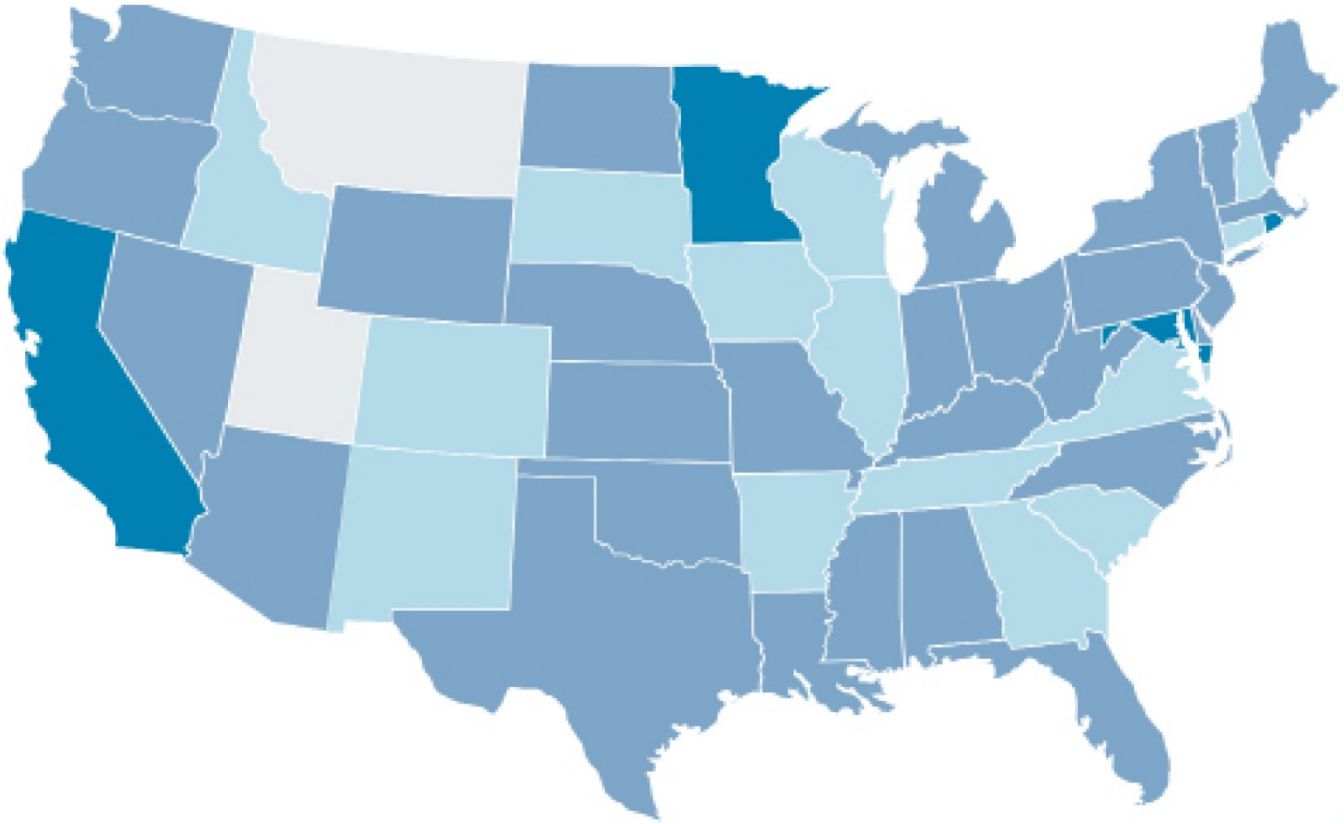
U.S. Department of Agriculture

Volume 1

National- and State-Level Estimates of WIC Eligibility and WIC Program Reach in 2017



December 2019

Nutrition Assistance Program Report Series, Food and Nutrition Service, Office of Policy Support

National- and State-Level Estimates of WIC Eligibility and WIC Program Reach in 2017

Final Report: Volume I

Contract: GS-10F-0136X
Order: AG-3198-D-16-0095/0002

December 2019

Authors

Kelsey Gray, Carole Trippe, Chrystine Tadler, and Clay Perry (Insight Policy Research)
Paul Johnson (Urban Institute)
David Betson (University of Notre Dame)

Submitted to

USDA Food and Nutrition Service
Contracts Management Division
3101 Park Center Drive
Alexandria, VA 22302

Project Officer

Grant Lovellette

Submitted by

Insight Policy Research, Inc.
1901 North Moore Street
Suite 1100
Arlington, VA 22209

Project Director

Carole Trippe

Acknowledgements

The authors gratefully acknowledge the guidance provided by numerous individuals at the Food and Nutrition Service (FNS) and other organizations. Grant Lovellette, the FNS Project Officer, provided leadership and guidance throughout the project. We also thank the FNS and WIC staff who provided insight and review throughout the project. Staff members of the Centers for Disease Control and Prevention supplied tabulations of national- and State-level breastfeeding rates from the National Immunization Survey.

Many Insight Policy Research (Insight) colleagues made key contributions to this report. In particular, we thank Jeff Marr and Sarah Hong, whose work preparing and reviewing the tables and figures was invaluable. We also thank Betsy Thorn and Sidra Montgomery for their careful review and comments on the report. Dar Haddix edited the report, and Kim Kerson provided graphics and final production.

USDA is an equal opportunity provider, employer, and lender.

Contents

Executive Summary i

Chapter 1. Introduction 1

Chapter 2. Methodology 2

A. Overview of Methods 2

B. Determining the Number of Infants and Children Eligible for WIC 3

C. Determining the Number of Pregnant Women Eligible for WIC 6

D. Determining the Number of Postpartum Women Eligible for WIC 7

E. Computing Coverage Rates 9

F. Computing Participation Rates 9

G. Changes From Previous Year's Report 10

Chapter 3. Estimates of WIC Eligibility for CY 2017 16

A. National-Level Estimates of Individuals Eligible for WIC 16

B. Regional- and State-Level Estimates of Individuals Eligible for WIC 22

C. Changes in the Numbers of Individuals Eligible for WIC: CY 2015–CY 2017 25

D. Trends in WIC Eligibility Estimates: CY 2005–CY 2017 27

Chapter 4. WIC Coverage Rates for CY 2017 29

A. National-Level WIC Coverage Rates 29

B. Regional- and State-Level WIC Coverage Rates 32

C. Changes in WIC Coverage Rates: CY 2015–CY 2017 51

D. Trends in WIC Coverage Rates: CY 2005–CY 2017 54

Chapter 5. WIC Participation Rates for CY 2017 59

A. National-Level WIC Participation Rates 59

B. State- and Regional-Level WIC Participation Rates 60

Chapter 6. Measures of Precision for the Estimates of Eligibility 62

References 71

Tables

Chapter 2. Methodology

Table 2.1. Steps, Data Sources, Methods, and Adjustment Factors Used for 2017 Estimates of WIC Eligibility 11

Table 2.2. Step-by-Step Adjustments Applied to CPS-ASEC Data to Derive the Average Monthly Number of Individuals Eligible for WIC by Participant Category: CY 2017 14

Chapter 3. Estimates of WIC Eligibility for CY 2017

Table 3.1. Estimated Average Monthly Number of Individuals Eligible for WIC by Participant Category: CY 2017 16

Table 3.2. Distribution of the Average Monthly Numbers of Infants, Children, and Infants and Children Eligible for WIC (Percentage) by Demographic and Income Characteristics and Adjunctive Eligibility: CY 2017 19

Table 3.3. Distribution of Individuals Eligible for WIC (Percentage) by FNS Region and Participant Category: CY 2017 22

Table 3.4. WIC Eligibility Rates by FNS Region and Participant Category: CY 2017 23

Table 3.5. Distribution of Individuals Eligible for WIC (Percentage) by State and FNS Region: CY 2017 24

Table 3.6. Changes in the Total Population, Total WIC Eligibility, and WIC Eligibility Rates by Participant Category: CY 2015–CY 2017 26

Table 3.7. Estimated Average Monthly Number of Individuals Eligible for WIC by Year and Participant Category: CY 2005–CY 2017 27

Chapter 4. WIC Coverage Rates for CY 2017

Table 4.1. WIC Coverage Rate by Participant Category: CY 2017 29

Table 4.2. WIC Eligibility, Participants, and Coverage Rates by Participant Category and by Race and Ethnicity: CY 2017 31

Table 4.3. WIC Eligibility, Participants, and Coverage Rates by FNS Region and Participant Category: CY 2017 34

Table 4.4. WIC Eligibility, Participants, and Coverage Rates by FNS Region and by Race and Ethnicity Category: CY 2017 35

Table 4.5. WIC Eligibility, Participants, and Coverage Rates by State and FNS Region: CY 2017 36

Table 4.6. WIC Coverage Rates by State and Participant Category: CY 2017 39

Table 4.7. State-Level WIC Coverage Rates by Race and Ethnicity: CY 2017 46

Table 4.8. Change in WIC Coverage Rate by Participant Category: CY 2015–CY 2017 51

Table 4.9. WIC Coverage Rates by FNS Region and Participant Category: CY 2015–CY 2017 53

Table 4.10. WIC Coverage Rates: CY 2005–CY 2017 54

Table 4.11. WIC Coverage Rates by Participant Category: CY 2005–CY 2017 55

Chapter 5. WIC Participation Rates for CY 2017

Table 5.1. WIC Participation Rates by Participant Category: CY 2017 59

Table 5.2. WIC Participation Rates by State and FNS Region: CY 2017 60

Chapter 6. Measures of Precision for the Estimates of Eligibility

Table 6.1. Standard Errors and Coefficients of Variation for Estimated Number of Individuals Eligible for WIC by FNS Region and Participant Category: CY 2017 62

Table 6.2. Standard Errors for Estimated Number of Individuals Eligible for WIC by State and FNS Region: CY 2017 63

Table 6.3. Coefficients of Variation of WIC Coverage Rates by State and Participant Category: CY 2017 67

Table 6.4. Coefficients of Variation of WIC Coverage Rates by State and by Race and Ethnicity: CY 2017 69

Figures

Chapter 3. Estimates of WIC Eligibility for CY 2017

Figure 3.1. Distribution of Individuals Eligible for WIC: CY 2017 17

Figure 3.2. WIC Eligibility Rate by Participant Category: CY 2017 17

Figure 3.3. Characteristics of Infants and Children Eligible for WIC: CY 2017 22

Figure 3.4. WIC Eligibility Rates by FNS Region and Participant Category: CY 2017 23

Figure 3.5. Trends in WIC Eligibility by Participant Category: CY 2005–CY 2017 28

Chapter 4. WIC Coverage Rates for CY 2017

Figure 4.1. WIC Coverage Rate by Participant Category: CY 2017 30

Figure 4.2. WIC Coverage Rates for Children by Year of Age and Postpartum Women by Breastfeeding Status: CY 2017 30

Figure 4.3. WIC Coverage Rates by Race and Ethnicity and by Participant Category: CY 2017 32

Figure 4.4. WIC Coverage Rate for Total Eligible Individuals by State: CY 2017 38

Figure 4.5. WIC Coverage Rate for Infants by State: CY 2017 42

Figure 4.6. WIC Coverage Rate for Children Aged 1–4 by State: CY 2017 43

Figure 4.7. WIC Coverage Rate for Pregnant Women by State: CY 2017 44

Figure 4.8. WIC Coverage Rate for Postpartum Women by State: CY 2017 45

Figure 4.9. WIC Coverage Rate for White-Only Non-Hispanic Individuals by State: CY 2017 48

Figure 4.10. WIC Coverage Rate for Black-Only and Other Non-Hispanic Individuals by State: CY 2017 49

Figure 4.11. WIC Coverage Rate for Hispanic Individuals by State: CY 2017 50

Figure 4.12. Change in WIC Coverage Rate by Participant Category: CY 2015–CY 2017 52

Figure 4.13. Trends in WIC Coverage Rates by Participant Category: CY 2005–CY 2017 56

Figure 4.14. Trends in WIC Coverage Rates for Children by Year of Age: CY 2005–CY 2017 57

Figure 4.15. Trends in WIC Coverage Rates by FNS Region: CY 2005–CY 2017 58

Executive Summary

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides nutritious foods, nutrition education that includes 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 receive vouchers, checks, or electronic benefit transfer cards for prescribed foods and redeem them at authorized retail vendors at no charge.

To be eligible for WIC, an applicant must be categorically eligible as a pregnant, postpartum breastfeeding,[1] or postpartum non-breastfeeding[2] woman; an infant up to age 1; or a child up to age 5. 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 (2017).[3] 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. Applicants must live in the State in which they apply or meet the residency requirements established by an Indian Tribal Organization (ITO).

This report presents estimates of the number of individuals eligible for WIC benefits and the percentage of the eligible population participating in calendar year (CY) 2017. For the purposes of this report, WIC participants are defined as those individuals who were enrolled in WIC and claimed their benefits in an average month of CY 2017. WIC provides services in 90 State agencies: the 50 States; the District of Columbia; 5 U.S. territories (American Samoa, Guam, the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands); and 34 ITOs. Estimates are provided at the national, regional, and State levels, and include Puerto Rico and other U.S. territories.[4] Estimates are also provided by participant category—i.e., infants, children, pregnant women, and postpartum women—and by race and ethnicity.

A. Results

1. WIC Eligibility Estimates

In an average month in CY 2017, 14.1 million individuals were eligible for WIC (see table ES.1). Of those eligible to participate in WIC, almost two-thirds (63 percent) were children aged 1 to 4, 21 percent were women, and 16 percent were infants. Children eligible for WIC were evenly distributed by year of age. Pregnant and postpartum women represented about 10 percent and 11 percent of the eligible population, respectively.

The eligibility rate is the percentage of the total population in each participant category who are estimated to be eligible for WIC. In an average month in CY 2017, more than half of all infants and children aged 1 to 4 (56 and 55 percent, respectively) were eligible for WIC (see figure ES.1). Nearly half (49 percent) of all pregnant women and 39 percent of all postpartum women were eligible.

