Table 4.10. WIC Coverage Rates: CY 2005–CY 2015

Year	Eligibles	Participants	Coverage Rate (Percent)
2005	14,220,718	8,030,466	56.5
2006	13,980,361	8,125,552	58.1
2007	13,815,651	8,375,991	60.6
2008	14,142,538	8,819,130	62.4
2009	14,610,125	9,185,532	62.9
2010	14,789,179	9,109,192	61.6
2011	14,105,710	8,950,226	63.5
2012	14,016,864	8,862,323	63.2
2013	14,411,800	8,546,724	59.3
2014	15,005,308	8,227,771	54.8
2015	15,062,503	7,939,758	52.7

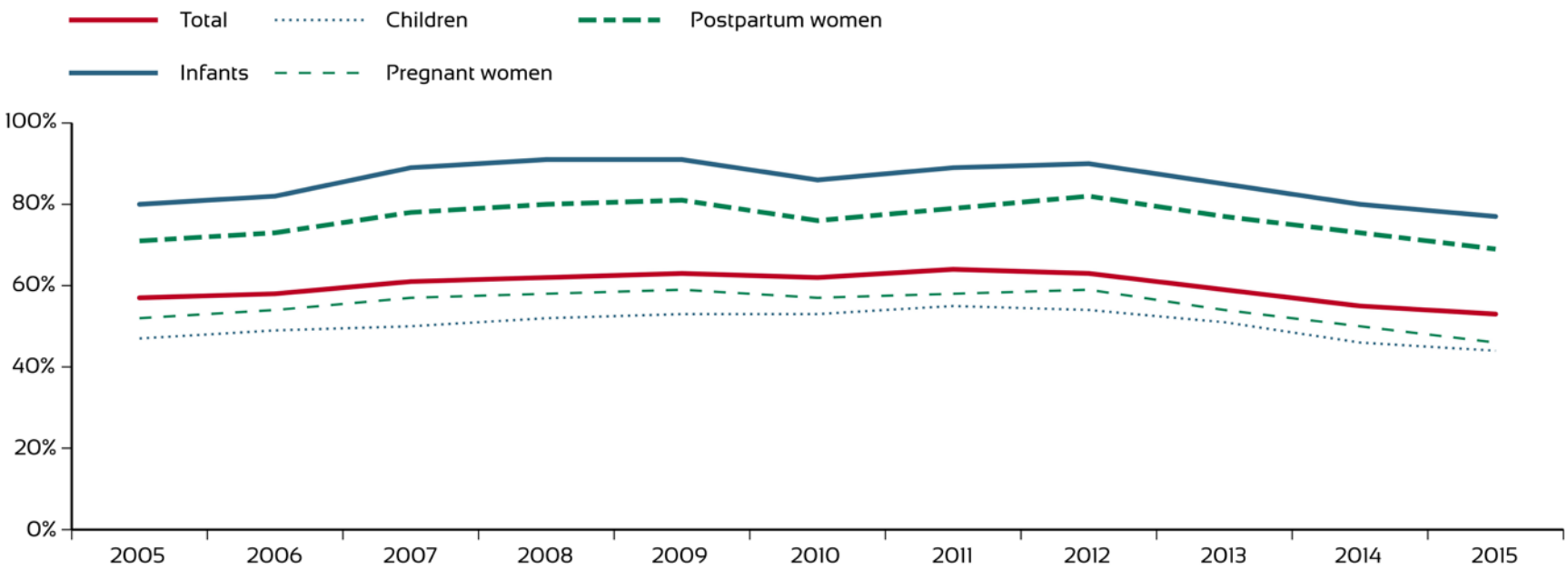
Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Table 4.11. WIC Coverage Rates (Percentages) by Participant Category: CY 2005–CY 2015

Year	All	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	All Children Aged 1–4	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Nonbreastfeeding Women	Total Postpartum Women
2005	56.5	80.3	62.0	49.0	45.1	32.0	47.4	52.4	61.4	81.3	70.8
2006	58.1	82.2	65.8	50.2	44.5	32.7	48.6	54.1	62.1	85.8	72.9
2007	60.6	88.5	67.9	51.3	44.7	33.9	49.8	56.5	64.1	95.3	77.7
2008	62.4	91.1	72.0	54.2	46.0	33.4	51.7	58.1	67.2	97.4	80.3
2009	62.9	90.5	75.4	54.0	46.5	35.2	53.1	59.0	68.4	95.8	80.5
2010	61.6	86.3	76.5	55.7	46.8	34.5	53.2	56.8	64.4	91.4	76.3
2011	63.5	88.5	73.6	59.5	50.7	35.1	54.8	57.9	65.1	99.4	79.3
2012	63.2	89.8	76.1	54.9	49.5	35.5	53.9	59.0	67.5	102.2	81.6
2013	59.3	84.6	70.0	51.6	48.0	32.6	50.5	54.0	63.3	97.2	76.6
2014	54.8	80.0	68.2	48.1	42.2	25.9	46.0	50.2	59.5	94.1	72.6
2015	52.7	76.9	62.8	47.0	41.8	26.3	44.4	46.4	57.4	88.9	69.2