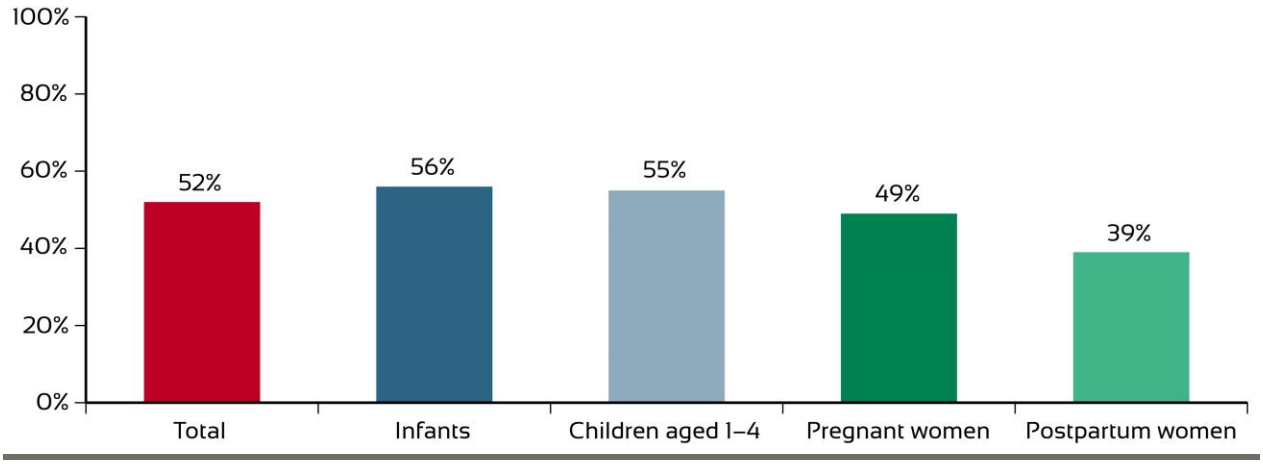
[1] Breastfeeding women are categorically eligible up to 1 year postpartum.
[2] Non-breastfeeding women are categorically eligible up to 6 months postpartum.
[3] These guidelines are based on household size. The 48 contiguous States, the District of Columbia, and the U.S. territories served by WIC have the same guidelines; Alaska and Hawaii have different guidelines.
[4] Data for those eligible for WIC through ITOs are included in the data for the State where the ITO is located.

Table ES.1. Estimated Average Monthly Number of Individuals Eligible for WIC by Participant Category: CY 2017

Participant Category	Number Eligible	Percent of Total Eligible	Total Population	Eligibility Rate
Infants	2,227,965	15.8	3,959,629	56.3
Children aged 1–4	8,859,001	63.0	16,133,557	54.9
Children aged 1	2,250,293	16.0	3,983,480	56.5
Children aged 2	2,268,129	16.1	4,046,080	56.1
Children aged 3	2,194,926	15.6	4,074,089	53.9
Children aged 4	2,145,654	15.2	4,029,908	53.2
Women	2,985,182	21.2	6,892,918	43.3
Pregnant women	1,452,144	10.3	2,953,892	49.2
Postpartum women	1,533,038	10.9	3,939,025	38.9
Breastfeeding women	1,028,863	7.3	2,338,744	44.0
Non-breastfeeding women	504,175	3.6	1,600,281	31.5
Total	**14,072,148**	**100.0**	**26,986,104**	**52.1**

Notes
The total population consists of individuals in the 50 States, the District of Columbia, and Puerto Rico and the other U.S. territories served by WIC in each participant category.
The eligibility rate is the ratio of the total number of individuals eligible for WIC to the total population in each participant category.
Sources: IPUMS-USA,[5] n.d.; NBER,[6] n.d.b; U.S. Census Bureau, n.d.c

Figure ES.1. WIC Eligibility Rate by Participant Category: CY 2017



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

2. Coverage Rates

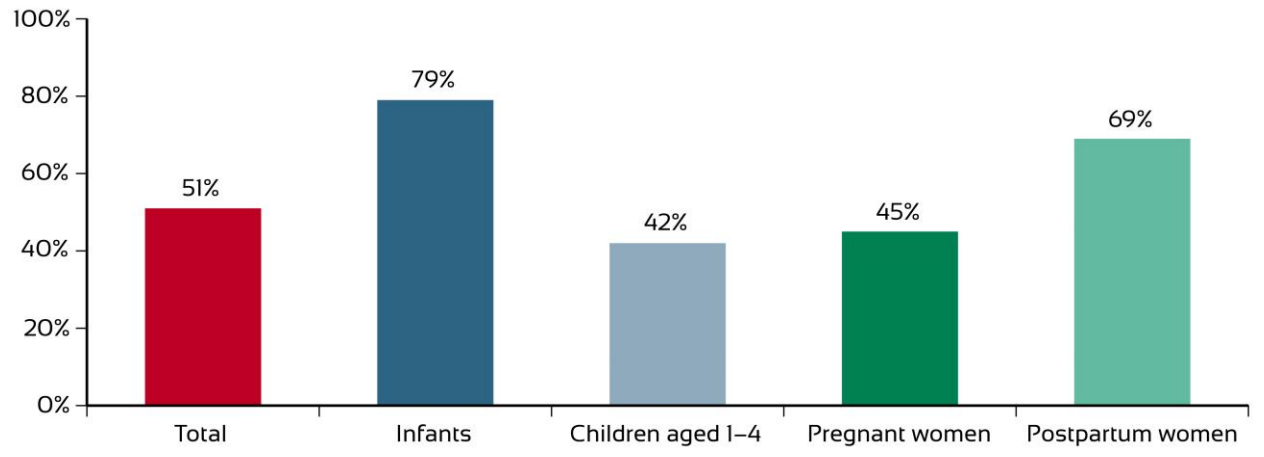
The coverage rates are the percentages of women, infants, and children eligible for WIC who receive WIC benefits. Coverage rates are useful measures for understanding how well WIC reaches those who may benefit from the program.

[5] Integrated Public Use Microdata Series-USA
[6] National Bureau of Economic Research

a. How did WIC coverage rates vary by participant category?

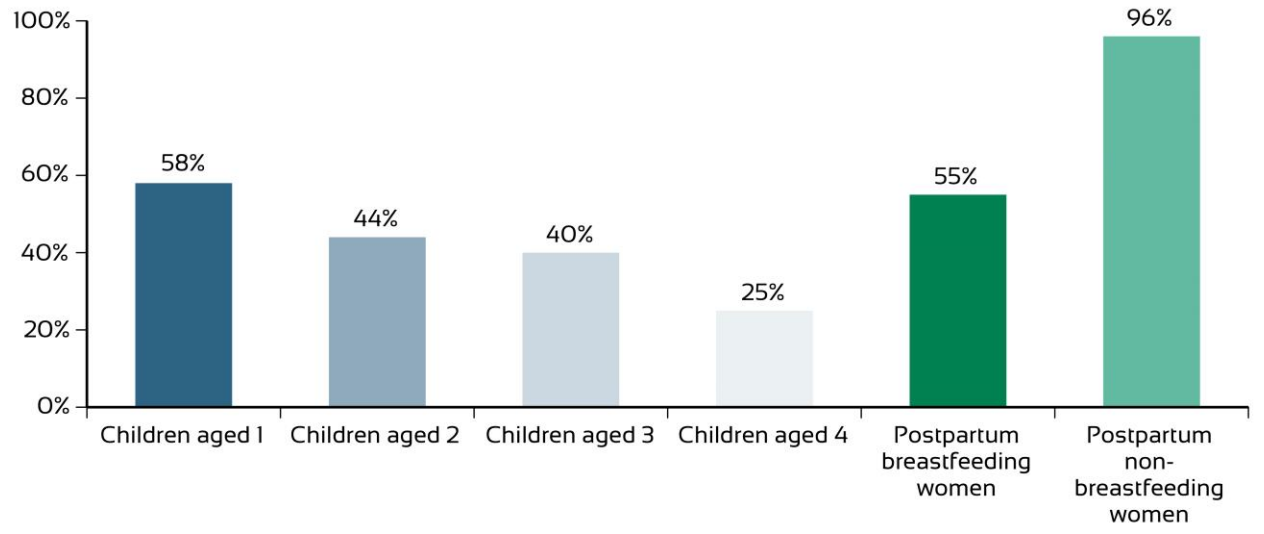
Of the 14.1 million women, infants, and children eligible for WIC in an average month in CY 2017, slightly more than half (7.2 million) received benefits, resulting in a national coverage rate of 51 percent. Across all participant categories, coverage rates were highest for infants (79 percent) and lowest for children aged 1 to 4 (42 percent; see figure ES.2). Moreover, coverage rates for children decreased with age, from a high of 58 percent for 1-year-olds to a low of 25 percent for 4-year-olds. The coverage rate for postpartum non-breastfeeding women was 96 percent compared with a coverage rate of 55 percent for postpartum breastfeeding women (see figure ES.3).

Figure ES.2. WIC Coverage Rate by Participant Category: CY 2017



Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

Figure ES.3. WIC Coverage Rates for Children by Year of Age and Postpartum Women by Breastfeeding Status: CY 2017



Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

b. How did WIC coverage rates vary by race and ethnicity?

The overall coverage rate was highest for Hispanics (60 percent) compared with other race and ethnicity groups. Coverage rates were 41 percent for White-Only Non-Hispanics and 59 percent for Black-Only Non-Hispanics (see table ES.2). Although coverage rates across all participant categories were highest for Hispanics, this was largely because of the high rate of participation among children. Coverage rates were highest for Hispanic children (54 percent) and lowest for White-Only, Non-Hispanic children (32 percent). For infants, pregnant women, and postpartum women, rates were highest for Black-Only Non-Hispanics. Within all race and ethnicity groups, coverage rates were highest for infants.

Table ES.2. WIC Coverage Rate by Race and Ethnicity: CY 2017

Participant Category	White-Only Non-Hispanic	Black-Only Non-Hispanic	Other Non-Hispanic	Hispanic	Total
Infants	63.9	100.0	71.9	84.1	79.4
Children aged 1–4	31.6	42.4	37.4	53.8	41.8
Pregnant women	41.3	57.6	32.1	48.0	45.3
Postpartum women	59.1	96.5	50.6	73.0	68.9
Total	**40.9**	**58.7**	**43.7**	**60.4**	**51.0**

Note
The estimated coverage rate exceeded 100 percent for Black-Only Non-Hispanic infants. This is likely a result of sampling variability in the Current Population Survey Annual Social and Economic Supplement survey data used to estimate the number of infants eligible for WIC (denominator of the rate). The lower-bound range of the 95-percent confidence intervals surrounding the rate is below 100 percent. See chapter 6 in volume I for more information on measures of statistical uncertainty for the eligibility estimates.
Sources: IPUMS-USDA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

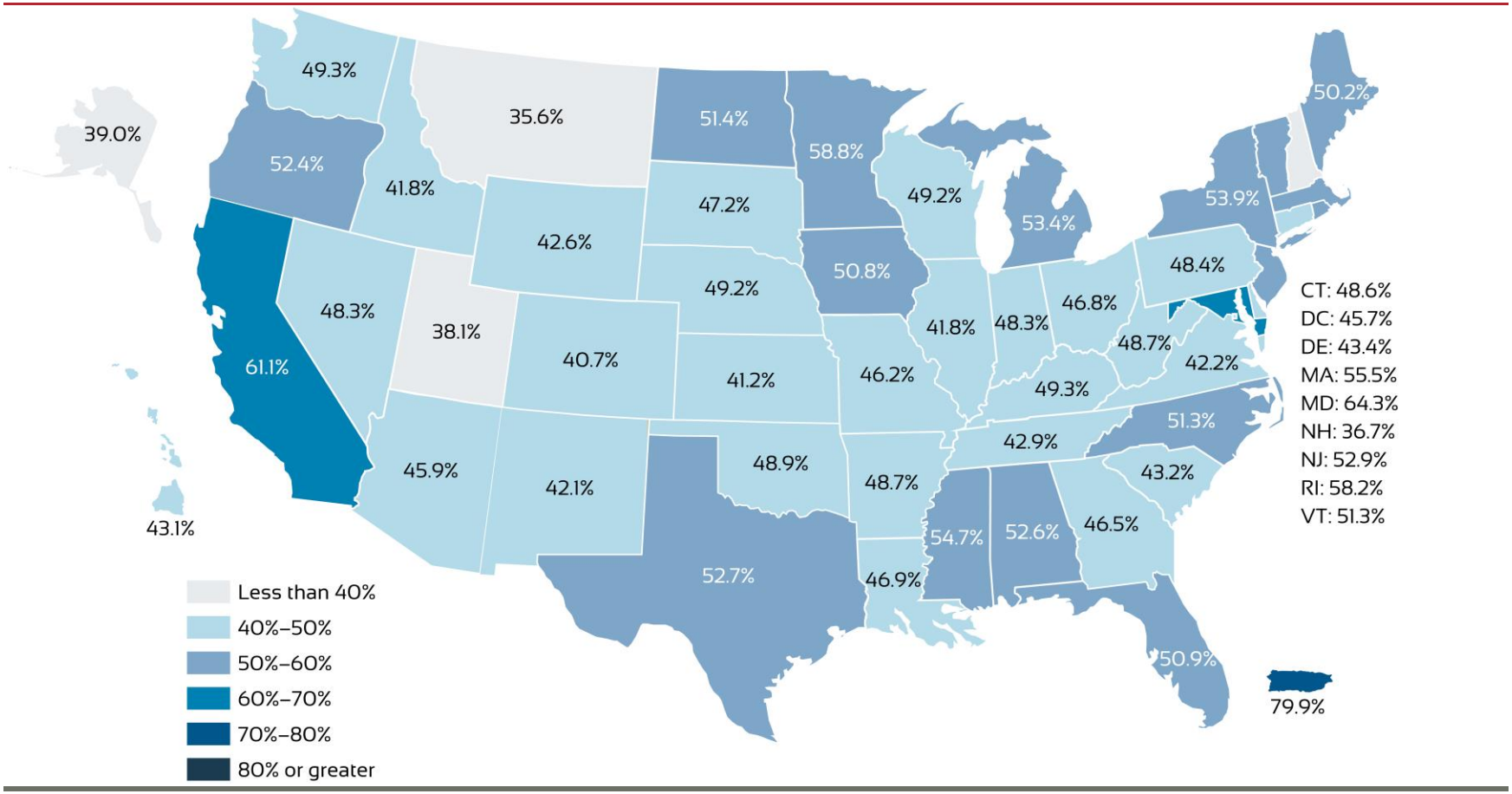
c. How did WIC coverage rates vary by State?

WIC coverage rates varied substantially by State, ranging from 36 percent to 64 percent, compared with the national average coverage rate of 51 percent. Puerto Rico had a higher coverage rate (80 percent) than any State. See tables 4.5 and 4.6 in chapter 4 for more detail on State coverage rates.

State coverage rates by race and ethnicity were generally consistent with States' overall coverage rates. For example, State-level coverage rates were higher for Hispanics than any other race and ethnicity in 36 States (see table 4.7 in chapter 4).

Figure ES.4 provides a national map that illustrates the variations in coverage rates. States with the darkest shading had the highest rates of coverage in 2017, whereas States with the lightest shading had the lowest rates.

Figure ES.4. WIC Coverage Rate for Total Eligible Individuals by State: CY 2017
National Coverage Rate: 51.1 Percent

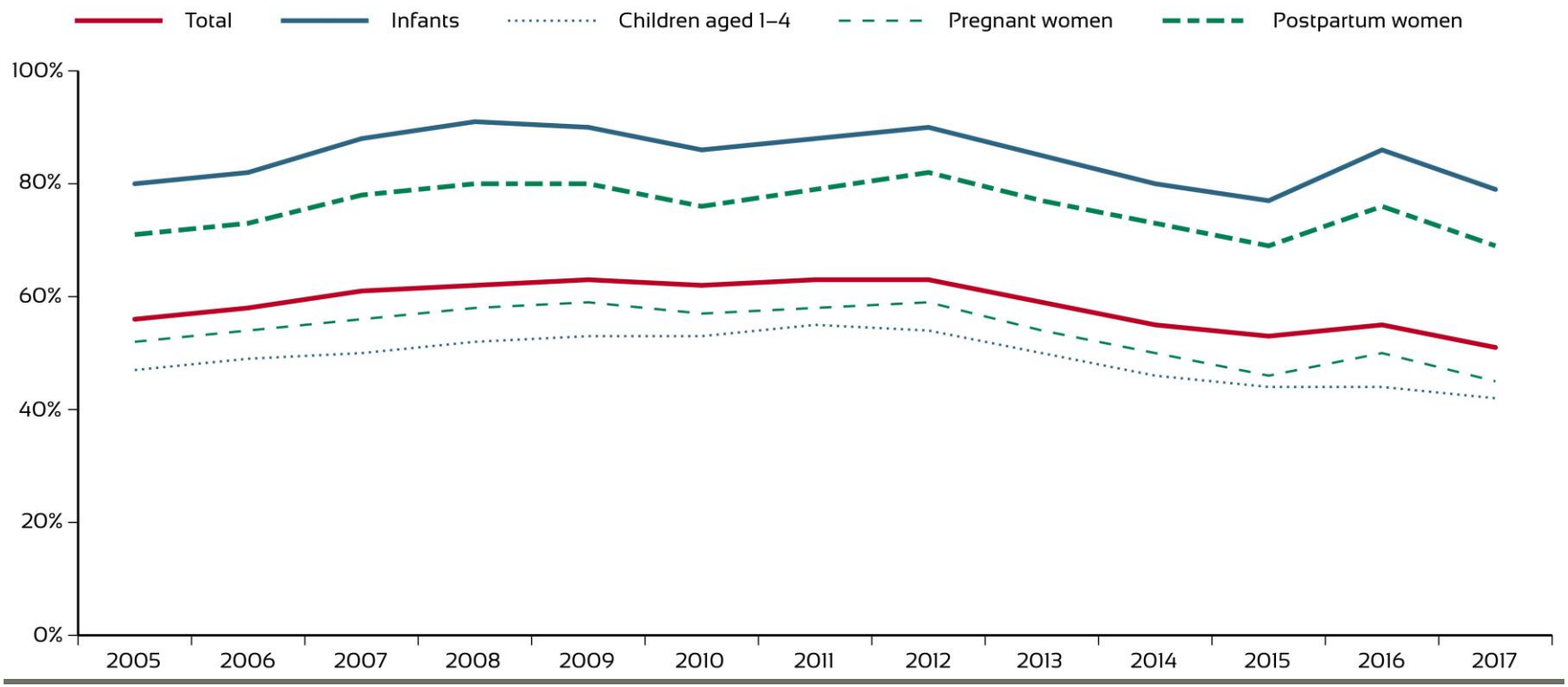


Sources: IPUMS-USA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

d. How have WIC coverage rates varied over time?

WIC coverage rates increased from 56 percent in CY 2005 to a high of 63 percent in CY 2011. The coverage rate declined steadily between CY 2011 and CY 2017.[7] The coverage rate (51 percent) in CY 2017 was the lowest across the 12-year period. Coverage rates by participant category stayed relatively consistent in relation to one another from CY 2005 to CY 2017. During this 12-year period, coverage rates were consistently highest for infants, followed by postpartum women, pregnant women, and children (see figure ES.5).

Figure ES.5. Trends in WIC Coverage Rates by Participant Category: CY 2005–CY 2017



Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

[7] The increase in the CY 2016 estimates was likely the result of a single-year anomaly that resulted from the small sample sizes in the data. See chapter 3 for more information.

B. Methodology

The 2017 national estimates presented in this report are based on a methodology developed in 2003 by the Committee on National Statistics of the National Research Council.[8] The primary data source used to develop the national estimates of the eligible populations are based on the 2018 Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) (National Bureau of Economic Research, n.d.b). The numbers of income-eligible and adjunctively income-eligible infants and children were first estimated using the CPS-ASEC data and then adjusted to account for differences between annual and monthly income and for nutritional risk. The number of infants eligible for WIC was then used as the starting point to estimate the numbers of pregnant and postpartum women eligible for WIC because the CPS-ASEC data did not identify pregnancy or breastfeeding status.

The State-level estimates are based on a methodology that apportions the national figures using data from the American Community Survey (ACS), the Puerto Rico Community Survey, and the U.S. Census Bureau's International Data Base. The 2017 State-level estimates are based on the 2017 ACS data (Integrated Public Use Microdata Series-USA, n.d.).

[8] The 2005 through 2017 estimates present a consistent methodology for calculating coverage rates. Beginning with the 2014 estimates, all prior estimates going back to 2005 were updated to reflect a consistent methodology.

Chapter 1. Introduction

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides nutritious supplemental foods, nutrition education that includes breastfeeding promotion and support, and referrals to health and social services. WIC serves low-income and nutritionally at-risk pregnant and postpartum 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;[9] Puerto Rico and four additional U.S. territories (American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands); and 34 Indian Tribal Organizations (ITOs). Eligible participants receive vouchers, checks, or electronic benefit transfer cards for prescribed foods and redeem them at authorized retail vendors at no charge.

Part of the Nation's nutrition safety net for more than 40 years, WIC served more than 7 million women, infants, and children per month in calendar year (CY) 2017. To be eligible for WIC, an applicant must be categorically eligible as a pregnant, postpartum breastfeeding,[10] or postpartum non-breastfeeding[11] woman; an infant up to age 1;[12] or a child up to age 5. Each applicant must also be income-eligible and at nutritional risk and live in the State where the application is submitted.

WIC is a federally funded program, but the funding is discretionary. 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 1997, 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 based on a formula that takes into account both the previous year's funding and the estimated eligible population in each State and U.S. territory. Accurately estimating the number of individuals eligible for WIC and the number likely to participate enables FNS to better predict future funding needs, measure WIC 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 CY 2017. It also provides the percentages of eligible individuals who participated in WIC overall and by participant category (i.e., "coverage rates") and the percentages of the total population of individuals who participated in WIC overall and by participant category (i.e., "participation rates"). For the purposes of this report, WIC participants are defined as those individuals who were enrolled in WIC and claimed their benefits in an average month of CY 2017. Estimates are provided at the national, regional, and State levels. Estimates are also provided by participant category—i.e., infants, children, pregnant women, and postpartum women—and by race and ethnicity.

Chapter 2 describes the data and methodology used to develop the 2017 WIC estimates. Chapter 3 presents the estimates of individuals eligible for WIC; chapter 4 provides the coverage rates; and chapter 5 presents the participation rates. Chapter 6 describes the measures of precision for the estimates. Additional detail and tables are provided in volume II of this report.

[9] Hereafter, this report includes the District of Columbia in references to States.
[10] Breastfeeding women are categorically eligible up to 1 year postpartum.
[11] Non-breastfeeding women are categorically eligible up to 6 months postpartum.
[12] An infant must be recertified as a child after the infant's first birthday.

Chapter 2. Methodology

This chapter describes the methodology used to produce the estimates of individuals eligible for WIC, coverage rates, and participation rates for 2017.[13] 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 Eligibility Criteria.** A participant must be a pregnant, postpartum breastfeeding, or postpartum non-breastfeeding woman; an infant up to age 1 (the first birthday); or a child up to age 5 (the fifth birthday).
- **Income Eligibility Criteria.** A participant's income may not exceed 185 percent of the Federal Poverty Guidelines issued annually by the U.S. Department of Health and Human Services (HHS); these income guidelines are based on household size.[14] 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 for Needy Families (TANF).[15]
- **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, an inadequate diet, or being underweight) 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.[16]

A. Overview of Methods

The estimation procedures used to develop the estimates for WIC eligibility presented in this report are based primarily on the methodology recommended by the Committee on National Statistics (CNSTAT) panel members. In a report issued in 2003, the panel recommended using Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) data for the initial counts of eligible infants and children in all States (Ver Ploeg & Betson, 2003). The counts are refined through a series of adjustment factors designed to more closely reflect WIC eligibility requirements. 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 infants eligible for WIC is then used as the starting point to estimate pregnant and postpartum women eligible for WIC. Because CPS-ASEC data do not include information on pregnancy or breastfeeding status, estimates of women eligible for WIC are based on adjusted counts of infants eligible for WIC rather than separate counts of CPS-ASEC data. For postpartum women, separate estimates are

[13] The eligibility estimates are intended to represent average monthly figures—the numbers of women, infants, and children eligible for WIC in an average month of a calendar year—to be consistent with average monthly data on program participation.
[14] See HHS (2016, 2017) for the Federal Poverty Guidelines used to calculate the WIC eligibility estimates presented in this report. These guidelines are based on household size. The 48 contiguous States, the District of Columbia, and the U.S. territories served by WIC have the same guidelines; Alaska and Hawaii have different guidelines.
[15] 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 below those for WIC (see Special Supplemental Nutrition Program for Women, Infants and Children, 2014).
[16] Applicants applying for benefits through an ITO must meet the residency requirements established by that ITO.

produced for breastfeeding and non-breastfeeding mothers because certification periods and benefits vary for these two groups.

State-level estimates of individuals eligible for WIC are prepared using the same general procedures used to develop the national-level estimates, but they are based on American Community Survey (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 2017 estimates: (1) 2018 CPS-ASEC data (National Bureau of Economic Research [NBER], n.d.b); (2) 2017 ACS and PRCS data (Integrated Public Use Microdata Series-USA [IPUMS-USA], n.d.); and (3) 2017 IDB data (U.S. Census Bureau, n.d.c).

The step-by-step process for producing the 2017 national, State, and U.S. territory estimates of individuals eligible for WIC is explained in section B (for infants and children), section C (for pregnant women), and section D (for postpartum women). Section E describes the method used to calculate WIC coverage rates, and section F explains the method used to calculate participation rates. Section G highlights changes from the 2016 report.

Table 2.1 summarizes the steps, data sources, and adjustment factors used to estimate eligibility for WIC in 2017. Table 2.2 shows the derivation of the number of individuals eligible for WIC 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 Infants and Children Eligible for WIC

The first step in estimating the number of individuals eligible for WIC was to determine the number of infants and children eligible for WIC nationally, in each State, and in the U.S. territories WIC serves.[17] 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 the national estimates of infants and children eligible for WIC was to use 2018 CPS-ASEC data to produce preliminary demographic counts of the numbers of infants and children potentially served by WIC in 2017. These data were collected in spring 2018, and each household was asked to report income and program participation for the prior year (2017).

[17] 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 the 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 for the CPS-ASEC data 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.[18] 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 the direction of the difference between the March 2018 Census Bureau population estimate and the CPS weighted count was the same as for the 4-year accumulations (i.e., if the Census Bureau figure was either greater or smaller in both cases). If the direction of the difference was not the same for a particular group, no adjustment was performed (i.e., the weight adjustment factor was 1.0).

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.[19,20] WIC regulations[21] specify that all individuals living as one economic unit (that is, related or unrelated individuals 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 eligibility for WIC, the economic unit was defined as all individuals 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.[22]

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

[18] 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 were used to minimize large year-to-year swings in the factors.

[19] See Special Supplemental Nutrition Program for Women, Infants and Children (WIC): Income Eligibility Guidelines (2016, 2017)

[20] 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 for 2 consecutive years were averaged to estimate income eligibility for WIC. For the 2017 estimates, the guidelines used to estimate WIC eligibility from July 2016 through June 2017 were averaged with the guidelines for July 2017 through June 2018.

[21] For all references to WIC regulations in this report, see Special Supplemental Nutrition Program for Women, Infants and Children, 7 C.F.R. § 246 (2014).

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

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.

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.[23] The annual-to-monthly income adjustment accounted for how annual income data and program participation data could incorrectly estimate monthly eligibility.[24] 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.[25] 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.e).[26] 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 children eligible for WIC.

f. Adjust for nutritional risk

The final step in producing national estimates of infants and children eligible for WIC was to adjust for nutritional risk. Individuals eligible for WIC 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 infants and children eligible for WIC were calculated using the same methods used to generate the national-level estimates but with 2017 ACS data instead of 2018 CPS-ASEC data.[27] 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).[28] The number of infants and children in WIC units with annual income less than or equal to 185 percent of the

[23] The Healthy, Hunger-Free Kids Act of 2010 (Pub. L. 111–296) gave States the option of certifying children eligible for WIC every 12 months instead of every 6 months. Whether and when a State has adopted this option affects WIC eligibility for children.
[24] For example, family income 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.
[25] 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.
[26] The SIPP data needed to update the annual-to-monthly adjustments were not available in time to be used for the 2017 estimates. Therefore, the 2017 estimates were calculated using the same annual-to-monthly adjustments used for the 2016 estimates. The annual-to-monthly adjustments will be updated for the 2018 estimates.
[27] 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 Minnesota Population Center's IPUMS data was used. IPUMS data provides users with educated conjectures about the relationships between household members not related to the reference person.
[28] For State estimates, the weight adjustments were calculated by year of age (within each State), not by gender or race and ethnicity.

Federal Poverty Guidelines was determined, and the number of adjunctively income-eligible infants and children were added to the count. The annual-to-monthly factors and the nutritional risk factors were then applied.[29] The ACS-based counts of infants and children eligible for WIC 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[30] of participant) and then applied to the CPS-based estimate.

3. Territory Estimates

Estimates of infants and children eligible for WIC in Puerto Rico are based on the 2017 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 2017 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 States and Puerto Rico in 2017 was used to estimate the additional number of infants and children eligible through adjunctive eligibility.

C. Determining the Number of Pregnant Women Eligible for WIC

The next step in estimating eligibility for WIC in 2017 was to determine the number of pregnant women eligible for WIC in the States and U.S. territories served by WIC. Because the CPS-ASEC and ACS data do not include information about pregnancy, the final average monthly estimate of infants eligible for WIC was used as the starting point to estimate the number of pregnant women eligible for WIC. 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 reduce the number of pregnant women compared with that of infants) and (2) fetal and infant deaths (which increase the number of pregnant women compared with that of infants). The adjustment factor is calculated using National Vital Statistics data on births, infant deaths, and fetal deaths for four race and ethnicity groups: White-Only Non-Hispanic, Black-Only Non-Hispanic, Other Non-Hispanic, and Hispanic (see table 2.1).

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

The 2017 estimates were also adjusted to reflect that the length of a typical pregnancy is 9 months[31] and that some mothers of eligible infants were not eligible during pregnancy (see table 2.1).[32]

[29] When the annual-to-monthly factors were applied at the State level, two race and ethnicity factors were applied in each State: one for White-Only Non-Hispanic children and one for children who were either non-White or Hispanic. The factors for children varied by each State's implementation of 12-month certification.
[30] Age 0, 1, 2, 3, or 4
[31] The estimates calculate pregnant women as eligible from conception, which is consistent with Federal WIC eligibility guidelines.
[32] 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 pregnant women eligible for WIC were derived, the State-level estimates were calculated by using the estimates of infants eligible for WIC 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 pregnant women eligible for WIC. Those shares were then applied to the national-level estimate of pregnant women eligible for WIC based on the CPS-ASEC data.