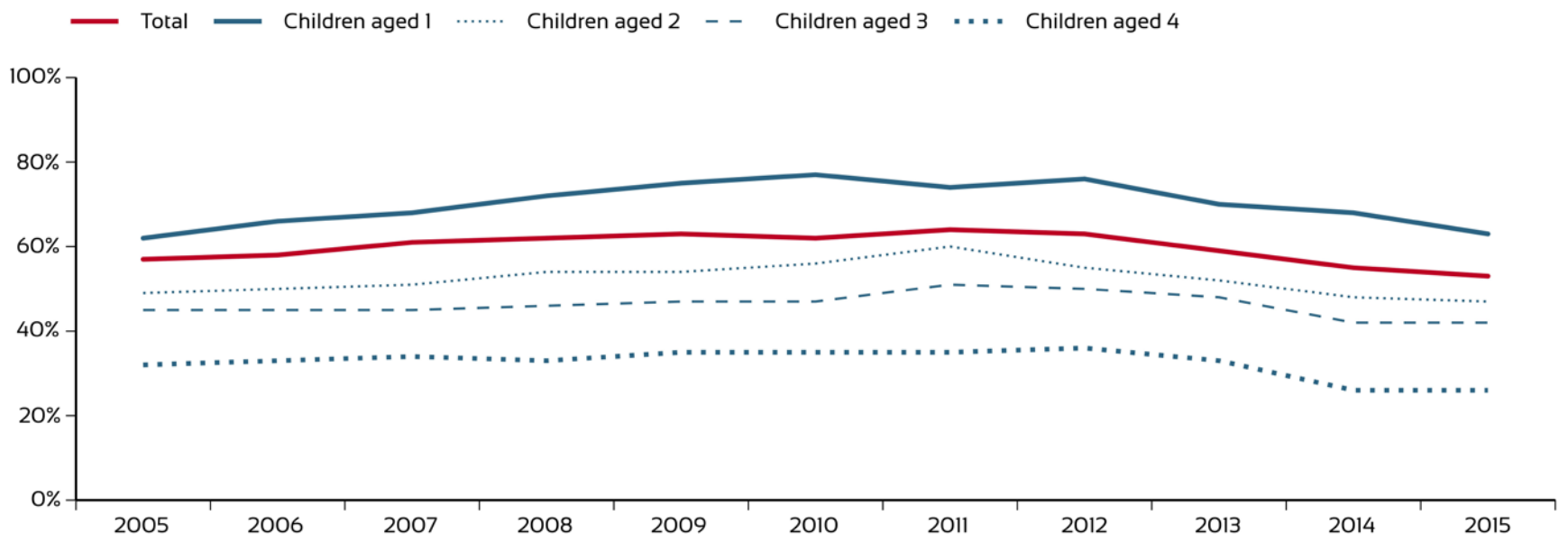
Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure 4.13. Trends in WIC Coverage Rates by Participant Category: CY 2005–CY 2015