3. Territory Estimates

Estimates of pregnant women eligible for WIC in Puerto Rico and the other four U.S. territories were calculated with a method parallel to that used to estimate the number of women eligible for WIC in the States. 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 pregnant women eligible for WIC.

D. Determining the Number of Postpartum Women Eligible for WIC

The final step in estimating the number of individuals eligible for WIC in 2017 was to calculate the number of postpartum breastfeeding and non-breastfeeding women eligible for WIC in the Nation, States, and U.S. territories. Similar to how the estimates of pregnant women eligible for WIC were derived, the estimates of postpartum women eligible for WIC were calculated using adjusted counts of infants eligible for WIC 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 mothers eligible for WIC 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 non-breastfeeding women for 2017.

1. National Estimates

The national estimates of postpartum women were calculated similarly to the estimates of pregnant women. A series of adjustments were made to the final average monthly estimate of infants eligible for WIC to create the national-level estimate of postpartum women eligible for WIC. Descriptions of these adjustments follow.

a. Adjust estimates for multiple births and infant deaths

Adjustments similar to those made to estimate pregnant women eligible for WIC were made to estimate postpartum women eligible for WIC. To account for the combined effect of multiple births and fetal and infant deaths, the adjustment was applied to the count of infants eligible for WIC (see table 2.1).

b. Adjust estimates for breastfeeding status

National breastfeeding rates were used to adjust for breastfeeding status by race and ethnicity for the 2017 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 2016 and 2017 surveys for the 2015 birth cohort.[33] CDC conducted special tabulations of the NIS data to provide breastfeeding rates for all mothers, WIC-participating mothers, and nonparticipating mothers eligible for WIC who gave birth in 2015. 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 and ethnic categories: White-Only Non-Hispanic, Black-Only Non-Hispanic, Other Non-Hispanic, and Hispanic. This information was used to calculate adjustments to derive postpartum women eligible for WIC 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

Adjustments similar to those applied to the CPS-ASEC data were applied to the ACS-based infant eligibility estimates to derive State-level estimates of postpartum breastfeeding and non-breastfeeding women eligible for WIC. State-level NIS data on breastfeeding rates was provided by CDC to produce the 2017 estimates. The ACS-based estimates were then used to generate each State's share of total postpartum women eligible for WIC, and those shares were applied to the national-level estimate of postpartum women eligible for WIC based on the CPS-ASEC data.

3. Territory Estimates

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

[33] Unpublished internal CDC data

E. Computing Coverage Rates

This report defines the WIC coverage rate as the ratio of the number of WIC participants to individuals eligible for WIC. The source for the number of participants was WIC administrative data from FNS[34] on the number of individuals who were enrolled in WIC *and* claimed their benefits in an average month of 2017.[35] FNS provides these administrative counts of WIC program participants for each of the five WIC participant categories: infants, children aged 1–4, pregnant women, postpartum breastfeeding women, and postpartum non-breastfeeding women.[36] The coverage rates were calculated based on the ratio of WIC participants (numerator) in 2017 to the estimates of individuals eligible for WIC (denominator) in 2017.

The administrative data on WIC participant counts used for this study did not provide the number of participating children by year of age (age 1, 2, 3, or 4) and did not count participants by race and ethnicity. However, these data were available in the 2016 report on WIC participant and program characteristics (WIC PC2016 report; Thorn et al., 2018). Therefore, the distribution of WIC-enrolled individuals across these participant categories was applied to the total number of WIC participants to estimate coverage rates by year of age for children and by race and ethnicity.[37]

National coverage rate estimates for 2017 were derived for infants, children by year of age, and pregnant and postpartum breastfeeding and non-breastfeeding women, as well as by race and ethnicity (see chapter 3). State coverage rates were also derived for infants, children by year of age, and pregnant and postpartum women, as well as by race and ethnicity. State coverage rates for postpartum women were not broken out by breastfeeding and non-breastfeeding women because of sample size restrictions (see chapter 6 for measures of precision).

F. Computing Participation Rates

This report defines the WIC participation rate 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 percentage of all infants, children, pregnant women, and postpartum women who received WIC benefits in 2017.

National participation rate estimates for 2017 were derived for infants, children by year of age, pregnant women, and postpartum breastfeeding and non-breastfeeding women (see chapter 5).

[34] All WIC administrative data referenced in this report is unpublished internal FNS data.
[35] 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).
[36] Unpublished special tabulations of calendar year WIC administrative data
[37] For example, to estimate the number of WIC participants who were 2 years old, WIC PC2016 data were used to estimate the percentage of WIC-enrolled children with those characteristics; that proportion was then applied to the number of WIC-participating children according to 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 individuals eligible for WIC (Trippe et al., 2019) and additional analyses conducted for this report.

Updated and expanded adjustment factors for multiple births and infant deaths. The number of pregnant and postpartum women eligible for WIC is estimated by applying an adjustment factor to the number of infants eligible for WIC in the CPS-ASEC data. The adjustment factor is important because the number of pregnant and postpartum women can differ from the number of infants. There are two reasons for this discrepancy: (1) the number of pregnant or postpartum women can be smaller than the number of infants as a result of multiple births, and (2) the number of pregnant or postpartum women can be greater than the number of infants as a result of fetal and infant deaths. To account for the combined effect of these two differences, a single factor was applied to the 2004–2016 estimates used to produce the number of pregnant and postpartum women eligible for WIC. The impact of updating the factor and expanding the factor by race and ethnicity categories was assessed. The results indicated that the estimated adjustment factors changed very little over time but showed a consistent pattern of differences by race and ethnicity. Based on these findings, the 2017 estimates used updated and expanded factors to incorporate differences in the number of multiple births and infant deaths by race and ethnicity to improve the estimates of the number of women eligible for WIC.

For the 2017 estimates, the factor was recalculated using updated data and expanded to apply to the following four race and ethnicity categories: White-Only Non-Hispanic, Black-Only Non-Hispanic, Other Non-Hispanic, and Hispanic. See appendix E of volume II for more details on the methodology used for updating and expanding the adjustment factor.

Added indicators of statistical significance to tables that compare current- and previous-year estimates and State-level estimates to national-level estimates. In the 2016 estimates report, indicators of statistical significance were added to tables that compared results for current- and previous-year estimates (see tables 3.6 and 4.8 in Trippe et al., 2019). For the 2017 report, indicators of statistical significance were added to table 4.9, which compares results for current- and previous-year estimates. Indicators were also added to tables with State coverage or participation rates to indicate whether a State's rate was statistically different from the overall national rate (see tables 4.5 and 5.2, respectively). Asterisks are used to indicate when estimates are statistically significant at the 95-percent confidence level.

Table 2.1. Steps, Data Sources, Methods, and Adjustment Factors Used for 2017 Estimates of WIC Eligibility

<table>
<tr><th>Step</th><th>Data Source(s)</th><th colspan="2">Methods and Adjustment Factors</th></tr>
<tr><td colspan="4">Infants and Children</td></tr>
<tr><td>Demographic eligibility</td><td>• 2018 CPS-ASEC, National estimates
• 2017 ACS, State estimates
• 2017 PRCS, Puerto Rico estimates
• 2017 IDB, Other island territories estimates</td><td colspan="2">Identify individuals aged 0, 1, 2, 3, and 4 in each survey.</td></tr>
<tr><td>Weight adjustment</td><td>• National estimates
– Postcensal population estimates from Census Bureau and March CPS-ASEC for 2015, 2016, 2017, and 2018
• State and Puerto Rico estimates
– Postcensal population estimates from U.S. Census Bureau for July 2017</td><td colspan="2">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).</td></tr>
<tr><td></td><td></td><td>Adjustment Factors for Females</td><td>Adjustment Factors for Males</td></tr>
<tr><td></td><td></td><td>• Infants
– White-Only Non-Hispanic: 1.005
– Black-Only Non-Hispanic: 1.103
– Other Non-Hispanic: 1.125
– Hispanic: 1.018
• Children aged 1
– White-Only Non-Hispanic: 1.008
– Black-Only Non-Hispanic: 0.879
– Other Non-Hispanic: 0.890
– Hispanic: 0.975
• Children aged 2
– White-Only Non-Hispanic: 1.012
– Black-Only Non-Hispanic: 1.000
– Other Non-Hispanic: 1.000
– Hispanic: 1.000
• Children aged 3
– White-Only Non-Hispanic: 1.016
– Black-Only Non-Hispanic: 0.932
– Other Non-Hispanic: 0.919
– Hispanic: 1.000
• Children aged 4
– White-Only Non-Hispanic: 1.012
– Black-Only Non-Hispanic: 1.031
– Other Non-Hispanic: 0.990
– Hispanic: 1.013</td><td>• Infants
– White-Only Non-Hispanic: 1.007
– Black-Only Non-Hispanic: 1.118
– Other Non-Hispanic: 0.979
– Hispanic: 1.000
• Children aged 1
– White-Only Non-Hispanic: 1.002
– Black-Only Non-Hispanic: 0.876
– Other Non-Hispanic: 0.985
– Hispanic: 1.007
• Children aged 2
– White-Only Non-Hispanic: 1.000
– Black-Only Non-Hispanic: 1.000
– Other Non-Hispanic: 0.992
– Hispanic: 0.984
• Children aged 3
– White-Only Non-Hispanic: 1.004
– Black-Only Non-Hispanic: 1.004
– Other Non-Hispanic: 1.000
– Hispanic: 1.000
• Children aged 4
– White-Only Non-Hispanic: 1.000
– Black-Only Non-Hispanic: 1.000
– Other Non-Hispanic: 1.000
– Hispanic: 1.000</td></tr>
</table>

Step	Data Source(s)	Methods and Adjustment Factors
Income eligibility	• 2018 CPS-ASEC, National estimates • 2017 ACS, State estimates • 2017 PRCS, Puerto Rico estimates • 2017 IDB, Other island territories estimates • Blended 2016 and 2017 FPGs	Count as eligible if prior year's annual income was ≤ 185 percent of the Federal Poverty Guidelines.
Adjunctive eligibility	• 2018 CPS-ASEC • 2017 ACS • 2017 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.[a] • Infants adjustment factor (used for estimates from PRCS and IDB data): 1.14 • Infants adjustment factors by race and ethnicity (used for estimates from CPS-ASEC and ACS data) – White-Only Non-Hispanic: 1.20 – All others: 1.07 • Children adjustment factor assuming 12-month certification periods (used for estimates from PRCS and IDB data): 1.05 • Children adjustment factors by race and ethnicity (used for estimates from CPS-ASEC data) – White-Only Non-Hispanic: 1.09 – 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	Average 3 years of most recent CDC national vital statistics data (i.e., 2015-2017 Births: Final Data, 2014-2016 Period Linked Birth – Infant Death Data Files, and 2014 – 2016 Fetal Death Data Files)	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 factors – White-Only Non-Hispanic: 0.9911 – Black-Only Non-Hispanic: 1.0019 – Other Non-Hispanic: 0.9944 – Hispanic: 0.9977

Step	Data Source(s)	Methods and Adjustment Factors
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). Combined adjustment factor: 0.675
For postpartum women: Adjust for breastfeeding status	CDC NIS breastfeeding rates computed for 2015 birth cohort (NIS survey years 2016 and 2017)	Multiply by factors to estimate average monthly women eligible for WIC as breastfeeding women (0 < 12 months postpartum) or non-breastfeeding women (< 6 months postpartum). Separate State-level breastfeeding adjustments are used for the ACS data. • Breastfeeding (used for estimates from PRCS and IDB data): 0.462 • Breastfeeding by race and ethnicity (used for estimates from CPS-ASEC) – White-Only Non-Hispanic: 0.457 – Black-Only Non-Hispanic: 0.389 – Other Non-Hispanic: 0.466 – Hispanic: 0.504 • Non-breastfeeding (used for estimates from PRCS and IDB data): 0.228 • Non-breastfeeding by race and ethnicity (used for estimates from CPS-ASEC) – White-Only Non-Hispanic: 0.231 – Black-Only Non-Hispanic: 0.268 – Other Non-Hispanic: 0.228 – Hispanic: 0.205
Adjust for nutritional risk	CNSTAT panel	Multiply estimates for pregnant and postpartum women 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 factors:*** Pregnant women: 0.97; Postpartum women: 1.0

Notes

[a] An adjustment factor for the total number of children (1.04) was also calculated but not used for any adjustment. The separate adjustment factors by race and ethnicity were used for the estimates.

The data sources listed in this table are as follows, in order of mention: for 2018 CPS-ASEC data, see NBER, n.d.b; for 2017 ACS and PRCS data, see IPUMS-USA, n.d.; for 2017 IDB data, see U.S. Census Bureau, n.d.c; for March 2015, 2016, 2017, 2018 CPS-ASEC data, see NBER, n.d.b; for July 2017 postcensal population estimate data, see U.S. Census Bureau, n.d.b, n.d.e; for 2016/2017 and 2017/2018 Federal Poverty Guidelines data, see Special Supplemental Nutrition Program for Women, Infants and Children (WIC): Income Eligibility Guidelines, 2016, 2017; for 2014–2017 National Vital Statistics data, see National Center for Health Statistics, n.d.; for 2001, 2004, 2008 SIPP panel data, see U.S. Census Bureau, n.d.e; for the Committee on National Statistics panel data, see Ver Ploeg & Betson, 2003. CDC NIS breastfeeding rates are based on unpublished internal CDC data.

Adjustment factors shown in this table were used to produce estimates of eligible individuals. When applicable, the same adjustment factors were used to produce estimates of the total population; as a result of differences in breastfeeding rates, adjustment factors differed for mothers eligible for WIC and the total population of mothers.