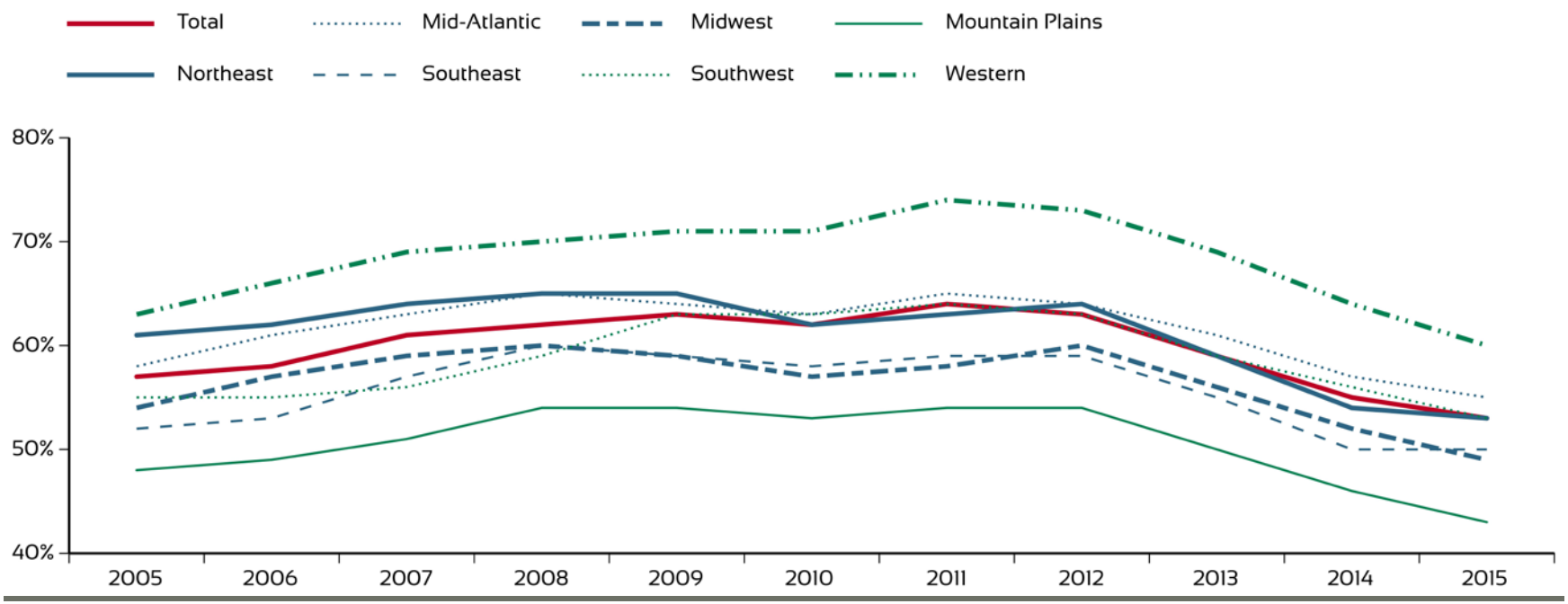
Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure 4.14. Trends in WIC Coverage Rates for Children by Year of Age: CY 2005–CY 2015



Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Figure 4.15. Trends in WIC Coverage Rates by Region: CY 2005–CY 2015



Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Chapter 5. WIC Participation Rates for CY 2015

This chapter presents CY 2015 estimates of the numbers of WIC participants as percentages of the total population of infants, children, and pregnant or postpartum women (known as participation rates). Participation rates are similar to coverage rates, but instead of comparing WIC participants with WIC-eligible individuals, WIC participants are compared with all individuals in the population, regardless of income level or nutritional risk. Participation rates are useful in understanding the overall reach of WIC across the population as a whole.

Section A presents 2015 national WIC participation rates by participant category, and section B presents State-level participation rates.

A. National-Level WIC Participation Rates

Approximately 29 percent of the total demographic population targeted by WIC received WIC benefits in 2015. Almost half (48 percent) of all infants in the Nation and U.S. territories and about a quarter (26 percent) of all children aged 1-4 received WIC benefits (see table 5.1). Similar to WIC coverage rates, participation rates for children were highest among 1-year-olds (35 percent) and decreased with age to 15 percent for 4-year-olds. A quarter (25 percent) of all pregnant women and 29 percent of all postpartum women received WIC benefits.

Table 5.1. WIC National-Level Participation Rates by Participant Category: CY 2015

Participant Category	Number Participating	Total Population	Participation Rate (Percent)
Infants	1,927,670	3,998,800	48.2
Total children aged 1–4	4,111,154	16,142,707	25.5
Children aged 1[a]	1,428,185	4,044,481	35.3
Children aged 2[a]	1,092,412	4,034,206	27.1
Children aged 3[a]	978,106	4,031,844	24.3
Children aged 4[a]	612,451	4,032,176	15.2
Pregnant women	758,250	2,987,403	25.4
Postpartum women	1,142,685	3,983,205	28.7
Breastfeeding women	593,604	2,147,025	27.6
Nonbreastfeeding women	549,081	1,836,179	29.9
Total	**7,939,758**	**27,112,115**	**29.3**

Notes
[a] WIC administrative data on participating children by year of age were not available. The numbers of participating children by year of age in this table are based on the distribution among children enrolled in WIC according to WIC PC2014 data.
Sources: NBER, n.d.; Thorn et al., 2015; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

B. State-Level WIC Participation Rates

Participation rates varied considerably among States. Rates ranged from a low of 17 percent in New Hampshire, North Dakota, and Utah to a high of 37 percent in California, compared with the national average of 29 percent (see table 5.2). Six States had participation rates lower than 21 percent (Colorado,

Connecticut, New Hampshire, North Dakota, Utah, and Virginia), and five States had participation rates higher than 32 percent (Arkansas, California, Mississippi, Texas, and Vermont).[41]

Table 5.2. WIC Participation Rates by State and FNS Region: CY 2015

State[a]	Participants	Total Population	Participation Rate (Percent)
Alabama	131,294	395,697	33.2
Alaska	19,584	74,086	26.4
Arizona	167,106	578,716	28.9
Arkansas	84,180	255,655	32.9
California	1,243,411	3,385,381	36.7
Colorado	90,174	452,446	19.9
Connecticut	50,716	251,253	20.2
Delaware	18,728	74,988	25.0
District of Columbia	14,462	60,446	23.9
Florida	484,409	1,494,128	32.4
Georgia	260,836	896,389	29.1
Hawaii	31,027	123,119	25.2
Idaho	40,143	151,848	26.4
Illinois	238,977	1,055,998	22.6
Indiana	152,046	561,934	27.1
Iowa	62,790	263,992	23.8
Kansas	61,877	263,212	23.5
Kentucky	115,039	369,092	31.2
Louisiana	128,432	421,295	30.5
Maine	21,512	86,459	24.9
Maryland	142,381	500,008	28.5
Massachusetts	113,509	493,263	23.0
Michigan	242,002	767,734	31.5
Minnesota	118,281	471,857	25.1
Mississippi	88,260	262,301	33.6
Missouri	132,948	502,605	26.5
Montana	18,387	82,960	22.2
Nebraska	37,306	176,044	21.2
Nevada	72,415	239,206	30.3
New Hampshire	14,627	86,365	16.9
New Jersey	160,382	713,035	22.5
New Mexico	54,291	180,388	30.1
New York	468,973	1,595,317	29.4
North Carolina	247,384	818,157	30.2
North Dakota	12,433	71,752	17.3
Ohio	242,104	930,952	26.0

[41] Puerto Rico, which is an outlier with respect to State-level WIC participation as a percentage of total population, had a participation rate of 70 percent.

State[a]	Participants	Total Population	Participation Rate (Percent)
Oklahoma	111,670	357,621	31.2
Oregon	96,979	310,991	31.2
Pennsylvania	244,071	958,312	25.5
Puerto Rico	163,785	233,355	70.2
Rhode Island	20,543	74,244	27.7
South Carolina	112,347	393,820	28.5
South Dakota	19,385	81,637	23.7
Tennessee	147,922	541,517	27.3
Texas	878,398	2,693,176	32.6
Utah	58,237	339,007	17.2
Vermont	13,520	40,664	33.2
Virginia	138,478	695,439	19.9
Washington	174,526	601,674	29.0
West Virginia	41,261	137,187	30.1
Wisconsin	104,116	454,442	22.9
Wyoming	10,894	51,292	21.2
FNS Region			
Northeast	703,399	2,627,563	26.8
Mid-Atlantic	927,895	3,380,254	27.5
Southeast	1,587,489	5,171,101	30.7
Midwest	1,097,525	4,242,918	25.9
Southwest	1,256,972	3,908,135	32.2
Mountain Plains	504,430	2,284,946	22.1
Western	1,862,049	5,497,197	33.9
Total	**7,939,758**	**27,112,115**	**29.3**

Notes

[a] State and regional eligibility estimates and participant data include individuals in ITOs who were eligible for WIC and/or receiving WIC.

Sources: IPUMS-USA, n.d.; NBER, n.d.; U.S. Census Bureau, n.d.d; unpublished internal WIC administrative data

Chapter 6. Measures of Precision of the Estimates of Eligibility

Coverage and participation estimates were calculated, in part, using data from several large-scale, complex, nationally representative surveys, including the CPS-ASEC (NBER, n.d.) and the ACS (IPUMS-USA, n.d.). Several sources of error can cause sample estimates to differ from the corresponding true population values. These sources of error are commonly classified into two major categories: sampling errors and nonsampling errors. To compensate for sampling error, weights were constructed and prepared following data collection to inflate the respondents' data to represent the entire universe.

To measure that uncertainty, standard errors were produced for the 2015 national-, regional-, and State-level WIC eligibility estimates.[42] The standard errors for the national-level estimates were derived using the generalized variance formulas described in the technical documentation for the March 2016 CPS-ASEC (U.S. Census Bureau & U.S. Department of Labor, Bureau of Labor Statistics, n.d.).[43] The standard errors for the State-level estimates were derived using a generalized variance model described in the annual ACS report based on 1-year accuracy of the data (U.S. Census Bureau, n.d.c). Tables 6.1 and 6.2 present these standard errors as well as the coefficients of variation, which is the ratio of the standard deviation to the eligibility estimate. Because the coefficient of variation is expressed in percentage terms, it allows easier comparisons of the relative precision of various estimates. The precision of the eligibility estimates is highest for the total WIC-eligible population (2.6 percent). The coefficients of variation for the 2015 national eligibility estimates were higher for infants, pregnant women, and postpartum women (5.3 percent for each) than children (2.7 percent), reflecting the larger sample size for children (see table 6.1).