FPG = Federal Poverty Guidelines

Table 2.2. Step-by-Step Adjustments Applied to CPS-ASEC Data to Derive the Average Monthly Number of Individuals Eligible for WIC by Participant Category: CY 2017

Step	Infants	All Children Aged 1-4	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	Pregnant Women	Breastfeeding Women	Non-Breastfeeding Women	Total
Total number of infants/ children in CPS-ASEC data	**3,836,768**	**16,092,459**	**4,058,788**	**4,009,318**	**4,056,610**	**3,967,744**	_	_	_	**19,929,227**
Number after adjustment for CPS undercount/ overcount	3,925,839	15,987,345	3,949,172	4,010,180	4,036,674	3,991,319	_	_	_	19,913,184
Number with annual income <= 185 percent of the Federal Poverty Guidelines	1,418,737	5,835,505	1,456,187	1,523,015	1,480,131	1,376,172	_	_	_	7,254,242
Number adjunctively eligible and with annual income > 185 percent of the Federal Poverty Guidelines[a]	606,715	2,551,502	673,120	629,161	596,036	653,185	_	_	_	3,158,216
Through SNAP	139,217	413,416	102,374	108,822	92,311	109,909	_	_	_	552,633
Through TANF	2,297	27,240	8,682	8,081	3,456	7,021	_	_	_	29,538
Through Medicaid	465,200	2,110,846	562,064	512,259	500,268	536,255	_	_	_	2,576,046
Total number income and adjunctively eligible	2,025,452	8,387,007	2,129,307	2,152,177	2,076,166	2,029,357	_	_	_	10,412,459
Number after adjustment for monthly income and certification periods	2,263,205	8,822,071	2,241,517	2,262,836	2,183,234	2,134,484	_	_	_	11,085,276
Total number eligible: Number after adjustment for nutritional risk (infants and children)	**2,195,309**	**8,733,851**	**2,219,101**	**2,240,208**	**2,161,402**	**2,113,139**	_	_	_	**10,929,159**
Starting point for estimates of women is number of eligible infants	_	_	_	_	_	_	2,195,309	2,195,309	2,195,309	6,585,926
Number after adjustment for length of pregnancy and income of woman during pregnancy	_	_	_	_	_	_	1,481,833	_	_	1,481,833

Step	Infants	All Children Aged 1-4	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	Pregnant Women	Breastfeeding Women	Non-Breastfeeding Women	Total
Number after adjustment for multiple births and infant deaths	–	–	–	–	–	–	1,475,076	2,185,298	2,185,298	5,845,673
Number after adjustment for breastfeeding	–	–	–	–	–	–	–	1,013,819	496,751	1,510,570
Total number eligible: Number after adjustment for nutritional risk (pregnant and postpartum women)	**–**	**–**	**–**	**–**	**–**	**–**	**1,430,824**	**1,013,819**	**496,751**	**2,941,394**
Total number eligible in the 50 States and the District of Columbia, excluding the U.S. territories served by WIC	2,195,309	8,733,851	2,219,101	2,240,208	2,161,402	2,113,139	1,430,824	1,013,819	496,751	13,870,554
Total number eligible in all U.S. territories served by WIC[b]	32,657	125,151	31,191	27,921	33,524	32,515	21,320	15,043	7,424	201,594
Total number eligible in the 50 States, the District of Columbia, and Puerto Rico and the other U.S. territories served by WIC	**2,227,965**	**8,859,001**	**2,250,293**	**2,268,129**	**2,194,926**	**2,145,654**	**1,452,144**	**1,028,863**	**504,175**	**14,072,148**

Notes

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

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

"–" denotes blank cells.

Sources: IPUMS-USA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c; Thorn et al., 2018

Chapter 3. Estimates of WIC Eligibility for CY 2017

This chapter presents estimates of WIC eligibility in 2017. Section A presents national-level estimates by participant category and describes the characteristics of infants and children eligible for WIC. Section B presents regional- and State-level estimates. Section C examines the changes in the numbers of individuals eligible for WIC overall and by participant category from 2015 to 2017. Section D describes trends in eligibility for WIC from 2005 to 2017.

A. National-Level Estimates of Individuals Eligible for WIC

In an average month in 2017, 14.1 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, almost two-thirds (63 percent) were children aged 1 to 4, 16 percent were infants, and 21 percent were women (see figure 3.1). Children eligible for WIC were evenly distributed by year of age; the distribution for each age ranged from 15 to 16 percent. Of individuals eligible for WIC, pregnant and postpartum women each represented 10 and 11 percent of the population, respectively. Postpartum breastfeeding women represented a larger proportion than postpartum non-breastfeeding women (7 versus 4 percent).

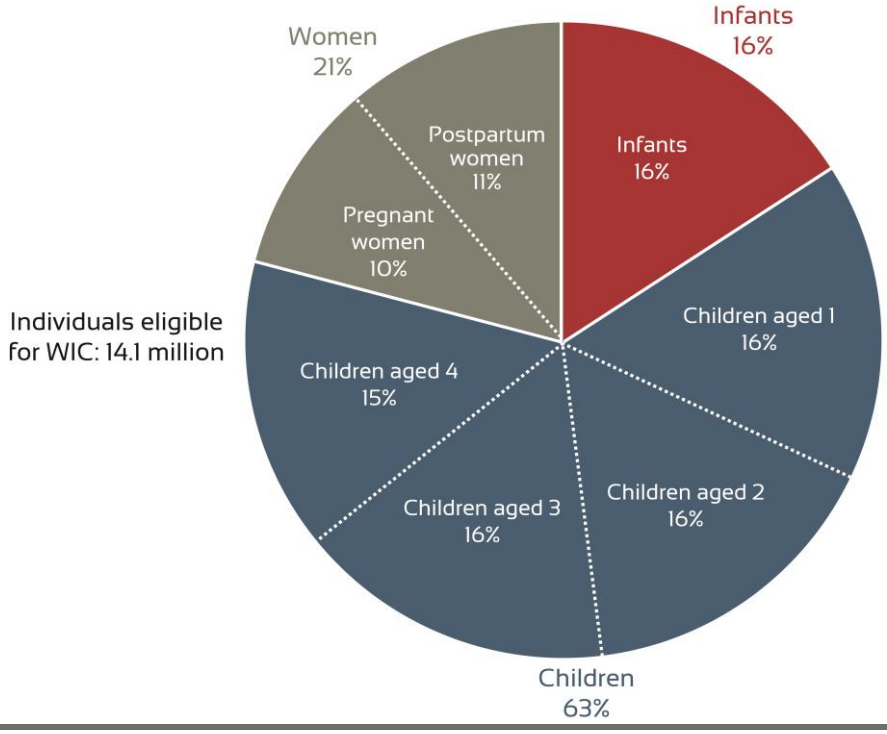
The eligibility rate is the percentage of the total population in each participant category who are estimated to be eligible for WIC. In an average month in 2017, more than half of all infants (56 percent) and children aged 1 to 4 (55 percent) were eligible for WIC (see figure 3.2 and table 3.1). Nearly half (49 percent) of all pregnant women and 39 percent of all postpartum women were eligible.

Table 3.1. Estimated Average Monthly Number of Individuals Eligible for WIC by Participant Category: CY 2017

Participant Category	Number Eligible	Percent of Total Eligible	Total Population	Eligibility Rate
Infants	2,227,965	15.8	3,959,629	56.3
Children aged 1–4	8,859,001	63.0	16,133,557	54.9
Children aged 1	2,250,293	16.0	3,983,480	56.5
Children aged 2	2,268,129	16.1	4,046,080	56.1
Children aged 3	2,194,926	15.6	4,074,089	53.9
Children aged 4	2,145,654	15.2	4,029,908	53.2
Women	2,985,182	21.2	6,892,918	43.3
Pregnant women	1,452,144	10.3	2,953,892	49.2
Postpartum women	1,533,038	10.9	3,939,025	38.9
Breastfeeding women	1,028,863	7.3	2,338,744	44.0
Non-breastfeeding women	504,175	3.6	1,600,281	31.5
Total	**14,072,148**	**100.0**	**26,986,104**	**52.1**

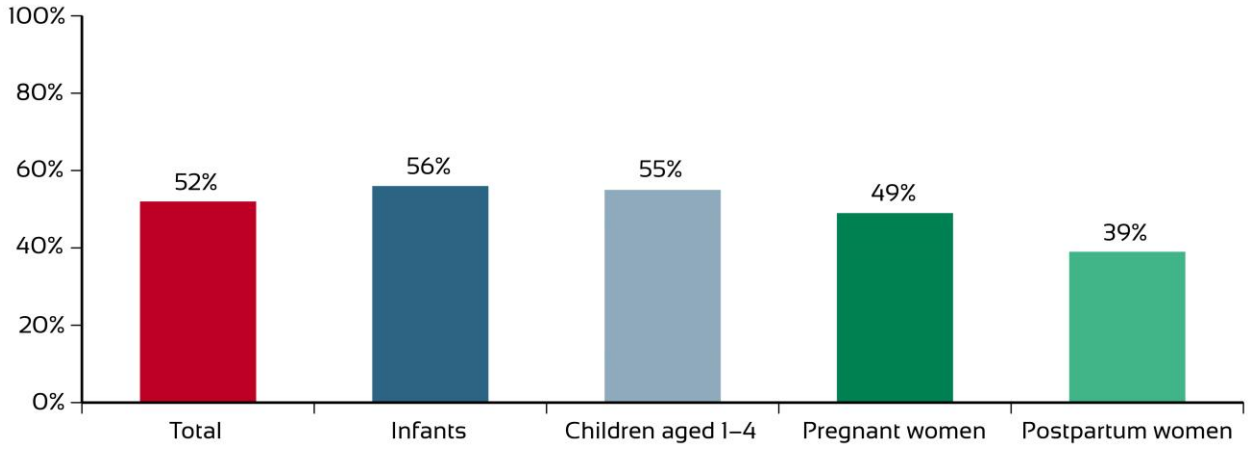
Notes
The total population consists of individuals in the 50 States, the District of Columbia, and Puerto Rico and the other U.S. territories served by WIC in each participant category.
The eligibility rate is the ratio of the total number of individuals eligible for WIC to the total population in each participant category.
Sources: IPUMS-USA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c

Figure 3.1. Distribution of Individuals Eligible for WIC: CY 2017



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

Figure 3.2. WIC Eligibility Rate by Participant Category: CY 2017



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

1. Characteristics of Infants and Children Eligible for WIC

The CPS-ASEC data (NBER, n.d.b) were used to examine the characteristics of the infants and children identified as eligible for WIC in 2017 (see table 3.2).[38] About two-thirds of infants and children eligible for WIC were White (68 percent), 20 percent were Black, and 13 percent were another race or multiple races.[39] More than one-third of eligible infants and children were Hispanic (34 percent), and a majority lived in two-parent households (59 percent; see figure 3.3). About 7 percent of eligible infants and children were living with a household member (aged 17 or older) who ever served in the U.S. military, and 2 percent were living with a household member who was serving in the U.S. military in 2017. Most infants and children eligible for WIC lived with families receiving Medicaid (79 percent). The characteristics of infants eligible for WIC and children eligible for WIC were generally similar (see table 3.2), but infants were more likely than children to live in two-parent households (64 percent versus 58 percent) and less likely to live with working parents (72 percent versus 77 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 annual income that exceeded 185 percent of the Federal Poverty Guidelines but that participated in Medicaid, SNAP, or TANF) compared with those directly income-eligible for WIC (in households with annual income less than or equal to 185 percent of the Federal Poverty Guidelines regardless of whether they participated in Medicaid, SNAP, or TANF).[40] For example, 82 percent of infants and children who were solely adjunctively income-eligible received Medicaid but not SNAP or TANF (see table 3.2). In comparison, 32 percent of directly income-eligible infants and children received Medicaid but not SNAP or TANF. Those who were solely adjunctively income-eligible were more likely to live in two-parent families (71 percent versus 54 percent) and live with one or more working parents (87 percent versus 71 percent) than those who were directly income-eligible.

[38] Table 3.2 presents characteristics of infants and children eligible for WIC based on the CPS-ASEC data using weights that were adjusted for the undercount/overcount in CPS estimates, 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 women eligible for WIC.

[39] Percentages do not add to 100 because of rounding.

[40] Although 28 percent of infants and children eligible for WIC were in households with annual income that exceeded 200 percent of the Federal Poverty Guidelines, among WIC *participants,* this percentage was much lower (1.2 percent of total participants in 2016; Thorn et al., 2018). There are various reasons that a small percentage of participants had income that exceeded 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 for many States and equal to or greater than 300 percent of those for 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 economic unit as defined by WIC.

Table 3.2. Distribution of the Average Monthly Numbers of Infants, Children, and Infants and Children Eligible for WIC (Percentage) by Demographic and Income Characteristics and Adjunctive Eligibility: CY 2017

Characteristics	Infants Eligible for WIC			Children Aged 1–4 Eligible for WIC			Infants and Children Eligible for WIC Aged 0–4		
	Family Income ≤ 185% FPG[a]	Adjunctively Eligible >185% FPG[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible >185% FPG[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible >185% FPG[b]	Total
Total	**1,525,255**	**670,053**	**2,195,309**	**6,061,556**	**2,672,294**	**8,733,851**	**7,586,812**	**3,342,347**	**10,929,159**
Gender	–	–	–	–	–	–	–	–	–
Male	52.8	54.2	53.2	50.0	51.5	50.4	50.5	52.0	51.0
Female	47.2	45.8	46.8	50.0	48.5	49.6	49.5	48.0	49.0
Race	–	–	–	–	–	–	–	–	–
White	65.1	77.9	69.0	63.7	75.1	67.2	64.0	75.6	67.5
Black	20.3	11.8	17.7	23.1	13.9	20.3	22.5	13.5	19.8
Other	14.5	10.3	13.2	13.2	11.0	12.6	13.5	10.9	12.7
Ethnicity	–	–	–	–	–	–	–	–	–
Hispanic	39.3	25.7	35.2	34.4	31.2	33.4	35.4	30.1	33.8
Non-Hispanic	60.7	74.3	64.8	65.6	68.8	66.6	64.6	69.9	66.2
Living arrangement	–	–	–	–	–	–	–	–	–
Two-parent family	59.2	73.7	63.6	53.0	70.1	58.2	54.3	70.8	59.3
Single-parent family	36.1	24.3	32.5	41.1	25.1	36.2	40.1	25.0	35.5
No-parent family	4.7	2.0	3.9	5.9	4.8	5.5	5.6	4.2	5.2
Related non-parent caretaker	1.7	2.0	1.8	3.5	4.8	3.9	3.1	4.2	3.5
Unrelated non-parent caretaker	3.0	0.0	2.1	2.4	0.0	1.6	2.5	0.0	1.7
Military status of household members	–	–	–	–	–	–	–	–	–
Ever served in U.S. military	5.4	10.2	6.9	4.6	11.4	6.7	4.8	11.2	6.7
Serving in U.S. military in 2017[c]	2.5	1.1	2.1	1.7	1.0	1.5	1.9	1.0	1.6

Characteristics	Infants Eligible for WIC			Children Aged 1–4 Eligible for WIC			Infants and Children Eligible for WIC Aged 0–4		
	Family Income ≤ 185% FPG[a]	Adjunctively Eligible >185% FPG[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible >185% FPG[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible >185% FPG[b]	Total
Number of individuals in household	–	–	–	–	–	–	–	–	–
2	5.0	1.9	4.0	5.9	2.1	4.7	5.7	2.1	4.6
3	23.5	32.6	26.3	17.2	22.4	18.8	18.4	24.5	20.3
4	24.9	29.3	26.2	26.9	31.6	28.4	26.5	31.1	27.9
5	22.6	17.4	21.0	22.2	22.4	22.3	22.3	21.4	22.0
6 or more	24.1	18.9	22.5	27.8	21.5	25.9	27.1	20.9	25.2
Percent with working parent(s)	67.1	83.9	72.2	71.8	87.2	76.5	70.9	86.6	75.7
Annual family income relative to FPG[b]	–	–	–	–	–	–	–	–	–
No income	6.5	0.0	4.5	6.8	0.0	4.7	6.8	0.0	4.7
Up to 50% FPG	18.6	0.0	12.9	15.3	0.0	10.7	16.0	0.0	11.1
More than 50% up to 100% FPG	29.6	0.0	20.5	27.0	0.0	18.7	27.5	0.0	19.1
More than 100% up to 130% FPG	18.3	0.0	12.7	19.5	0.0	13.5	19.2	0.0	13.3
More than 130% up to 150% FPG	11.2	0.0	7.8	11.7	0.0	8.1	11.6	0.0	8.0
More than 150% up to 185% FPG	15.8	0.0	11.0	19.7	0.0	13.7	18.9	0.0	13.1
More than 185% up to 200% FPG	0.0	9.5	2.9	0.0	10.0	3.1	0.0	9.9	3.0
More than 200% FPG[d]	0.0	90.5	27.6	0.0	90.0	27.5	0.0	90.1	27.6

Characteristics	Infants Eligible for WIC			Children Aged 1–4 Eligible for WIC			Infants and Children Eligible for WIC Aged 0–4		
	Family Income ≤ 185% FPG[a]	Adjunctively Eligible >185% FPG[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible >185% FPG[b]	Total	Family Income ≤ 185% FPG[a]	Adjunctively Eligible >185% FPG[b]	Total
Receipt of other benefits	–	–	–	–	–	–	–	–	–
No benefit receipt	22.4	0.0	15.6	23.2	0.0	16.1	23.1	0.0	16.0
Medicaid, SNAP, and TANF	4.9	1.7	3.9	4.6	0.8	3.5	4.7	1.0	3.5
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	27.0	17.9	24.2	35.9	12.7	28.8	34.1	13.8	27.9
Medicaid and TANF only	0.3	0.4	0.3	0.3	1.1	0.6	0.3	0.9	0.5
SNAP only	8.2	3.0	6.6	5.6	2.6	4.7	6.1	2.6	5.1
TANF only	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medicaid only	37.2	77.1	49.4	30.3	82.8	46.3	31.7	81.7	47.0

Notes

[a] The WIC economic unit is defined as all individuals 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 (FPG) 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 FPG for the unit's size.