Table 6.1. Standard Errors and Coefficients of Variation for WIC Eligibles by FNS Region and Participant Category: CY 2015

Region	Infants	Children Aged 1–4	Pregnant Women	All Postpartum Women	Total
			Eligibles[a]		
Northeast	216,978	818,395	141,512	154,510	1,331,395
Mid-Atlantic	248,116	927,463	161,820	162,649	1,500,048
Southeast	539,363	1,951,240	351,771	334,096	3,176,471
Midwest	370,624	1,384,142	241,719	233,602	2,230,087
Southwest	399,527	1,457,684	260,570	250,896	2,368,678
Mountain Plains	197,829	698,992	129,023	133,885	1,159,729
Western	497,015	1,894,449	324,151	357,924	3,073,539
Total	**2,469,451**	**9,132,365**	**1,610,567**	**1,627,562**	**14,839,946**

[42] Estimates of WIC eligibility for U.S. territories other than Puerto Rico are based not upon samples but rather on U.S. Census Bureau estimates of the population by age (U.S. Census Bureau, n.d.d). These estimates were not subject to sampling variability.

[43] See appendix G for the generalized variance standard error formulas. Applying these methods required choosing a specific pair of "a" and "b" parameters for use in the formulas. The study team used the parameters for "income characteristics" for all people when computing the standard errors for the total population estimates and used the "below poverty" parameters for computing the standard errors for the WIC eligibility estimates.

Region	Infants	Children Aged 1–4	Pregnant Women	All Postpartum Women	Total
Standard Error[a]					
Northeast	17,325	33,345	12,872	13,471	47,590
Mid-Atlantic	19,035	36,396	14,036	13,940	52,017
Southeast	34,291	63,709	24,107	23,267	96,038
Midwest	25,562	48,773	18,397	17,895	71,121
Southwest	27,073	50,732	19,393	18,834	74,985
Mountain Plains	16,257	29,938	12,140	12,263	43,189
Western	32,117	62,224	22,695	24,518	93,228
Total	**131,010**	**246,517**	**85,445**	**86,346**	**390,460**
Coefficient of Variation[b] (Percents)					
Northeast	8.0	4.1	9.1	8.7	3.6
Mid-Atlantic	7.7	3.9	8.7	8.6	3.5
Southeast	6.4	3.3	6.9	7.0	3.0
Midwest	6.9	3.5	7.6	7.7	3.2
Southwest	6.8	3.5	7.4	7.5	3.2
Mountain Plains	8.2	4.3	9.4	9.2	3.7
Western	6.5	3.3	7.0	6.9	3.0
Total	**5.3**	**2.7**	**5.3**	**5.3**	**2.6**

Notes
[a] Estimates for U.S. territories are not included in regional totals or standard errors.
[b] The coefficient of variation is defined as the ratio of the standard deviation to the eligibility estimate.
Sources: IPUMS-USA, n.d.; NBER, n.d.

For all States, the precision of the State-level estimates is lower than that of the national-level estimates, ranging from 3.2 percent for California to 15.6 percent for Wyoming (see table 6.2). At the regional level, however, the precision of the estimates is relatively high, ranging from 3.0 percent to 3.6 percent.

Table 6.2. WIC Eligibles Standard Errors by State and FNS Region: CY 2015

State[a]	Eligibles	Standard Error	Coefficient of Variation[b] (Percent)
Alabama	242,502	14,224	5.9
Alaska	39,888	4,683	11.7
Arizona	329,219	17,626	5.4
Arkansas	174,843	11,368	6.5
California	1,911,706	61,277	3.2
Colorado	220,959	13,444	6.1
Connecticut	107,811	8,942	8.3
Delaware	36,272	5,014	13.8
District of Columbia	28,486	4,265	15.0
Florida	945,960	35,717	3.8
Georgia	535,291	24,020	4.5
Hawaii	55,255	6,487	11.7
Idaho	88,337	7,746	8.8

State[a]	Eligibles	Standard Error	Coefficient of Variation[b] (Percent)
Illinois	549,968	24,292	4.4
Indiana	311,910	16,010	5.1
Iowa	142,283	8,768	6.2
Kansas	132,535	9,361	7.1
Kentucky	215,143	12,397	5.8
Louisiana	250,681	14,890	5.9
Maine	42,262	4,651	11.0
Maryland	237,998	14,563	6.1
Massachusetts	210,874	13,068	6.2
Michigan	437,390	18,904	4.3
Minnesota	208,727	11,384	5.5
Mississippi	187,174	12,592	6.7
Missouri	283,174	15,133	5.3
Montana	46,828	4,890	10.4
Nebraska	86,645	6,877	7.9
Nevada	141,662	10,766	7.6
New Hampshire	35,416	4,585	12.9
New Jersey	316,238	17,243	5.5
New Mexico	127,906	10,125	7.9
New York	876,817	33,736	3.8
North Carolina	480,251	21,765	4.5
North Dakota	26,373	3,306	12.5
Ohio	507,598	22,111	4.4
Oklahoma	228,713	11,631	5.1
Oregon	181,220	12,428	6.9
Pennsylvania	489,575	20,814	4.3
Rhode Island	37,248	4,909	13.2
South Carolina	228,293	14,115	6.2
South Dakota	39,846	4,304	10.8
Tennessee	341,855	17,983	5.3
Texas	1,586,534	53,065	3.3
Utah	156,990	11,426	7.3
Vermont	20,966	2,801	13.4
Virginia	306,759	16,323	5.3
Washington	326,252	17,466	5.4
West Virginia	84,718	7,286	8.6
Wisconsin	214,494	11,556	5.4
Wyoming	24,095	3,766	15.6

State[a]	Eligibles	Standard Error	Coefficient of Variation[b] (Percent)
FNS Region[c]			
Northeast	1,331,395	47,590	3.6
Mid-Atlantic	1,500,048	52,017	3.5
Southeast	3,176,471	96,038	3.0
Midwest	2,230,087	71,121	3.2
Southwest	2,368,678	74,985	3.2
Mountain Plains	1,159,729	43,189	3.7
Western	3,073,539	93,228	3.0
Total	**14,839,946**	**390,460**	**2.6**

Notes
[a] State and regional eligibility estimates include individuals in ITOs who were eligible for WIC.
[b] The coefficient of variation is defined as the ratio of the standard deviation to the eligibility estimate.
[c] Estimates for U.S. territories are not included in regional totals or standard errors.
Sources: IPUMS-USA, n.d.; NBER, n.d.

The coefficients of variation were also estimated for coverage rates for participant categories across States (see table 6.3) and for coverage rates by race and ethnicity (see table 6.4). As shown in table 6.3, the coefficients of variation for infant coverage rates ranged from 7 percent (California) to 37 percent (Wyoming). Similarly, the coefficients of variation for White-Only Non-Hispanics ranged from 6 percent (California, Florida, Michigan, Ohio, Pennsylvania, Texas) to 25 percent (Wyoming; see table 6.4). Therefore, it is particularly important to use caution when examining State coverage rates by participant category, especially for small States.

The statistics can be used to estimate a confidence interval around the estimates of WIC eligibility and coverage rates. For example, there is a 90-percent likelihood that the actual number of WIC-eligible individuals (overall, by participant category, by region, or by State) is at minimum equal to the estimate obtained through the methods used to calculate the estimates (the "point estimate") minus 1.65 times the standard error, and is at most equal to the point estimate plus 1.65 times the standard error. As an illustration of the computation, consider the overall WIC eligibility estimate for the Northeast (see table 6.1). The point estimate is that there were 1,331,395 people eligible for WIC in the Northeast in the average month of 2015. The standard error of that estimate is 47,590. There is a 90-percent likelihood that the true number falls within the range from (1,331,395 minus (1.65 × 47,590)) to (1,331,395 plus (1.65 × 47,590)), or from 1,253,872 to 1,409,919. To achieve a 95-percent level of confidence, the process would be the same, but a factor of 1.96 would be applied to the standard error.

A similar method can be used to estimate a confidence interval around the estimates of WIC coverage rates. For example, there is a 90-percent likelihood that the actual coverage rates shown in table 4.8 are equal to the point estimates shown plus or minus 1.65 times the standard error.[44] As an illustration, consider the WIC coverage rate for individuals in Florida (see table 4.8). The point estimate for the coverage rate in Florida is 51.2 percent. The standard error of that estimate is 1.95 (.512 x .038). There is a 90-perent likelihood that the true coverage rate falls within the range of (51.2 plus/minus (1.65 x 1.95)), or 51.2 plus/minus 3.2, which is from 48.0 percent to 54.4 percent.

The confidence interval can also be directly estimated using the margin of error (MOE). The MOE is a measure of an estimate's variability. The larger the MOE in relation to the size of the estimate, the less reliable the estimate. This number, when added to and subtracted from the estimate, forms the 90-percent confidence interval. MOEs for a 90-percent confidence interval can be interpreted to mean there is a 90-percent chance that the true value—that is, the true coverage rate—falls within the estimated bounds determined by the MOE. In the Florida example, the 90-percent confidence interval around the coverage rate is 51.2 percent plus/minus the MOE, which is 3.2. Thus, there is a 90-percent likelihood that the true coverage rate for Florida falls between 51.2 plus/minus 3.2, or between 48.0 and 54.4 percent. Tables showing MOEs for all State-level coverage rates are in volume II of this report (see table B.10 for State-level coverage rates by participant categories and table B.11 for State-level coverage rates by race and ethnicity categories).