[c] The military status of household members who were currently serving in the U.S. military was included only if they resided in civilian housing on or off a military base.

[d] Although 28 percent of infants and children eligible for WIC were in households with annual income that exceeded 200 percent of the FPG, among WIC participants, this percentage was much lower: 1.2 percent of total participants in 2016 (Thorn et al., 2018). The table shows the mutually exclusive count of infants and children who were directly income-eligible for WIC (family income <= 185 percent of FPG) and those who appeared to be solely adjunctively income-eligible (family income > 185 percent of FPG and receiving SNAP, TANF, or Medicaid) based on annualized income.

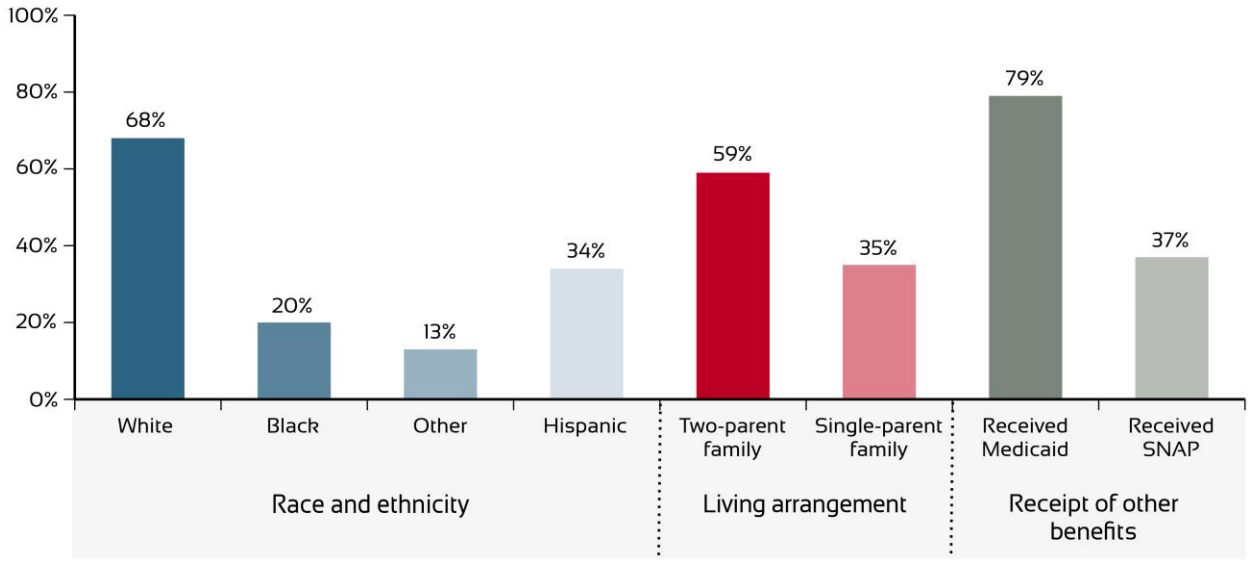
This table does not include estimates for Puerto Rico or the other U.S. territories.

"–" denotes blank cells.

FPG = Federal Poverty Guidelines

Source: NBER, n.d.b

Figure 3.3. Characteristics of Infants and Children Eligible for WIC: CY 2017



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

B. Regional- and State-Level Estimates of Individuals Eligible for WIC

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 2017, the Southeast and Western regions had the greatest percentage of eligible individuals (21 percent; see table 3.3) out of the total population eligible for WIC. In contrast, the Mountain Plains and Northeast regions had the smallest percentage of eligible individuals (8 and 9 percent, respectively). The distribution of eligibility for WIC shows similar regional variations by participant category.

Table 3.3. Distribution of Individuals Eligible for WIC (Percentage) by FNS Region and Participant Category: CY 2017

FNS Region	Infants	Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Northeast	8.8	8.7	8.8	9.0	8.7
Mid-Atlantic	10.8	11.2	10.8	10.7	11.0
Southeast	21.1	21.6	21.1	20.4	21.3
Midwest	14.3	14.9	14.3	13.9	14.6
Southwest	16.6	15.9	16.6	16.5	16.1
Mountain Plains	7.5	7.6	7.5	7.6	7.6
Western	20.9	20.2	20.9	21.9	20.6
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

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

WIC eligibility rates, which indicate the percentage of the total population in each participant category who are estimated to be eligible for WIC, were highest in the Southeast and Southwest regions (58 and 57 percent,[41] respectively) and lowest in the Mountain Plains and Mid-Atlantic regions (47 percent) as shown in table 3.4. Eligibility rates by participant category show similar variations by region (see figure 3.4).

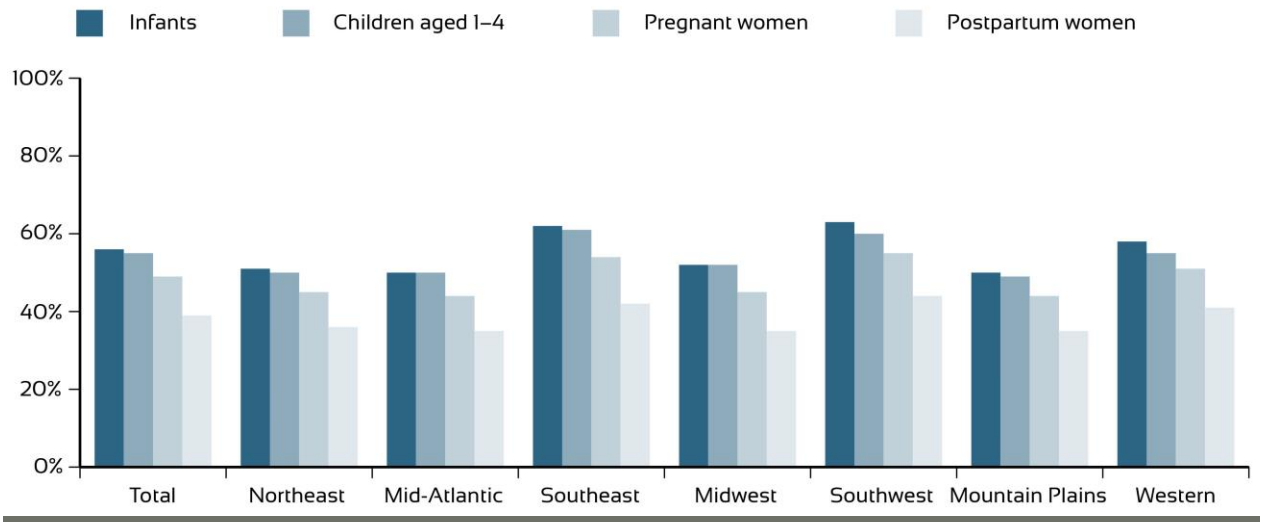
By State, California had the largest share of individuals eligible for WIC (12 percent), reflecting its large population (see table 3.5). The States with the four largest eligible populations (California, Florida, New York, and Texas) had 35 percent of the total U.S. population eligible for WIC in 2017.

Table 3.4. WIC Eligibility Rates by FNS Region and Participant Category: CY 2017

FNS Region	Infants	Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Northeast	51.3	50.0	44.8	36.1	47.6
Mid-Atlantic	50.0	50.0	43.7	34.5	47.1
Southeast	61.6	61.2	53.8	41.5	57.6
Midwest	52.0	52.1	45.4	35.1	48.9
Southwest	63.3	59.8	55.3	43.8	57.5
Mountain Plains	50.1	49.2	43.8	34.7	46.6
Western	58.0	55.2	50.6	41.5	53.0
Total	**56.3**	**54.9**	**49.2**	**38.9**	**52.1**

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

Figure 3.4. WIC Eligibility Rates by FNS Region and Participant Category: CY 2017



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

[41] The unrounded eligibility rate is 57.479 percent for the Southwest region, which rounds to 57 percent.

Table 3.5. Distribution of Individuals Eligible for WIC (Percentage) by State and FNS Region: CY 2017

State	Percent Share of National Estimate of Population Eligible for WIC
Alabama	1.7
Alaska	0.3
Arizona	2.4
Arkansas	1.1
California	12.3
Colorado	1.5
Connecticut	0.7
Delaware	0.3
District of Columbia	0.2
Florida	6.5
Georgia	3.6
Hawaii	0.4
Idaho	0.6
Illinois	3.5
Indiana	2.1
Iowa	0.9
Kansas	0.9
Kentucky	1.5
Louisiana	1.8
Maine	0.3
Maryland	1.5
Massachusetts	1.4
Michigan	3.0
Minnesota	1.3
Mississippi	1.1
Missouri	1.8
Montana	0.3
Nebraska	0.5
Nevada	1.0
New Hampshire	0.3
New Jersey	2.0
New Mexico	0.8
New York	5.7
North Carolina	3.2
North Dakota	0.2
Ohio	3.3
Oklahoma	1.5
Oregon	1.2
Pennsylvania	3.3
Puerto Rico	1.2

State	Percent Share of National Estimate of Population Eligible for WIC
Rhode Island	0.2
South Carolina	1.6
South Dakota	0.3
Tennessee	2.2
Texas	10.9
Utah	1.0
Vermont	0.2
Virginia	2.0
Washington	2.2
West Virginia	0.6
Wisconsin	1.4
Wyoming	0.2
FNS Region	
Northeast	8.7
Mid-Atlantic	11.0
Southeast	21.3
Midwest	14.6
Southwest	16.1
Mountain Plains	7.6
Western	20.6
Total	**100.0**

Notes
State and regional eligibility estimates 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.
Sources: IPUMS-USA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c

C. Changes in the Numbers of Individuals Eligible for WIC: CY 2015–CY 2017

For this report, changes in the numbers of individuals eligible for WIC are compared across a 3-year period rather than a 2-year period because of a single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data for 2016. Compared with the 2015 estimates, the 2016 estimates showed a large drop—almost 14 percent—in the number of infants eligible for WIC, resulting in an increase of 9 percentage points in the infant coverage rate. The numbers of income-eligible infants in the CPS-ASEC data and the ACS data are much more similar for 2017 than for 2016. As a result, comparisons with the 2016 estimates were removed from this year's report, and 2017 estimates are compared with 2015 estimates.

Overall, the estimated total number of individuals eligible for WIC decreased between 2015 and 2017. The number of eligible individuals decreased from 15.1 million to 14.1 million, a decrease of 7 percent (see table 3.6). Each participant category had a decrease in the number of eligible individuals. The estimated number of eligible infants decreased by 11 percent, whereas the number of eligible children decreased by 4 percent. The estimated numbers of pregnant and postpartum women eligible for WIC decreased by 11 and 7 percent, respectively.

The percentage changes in the population eligible for WIC shown in table 3.6 can also be viewed as the combined change in the total population for each participant category and the eligibility rate for each category. For example, the 11-percent decrease in the total number of infants eligible for WIC can be attributed almost entirely to a decrease in the eligibility rate among infants (the total population of infants decreased by 1 percent, but the eligibility rate among infants decreased by 10 percent). As a result, the total number of infants eligible for WIC decreased by 11 percent.

Table 3.6. Changes in the Total Population, Total WIC Eligibility, and WIC Eligibility Rates by Participant Category: CY 2015–CY 2017

Participant Category	2015	2016	2017	Percent Change 2015–2017
Total Population				
Infants	3,998,800	3,966,090	3,959,629	-1.0
Children aged 1–4	16,142,707	16,193,444	16,133,557	-0.1
Children aged 1	4,044,481	4,068,849	3,983,480	-1.5
Children aged 2	4,034,206	4,080,801	4,046,080	0.3
Children aged 3	4,031,844	4,034,985	4,074,089	1.0
Children aged 4	4,032,176	4,008,809	4,029,908	-0.1
Pregnant women	2,987,403	2,962,967	2,953,892	-1.1
Postpartum women	3,983,205	3,950,623	3,939,025	-1.1
Breastfeeding women	2,147,025	2,241,095	2,338,744	8.9*
Non-breastfeeding women	1,836,179	1,709,528	1,600,281	-12.8*
Total	**27,112,115**	**27,073,124**	**26,986,104**	**-0.5**
Total Eligible				
Infants	2,506,686	2,159,041	2,227,965	-11.1*
Children aged 1–4	9,268,848	8,907,712	8,859,001	-4.4*
Children aged 1	2,274,986	2,317,916	2,250,293	-1.1
Children aged 2	2,321,950	2,222,568	2,268,129	-2.3
Children aged 3	2,340,558	2,215,120	2,194,926	-6.2*
Children aged 4	2,331,355	2,152,108	2,145,654	-8.0*
Pregnant women	1,634,852	1,408,119	1,452,144	-11.2*
Postpartum women	1,652,116	1,458,923	1,533,038	-7.2*
Breastfeeding women	1,034,333	949,592	1,028,863	-0.5
Non-breastfeeding women	617,783	509,331	504,175	-18.4*
Total	**15,062,503**	**13,933,795**	**14,072,148**	**-6.6***
Eligibility Rate				
Infants	62.7	54.4	56.3	-10.2*
Children aged 1–4	57.4	55.0	54.9	-4.4*
Children aged 1	56.2	57.0	56.5	0.4
Children aged 2	57.6	54.5	56.1	-2.6
Children aged 3	58.1	54.9	53.9	-7.2*
Children aged 4	57.8	53.7	53.2	-7.9*

Participant Category	2015	2016	2017	Percent Change 2015–2017
Pregnant women	54.7	47.5	49.2	-10.2*
Postpartum women	41.5	36.9	38.9	-6.2*
Breastfeeding women	48.2	42.4	44.0	-8.7*
Non-breastfeeding women	33.6	29.8	31.5	-6.4*
Total	**55.6**	**51.5**	**52.1**	**-6.1***

Notes
* Indicates a statistically significant difference between the 2015 and 2017 estimates of individuals eligible for WIC or WIC eligibility rate at the 95-percent confidence level. The statistical significance testing was conducted on the 2015–2017 change in WIC eligibility based on the CPS-ASEC data, which included data only for States. It did not include data for Puerto Rico or the other U.S. territories served by WIC.
The 2017 estimates are compared with the 2015 estimates because of the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data for 2016.
Sources: IPUMS-USA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c

D. Trends in WIC Eligibility Estimates: CY 2005–CY 2017

The total number of individuals eligible for WIC fluctuated from 2005 to 2017. Across the 12-year period, the total number of individuals eligible for WIC was highest in 2015 (15.1 million) and lowest in 2007 (14.0 million), as shown in table 3.7.

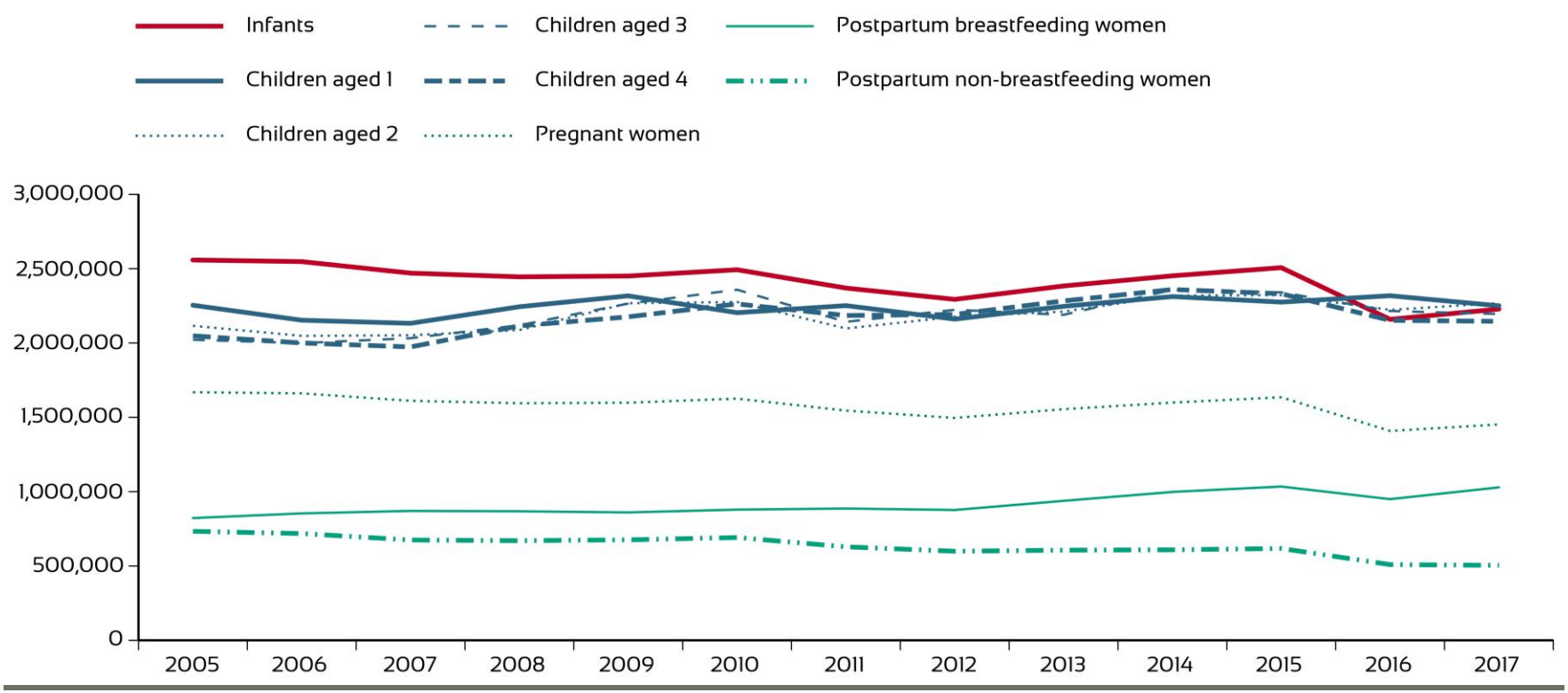
The relative share of the eligible population by participant category remained the same over time: total children consistently made up the largest proportion, followed by infants, pregnant women, postpartum breastfeeding women, and postpartum non-breastfeeding women. As figure 3.5 shows, the number of eligible children by year of age remained stable over time.

Table 3.7. Estimated Average Monthly Number of Individuals Eligible for WIC by Year and Participant Category: CY 2005–CY 2017

Year	Infants	Children Aged 1–4	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Non-Breastfeeding 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
2016	2,159,041	8,907,712	1,408,119	949,592	509,331	13,933,795
2017	2,227,965	8,859,001	1,452,144	1,028,863	504,175	14,072,148

Note
Estimates for 2016 should be interpreted with caution given the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data.
Sources: IPUMS-USA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c

Figure 3.5. Trends in WIC Eligibility by Participant Category: CY 2005–CY 2017



Note

Estimates for 2016 should be interpreted with caution given the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data.

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

Chapter 4. WIC Coverage Rates for CY 2017

This chapter presents coverage rates for women, infants, and children in 2017. The coverage rates were calculated as the percentages of women, infants, and children eligible for WIC who received WIC benefits in an average month in 2017. WIC coverage rates are useful for understanding how well WIC reaches those who are eligible for the benefits provided by the program.

Section A presents national-level WIC coverage rates in 2017 by participant category and by race and ethnicity. Section B presents regional- and State-level coverage rates. Section C examines the changes in coverage rates from 2015 to 2017. Section D discusses trends in coverage rates from 2005 to 2017.

A. National-Level WIC Coverage Rates

Of the 14.1 million individuals eligible for WIC in an average month in 2017, 7.2 million participated, resulting in a 51-percent national coverage rate (see table 4.1). Coverage rates were highest for postpartum non-breastfeeding women (96 percent) and lowest for children aged 1 to 4 (42 percent; see figure 4.1). Moreover, coverage rates for children decreased with age; rates were highest for 1-year-olds (58 percent) and lowest for 4-year-olds (25 percent; see figure 4.2). Coverage rates were higher for postpartum women (69 percent) than pregnant women (45 percent).[42]

Coverage rates were highest for Hispanics (60 percent) and lowest for White-Only Non-Hispanics (41 percent; see table 4.2). The coverage rate for Black-Only Non-Hispanics was 59 percent. Although coverage rates across all participant categories were highest for Hispanics, this was largely because of the high rate of participation among children. Coverage rates were highest for Hispanic children (54 percent) and lowest for White-Only, Non-Hispanic children (32 percent). For infants, pregnant women, and postpartum women, rates were highest for Black-Only Non-Hispanics. Within all race and ethnicity groups, coverage rates were highest for infants (see figure 4.3).

Table 4.1. WIC Coverage Rate by Participant Category: CY 2017

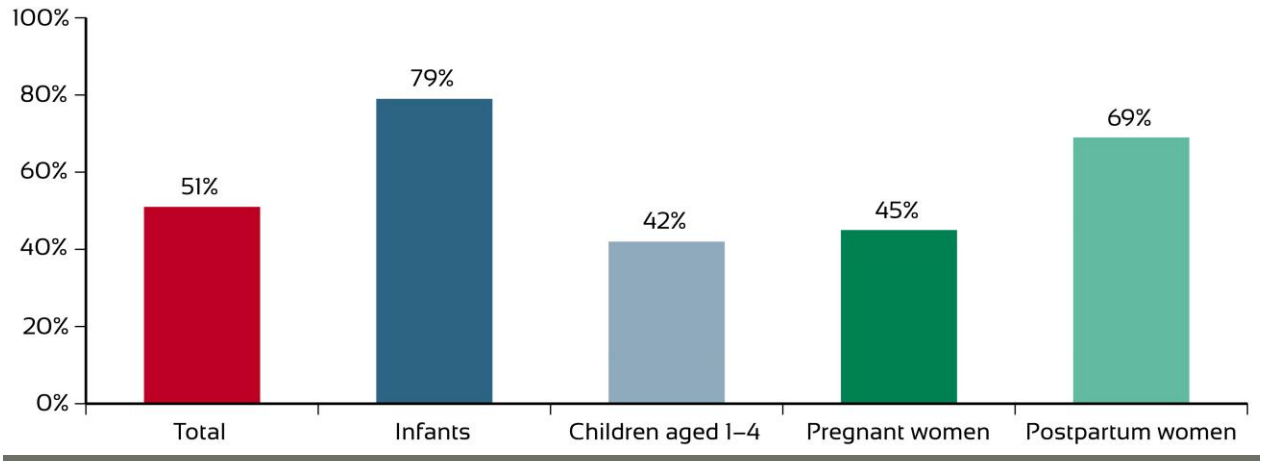
Participant Category	Number Eligible	Number Participating	Coverage Rate
Infants	2,227,965	1,767,615	79.3
Children aged 1–4	8,859,001	3,702,190	41.8
Children aged 1	2,250,293	1,294,737	57.5
Children aged 2	2,268,129	992,656	43.8
Children aged 3	2,194,926	878,116	40.0
Children aged 4	2,145,654	536,682	25.0
Pregnant women	1,452,144	658,131	45.3

[42] As noted in the methodology section, 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 realized they were 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
Postpartum women	1,533,038	1,056,141	68.9
Breastfeeding women	1,028,863	570,509	55.5
Non-breastfeeding women	504,175	485,633	96.3
Total	**14,072,148**	**7,184,078**	**51.1**

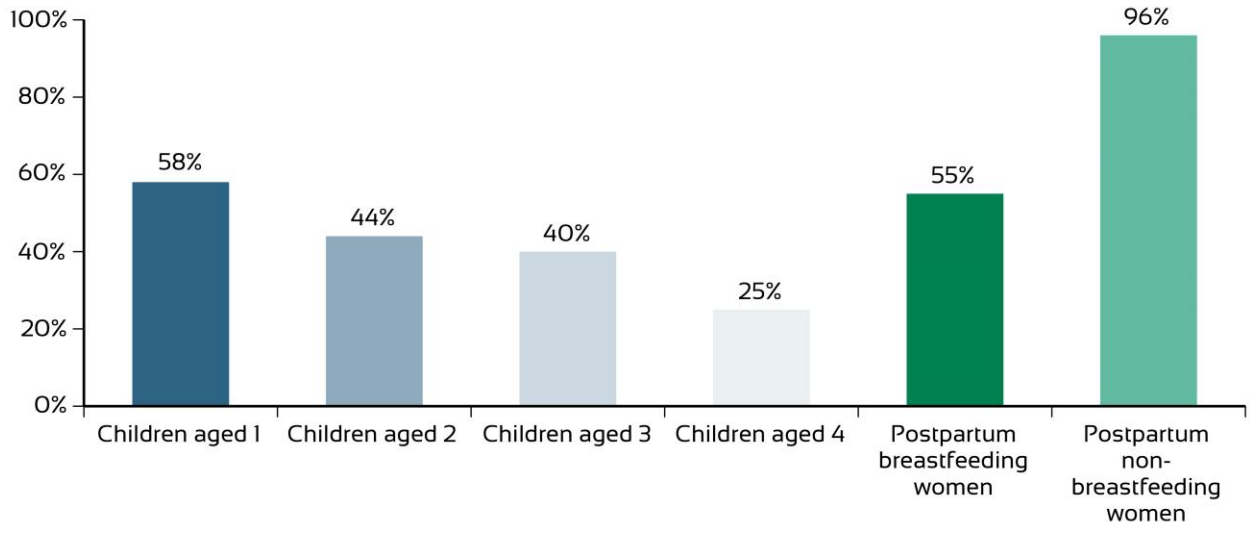
Note
WIC administrative data on participating children by year of age were not available. The numbers of participating children by year of age in this table are based on the distribution among children enrolled in WIC according to WIC PC2016 data.
Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished WIC administrative data

Figure 4.1. WIC Coverage Rate by Participant Category: CY 2017



Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

Figure 4.2. WIC Coverage Rates for Children by Year of Age and Postpartum Women by Breastfeeding Status: CY 2017



Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

Table 4.2. WIC Eligibility, Participants, and Coverage Rates by Participant Category and by Race and Ethnicity: CY 2017

Participant Category	White-Only Non-Hispanic	Black-Only Non-Hispanic	Other Non-Hispanic	Hispanic	All Races
Number Eligible					
Infants	859,604	342,802	221,035	798,819	2,222,259
Children aged 1–4	3,300,038	1,616,097	898,459	3,023,851	8,838,444
Pregnant women	557,816	224,876	143,912	521,824	1,448,428
Postpartum women	586,230	225,546	152,407	564,940	1,529,122
Total	**5,303,688**	**2,409,321**	**1,415,812**	**4,909,433**	**14,038,254**
Number Participating					
Infants	549,650	383,071	158,979	672,064	1,763,764
Children aged 1–4	1,041,946	684,719	336,241	1,628,069	3,690,976
Pregnant women	230,443	129,619	46,258	250,460	656,780
Postpartum women	346,258	217,752	77,050	412,612	1,053,671
Total	**2,168,297**	**1,415,160**	**618,528**	**2,963,205**	**7,165,190**
Coverage Rate					
Infants	63.9	100.0	71.9	84.1	79.4
Children aged 1–4	31.6	42.4	37.4	53.8	41.8
Pregnant women	41.3	57.6	32.1	48.0	45.3
Postpartum women	59.1	96.5	50.6	73.0	68.9
Total	**40.9**	**58.7**	**43.7**	**60.4**	**51.0**

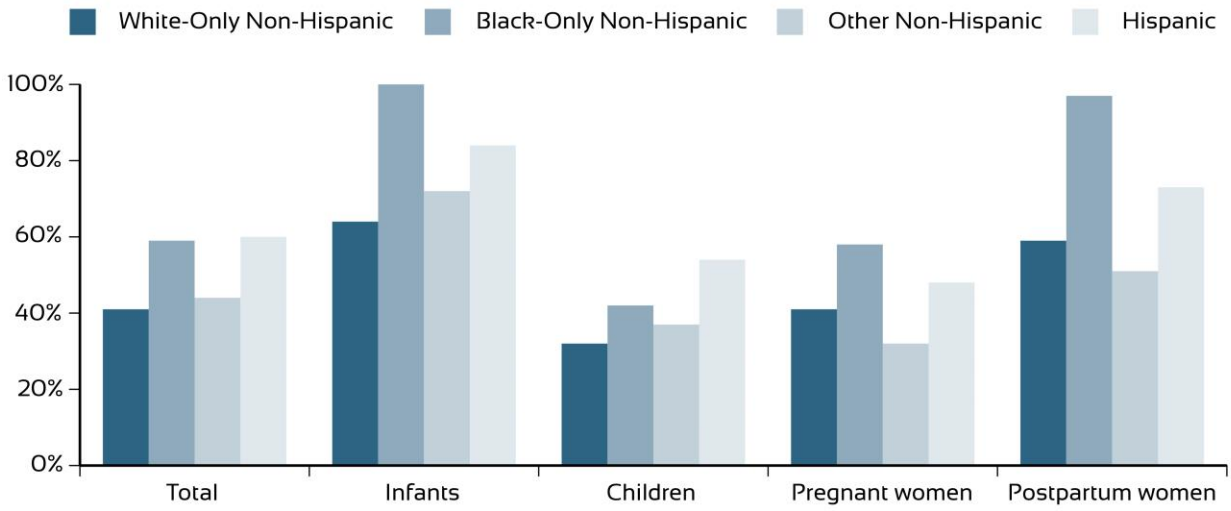
Notes

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.