Some sources of error—such as unusable responses to vague or sensitive questions (e.g., whether they fully report the kinds of benefits they receive); nonresponses; and errors in coding, scoring, and processing the data—are called "nonsampling errors" and occur in cases when there is a complete enumeration of a target population. Nonresponse to the survey is one of the largest sources of nonsampling error because a characteristic being estimated may differ, on average, between respondents and nonrespondents. Systematic errors are reduced by the survey methodology used, including careful wording of questionnaire items and well-designed data-collection and data-management procedures. However, there are no formulas for assessing these types of nonsampling errors.

[44] The standard error of the rate can be calculated as the product of the coverage rate and the coefficient of variation.

Table 6.3. Coefficients of Variation of WIC Coverage Rates (Percentages) by State and Participant Category: CY 2015

State	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	Pregnant Women	Postpartum Women	Total
Alabama	13.5	14.3	14.9	14.4	14.3	16.2	17.1	5.9
Alaska	31.3	30.4	27.5	28.8	28.2	38.6	34.9	11.7
Arizona	12.5	13.2	13.0	13.0	13.1	15.0	14.5	5.4
Arkansas	15.1	16.6	15.8	15.8	16.6	18.3	18.7	6.5
California	7.0	7.1	7.1	7.1	7.1	7.8	7.5	3.2
Colorado	14.5	15.3	14.5	14.8	15.5	17.6	16.7	6.1
Connecticut	20.3	21.1	21.9	19.9	20.1	24.8	23.8	8.3
Delaware	35.4	34.1	32.7	35.4	33.9	43.7	44.2	13.8
District of Columbia	37.8	37.0	40.6	39.1	33.8	46.6	45.5	15.0
Florida	8.5	8.7	8.7	8.7	8.7	9.7	9.5	3.8
Georgia	10.3	10.8	10.7	10.8	10.6	12.1	12.1	4.5
Hawaii	28.2	31.3	30.1	28.9	30.9	34.8	31.9	11.7
Idaho	21.5	21.5	22.4	22.2	22.3	26.4	23.9	8.8
Illinois	10.4	10.4	10.6	10.4	10.4	12.3	12.2	4.4
Indiana	12.2	12.2	12.4	12.4	12.4	14.6	14.6	5.1
Iowa	14.2	15.8	14.7	15.7	15.6	17.1	16.5	6.2
Kansas	16.8	18.9	16.8	17.6	17.4	20.5	20.2	7.1
Kentucky	13.6	13.8	14.8	13.7	14.2	16.4	16.7	5.8
Louisiana	14.1	14.8	14.4	14.3	14.5	17.0	17.8	5.9
Maine	25.5	29.2	29.6	28.4	28.4	31.4	29.2	11.0
Maryland	14.1	16.2	15.1	15.5	14.7	17.0	16.2	6.1
Massachusetts	14.9	15.2	15.4	15.2	15.3	18.1	17.0	6.2
Michigan	9.9	10.1	10.4	10.2	10.3	11.7	11.6	4.3
Minnesota	13.1	13.4	12.9	13.5	13.6	15.7	14.6	5.5
Mississippi	15.8	16.8	17.1	16.7	16.3	19.1	20.1	6.7
Missouri	12.5	12.8	13.3	13.0	13.0	15.0	14.8	5.3
Montana	26.6	26.7	24.9	28.2	24.3	32.7	30.5	10.4

State	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	Pregnant Women	Postpartum Women	Total
Nebraska	18.0	20.4	21.4	21.6	19.3	21.9	21.0	7.9
Nevada	18.2	19.6	18.5	19.3	18.9	22.1	21.4	7.6
New Hampshire	34.7	34.1	30.9	29.7	31.5	42.7	40.2	12.9
New Jersey	12.6	13.6	13.1	13.5	13.5	15.2	14.4	5.5
New Mexico	20.2	18.6	19.5	20.0	19.2	24.7	23.7	7.9
New York	8.8	8.9	9.0	8.8	8.9	10.2	9.6	3.8
North Carolina	10.5	10.8	11.0	10.6	10.8	12.4	12.3	4.5
North Dakota	30.9	29.3	30.5	33.6	34.2	38.0	36.3	12.5
Ohio	9.8	10.3	10.4	10.5	10.2	11.5	11.8	4.4
Oklahoma	11.9	12.6	12.1	12.4	12.1	14.3	14.1	5.1
Oregon	16.0	17.2	17.4	18.3	16.9	19.4	17.6	6.9
Pennsylvania	10.0	10.2	10.1	9.9	9.8	11.8	11.7	4.3
Rhode Island	30.8	36.4	34.2	32.6	34.5	37.9	37.0	13.2
South Carolina	14.6	15.2	15.5	15.0	15.2	17.7	18.0	6.2
South Dakota	26.3	29.0	26.2	26.0	28.4	32.4	31.1	10.8
Tennessee	12.4	12.8	12.7	12.8	12.7	14.8	14.8	5.3
Texas	7.2	7.5	7.4	7.5	7.5	8.1	8.1	3.3
Utah	17.4	17.4	18.5	19.5	18.4	21.2	18.9	7.3
Vermont	31.0	34.3	37.7	32.9	38.3	38.2	34.5	13.4
Virginia	12.8	13.0	12.9	12.3	13.3	15.4	14.8	5.3
Washington	12.9	12.8	13.0	13.1	13.1	15.6	14.3	5.4
West Virginia	20.9	21.4	20.9	21.5	21.9	25.6	26.2	8.6
Wisconsin	13.0	13.3	13.0	13.1	13.0	15.6	14.7	5.4
Wyoming	37.0	39.8	40.6	44.3	39.5	45.7	42.4	15.6
Total[a]	**5.3**	**5.4**	**5.4**	**5.4**	**5.4**	**5.3**	**5.3**	**2.6**

Notes

[a] Estimates for U.S. territories are not included in the totals.

The coefficient of variation is defined as the ratio of the standard error of the coverage rate to the point estimate of the coverage rate.

Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; unpublished internal WIC administrative data

Table 6.4. Coefficients of Variation of WIC Coverage Rates (Percentages) by State and by Race and Ethnicity: CY 2015

State	White-Only Non-Hispanic	Black-Only and Other Non-Hispanic[a]	Hispanic	Total
Alabama	8.9	8.9	17.1	5.9
Alaska	17.8	17.4	35.2	11.7
Arizona	9.7	12.2	7.4	5.4
Arkansas	8.9	11.9	15.3	6.5
California	6.0	6.5	4.6	3.2
Colorado	9.2	16.1	9.2	6.1
Connecticut	14.1	16.6	12.8	8.3
Delaware	25.1	20.5	27.8	13.8
District of Columbia	86.3	17.0	34.9	15.0
Florida	6.0	6.6	6.1	3.6
Georgia	7.3	6.9	9.2	4.5
Hawaii	27.9	16.0	21.8	11.7
Idaho	10.6	33.8	18.4	8.8
Illinois	7.2	7.8	7.4	4.4
Indiana	6.8	10.0	12.5	5.1
Iowa	7.7	14.6	15.4	6.2
Kansas	9.7	15.7	13.4	7.1
Kentucky	7.0	12.9	21.9	5.8
Louisiana	9.5	8.5	18.8	5.9
Maine	12.0	36.8	75.3	11.0
Maryland	11.1	9.0	12.0	6.1
Massachusetts	9.8	11.7	10.4	6.2
Michigan	5.9	7.5	11.6	4.3
Minnesota	7.5	9.6	13.6	5.5
Mississippi	10.4	9.5	26.6	6.7
Missouri	6.9	10.2	16.7	5.3
Montana	12.3	22.1	58.0	10.4
Nebraska	11.3	16.2	14.6	7.9
Nevada	14.0	16.0	10.8	7.6
New Hampshire	14.2	49.2	50.8	12.9
New Jersey	10.2	9.9	8.0	5.5
New Mexico	16.4	19.4	10.3	7.9
New York	6.2	6.8	6.2	3.8
North Carolina	7.1	7.4	8.8	4.5
North Dakota	15.6	24.0	45.7	12.5
Ohio	5.8	7.7	13.2	4.4
Oklahoma	7.3	9.2	10.5	5.1

State	White-Only Non-Hispanic	Black-Only and Other Non-Hispanic[a]	Hispanic	Total
Oregon	9.1	18.5	12.3	6.9
Pennsylvania	6.0	7.7	9.0	4.3
Rhode Island	20.7	31.6	20.2	13.2
South Carolina	9.6	9.1	17.7	6.2
South Dakota	14.4	18.2	37.6	10.8
Tennessee	7.2	9.3	13.5	5.3
Texas	6.0	6.7	4.8	3.3
Utah	9.2	22.6	14.2	7.3
Vermont	14.5	45.6	79.4	13.4
Virginia	8.3	8.5	11.3	5.3
Washington	7.7	11.2	9.4	5.4
West Virginia	9.5	33.0	46.9	8.6
Wisconsin	7.4	10.3	11.6	5.4
Wyoming	19.6	39.9	34.6	15.6
Total[b]	3.9	4.6	4.1	2.6

Notes
[a] The Black-Only Non-Hispanic and Other Non-Hispanic categories were combined because of sample size concerns.
[b] Estimates for U.S. territories are not included in the totals.
The coefficient of variation is defined as the ratio of the standard error of the coverage rate to the point estimate of the coverage rate.
Sources: IPUMS-USA, n.d.; NBER, n.d.; Thorn et al., 2015; unpublished internal WIC administrative data

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