The estimated coverage rate exceeded 100 percent for Black-Only Non-Hispanic infants. This is likely a result of sampling variability in the CPS-ASEC survey data used to estimate the number of infants eligible for WIC (denominator of the rate). The lower-bound range of the 95-percent confidence intervals surrounding the rate is below 100 percent. See chapter 6 in volume I for more information on measures of statistical uncertainty for the eligibility estimates.

Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; unpublished internal WIC administrative data

Figure 4.3. WIC Coverage Rates by Race and Ethnicity and by Participant Category: CY 2017



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

B. 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 (56 percent), and the Mountain Plains region had the lowest rate (44 percent) in comparison with the 51-percent national rate (see table 4.3).

In general, when comparing coverage rates by participant category, rates were similar across regions, with some exceptions (see table 4.3). For example, coverage rates for children were lowest across most regions; however, in the Northeast and Western regions, rates for pregnant women were the lowest (45 percent). Across all regions, coverage rates for infants were the highest, which mirrored national rates.

Regional and national coverage rates varied with respect to race and ethnicity (see table 4.4). Coverage rates for White-Only Non-Hispanics were lowest in four of the seven regions, but rates for Other Non-Hispanics were even lower in the Mid-Atlantic, Southeast, and Southwest regions. Rates for Black-Only Non-Hispanics and Hispanics were higher than those for White-Only Non-Hispanics and Other Non-Hispanics across all regions, which mirrored national rates. However, within regions, there was variation on which rates were higher. For example, the Northeast, Southeast, Midwest, and Mountain Plains regions had higher coverage rates for Black-Only Non-Hispanics, whereas the remaining three regions had higher rates for Hispanics.

Similarly, a comparison of coverage rates by State in 2017 found substantial variation. Rates ranged from a high of 64 percent in Maryland to a low of 36 percent in Montana compared with the national average coverage rate of 51 percent (see table 4.5 and figure 4.4). Fifteen States and one U.S. territory had coverage rates greater than 51 percent (Alabama, California, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, New Jersey, New York, North Carolina, North Dakota, Oregon, Puerto Rico, Rhode Island, Texas, and Vermont). Four States had coverage rates less than 40 percent (Alaska, Montana, New Hampshire, 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 4.6 and figures 4.5 through 4.8). Puerto Rico had a higher coverage rate (80 percent) than any State. Ten States (Alaska, Arizona, Colorado, Delaware, Kansas, Montana, New Hampshire, Utah, Virginia, and West Virginia) had coverage rates that were consistently lower than national rates across all categories and age groups. Many States had higher or lower coverage rates compared with average coverage rates across participant categories. For example, compared with the national average, coverage rates in Arkansas were higher for infants and pregnant women (by 8 percentage points) but lower for all children (by 7 percentage points). In Mississippi, compared with the national average, coverage rates were much higher for infants, pregnant women, and postpartum women (by 10 to 21 percentage points) but lower for children (by 3 percentage points).

State rates by race and ethnicity were also generally consistent with average State rates for these subgroups.[43] For example, similar to national coverage rates, State-level coverage rates were higher for Hispanics than White-Only Non-Hispanics in every State except for Maine, Montana, and Vermont (see table 4.7 and figures 4.9 through 4.11).

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 4.6 shows that for some States with small populations, such as New Hampshire and North Dakota, 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 limitations 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.

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

Table 4.3. WIC Eligibility, Participants, and Coverage Rates by FNS Region and Participant Category: CY 2017

FNS Region	Infants	Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Number Eligible					
Northeast	195,412	767,502	127,332	137,313	1,227,558
Mid-Atlantic	239,600	991,365	156,193	164,624	1,551,782
Southeast	470,069	1,910,663	306,490	312,548	2,999,772
Midwest	319,036	1,319,286	207,727	213,145	2,059,194
Southwest	369,969	1,406,725	241,338	253,095	2,271,127
Mountain Plains	167,976	670,005	109,322	116,275	1,063,577
Western	465,904	1,793,454	303,742	336,038	2,899,138
Total	**2,227,965**	**8,859,001**	**1,452,144**	**1,533,038**	**14,072,148**
Number Participating					
Northeast	151,551	350,419	57,132	93,859	652,961
Mid-Atlantic	198,603	442,318	77,066	110,627	828,615
Southeast	381,247	722,830	144,636	222,066	1,470,778
Midwest	269,866	497,899	92,546	137,704	998,015
Southwest	296,378	556,276	108,789	193,338	1,154,780
Mountain Plains	116,081	238,193	42,343	69,229	465,845
Western	353,889	894,257	135,620	229,318	1,613,084
Total	**1,767,615**	**3,702,190**	**658,131**	**1,056,141**	**7,184,078**
Coverage Rate					
Northeast	77.6	45.7	44.9	68.4	53.2
Mid-Atlantic	82.9	44.6	49.3	67.2	53.4
Southeast	81.1	37.8	47.2	71.1	49.0
Midwest	84.6	37.7	44.6	64.6	48.5
Southwest	80.1	39.5	45.1	76.4	50.8
Mountain Plains	69.1	35.6	38.7	59.5	43.8
Western	76.0	49.9	44.7	68.2	55.6
Total	**79.3**	**41.8**	**45.3**	**68.9**	**51.1**

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

Table 4.4. WIC Eligibility, Participants, and Coverage Rates by FNS Region and by Race and Ethnicity Category: CY 2017

FNS Region	White-Only Non-Hispanic	Black-Only Non-Hispanic	Other Non-Hispanic	Hispanic	All Races
Number Eligible					
Northeast	474,588	187,947	149,796	415,228	1,227,558
Mid-Atlantic	579,590	325,614	129,742	509,511	1,544,457
Southeast	1,221,464	882,676	231,990	663,641	2,999,772
Midwest	1,098,823	396,803	212,093	351,475	2,059,194
Southwest	597,633	360,666	178,830	1,133,998	2,271,127
Mountain Plains	601,592	98,662	123,519	239,805	1,063,577
Western	729,999	156,953	389,842	1,595,775	2,872,569
Total	**5,303,688**	**2,409,321**	**1,415,812**	**4,909,433**	**14,038,254**
Number Participating					
Northeast	203,822	129,736	75,090	244,312	652,961
Mid-Atlantic	235,653	197,082	48,553	343,878	825,166
Southeast	524,385	498,984	77,870	369,539	1,470,778
Midwest	457,205	242,201	100,740	197,870	998,015
Southwest	232,095	197,837	69,167	655,681	1,154,780
Mountain Plains	233,223	52,974	51,324	128,324	465,845
Western	281,914	96,345	195,783	1,023,602	1,597,645
Total	**2,168,297**	**1,415,160**	**618,528**	**2,963,205**	**7,165,190**
Coverage Rate					
Northeast	42.9	69.0	50.1	58.8	53.2
Mid-Atlantic	40.7	60.5	37.4	67.5	53.4
Southeast	42.9	56.5	33.6	55.7	49.0
Midwest	41.6	61.0	47.5	56.3	48.5
Southwest	38.8	54.9	38.7	57.8	50.8
Mountain Plains	38.8	53.7	41.6	53.5	43.8
Western	38.6	61.4	50.2	64.1	55.6
Total	**40.9**	**58.7**	**43.7**	**60.4**	**51.0**

Note
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.b; Thorn et al., 2018; unpublished internal WIC administrative data

Table 4.5. WIC Eligibility, Participants, and Coverage Rates by State and FNS Region: CY 2017

State	Number Eligible	Number Participating	Coverage Rate
Alabama	233,113	122,657	52.6
Alaska	45,746	17,862	39.0*
Arizona	331,674	152,280	45.9*
Arkansas	156,252	76,048	48.7
California	1,731,574	1,057,320	61.1*
Colorado	208,724	84,911	40.7*
Connecticut	98,290	47,771	48.6
Delaware	39,560	17,186	43.4*
District of Columbia	29,059	13,277	45.7
Florida	908,771	462,817	50.9
Georgia	500,128	232,429	46.5*
Hawaii	61,106	26,328	43.1*
Idaho	85,677	35,771	41.8*
Illinois	498,136	208,451	41.8*
Indiana	298,343	144,140	48.3
Iowa	121,618	61,745	50.8
Kansas	128,825	53,126	41.2*
Kentucky	216,964	107,041	49.3
Louisiana	252,345	118,470	46.9*
Maine	37,944	19,048	50.2
Maryland	204,479	131,490	64.3*
Massachusetts	201,490	111,809	55.5*
Michigan	415,002	221,742	53.4*
Minnesota	186,988	110,004	58.8*
Mississippi	155,003	84,724	54.7*
Missouri	255,988	118,363	46.2*
Montana	48,102	17,123	35.6*
Nebraska	75,351	37,108	49.2
Nevada	135,926	65,665	48.3
New Hampshire	35,127	12,878	36.7*
New Jersey	277,388	146,735	52.9
New Mexico	117,289	49,392	42.1*
New York	799,111	430,658	53.9*
North Carolina	445,957	228,903	51.3
North Dakota	24,631	12,656	51.4
Ohio	467,359	218,513	46.8*
Oklahoma	213,200	104,199	48.9
Oregon	169,149	88,657	52.4
Pennsylvania	464,955	225,052	48.4
Puerto Rico	167,701	133,910	79.9

State	Number Eligible	Number Participating	Coverage Rate
Rhode Island	33,206	19,315	58.2*
South Carolina	227,089	98,059	43.2*
South Dakota	38,491	18,165	47.2
Tennessee	312,747	134,149	42.9*
Texas	1,532,041	806,672	52.7*
Utah	138,611	52,742	38.1*
Vermont	22,389	11,482	51.3
Virginia	284,062	119,876	42.2*
Washington	311,716	153,762	49.3
West Virginia	77,252	37,640	48.7
Wisconsin	193,367	95,164	49.2
Wyoming	23,237	9,905	42.6
FNS Region			
Northeast	1,227,558	652,961	53.2*
Mid-Atlantic	1,551,782	828,615	53.4
Southeast	2,999,772	1,470,778	49.0*
Midwest	2,059,194	998,015	48.5*
Southwest	2,271,127	1,154,780	50.8
Mountain Plains	1,063,577	465,845	43.8*
Western	2,899,138	1,613,084	55.6*
Total	**14,072,148**	**7,184,078**	**51.1**

Notes

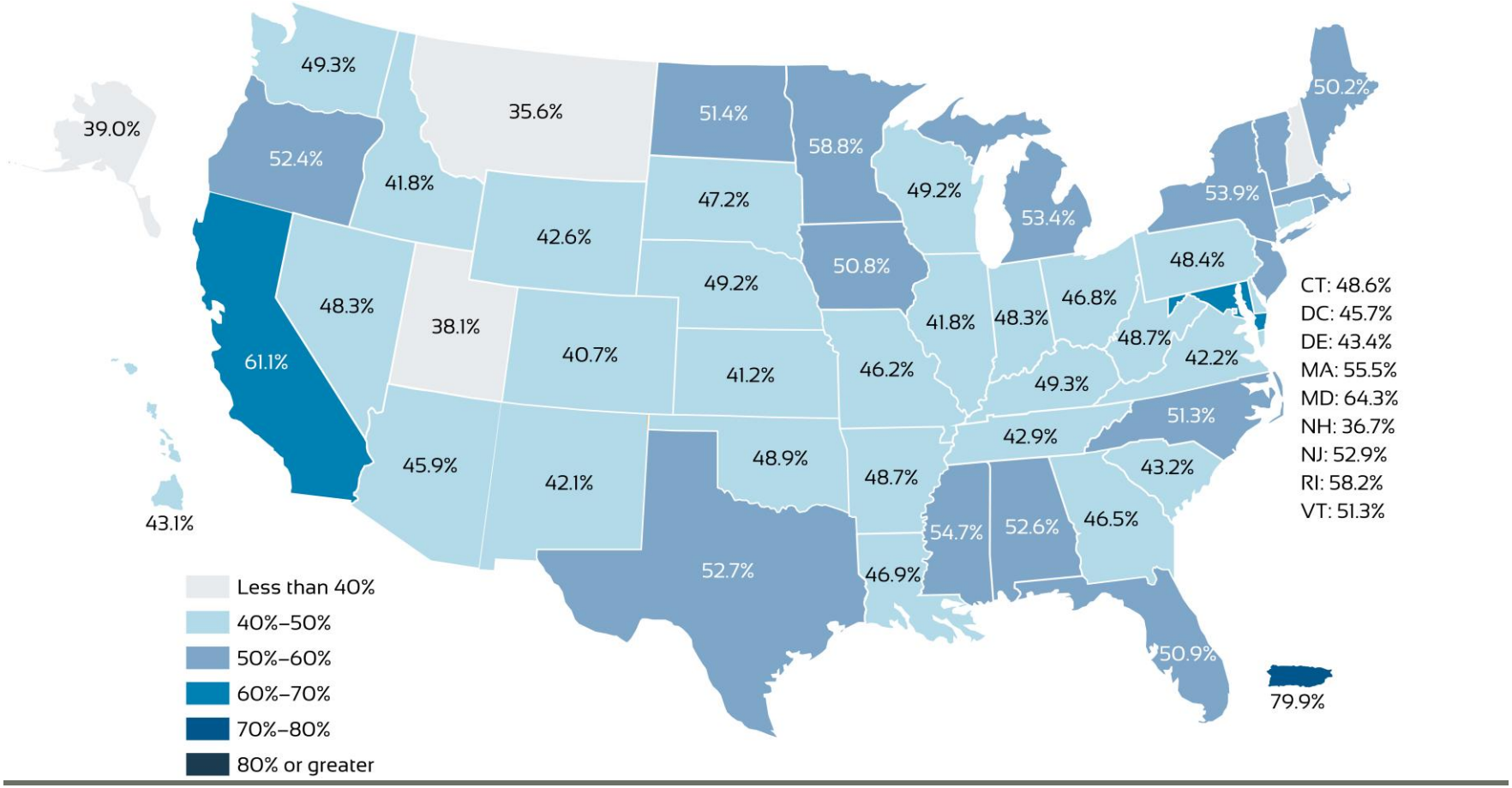
* Indicates a statistically significant difference between the State or regional coverage rate and the national coverage rate at the 95-percent confidence level. The statistical significance testing was conducted based on the CPS-ASEC data, which included data only for States. It did not include data for Puerto Rico or the other U.S. territories served by WIC; therefore, no statistical testing was done to compare the provided coverage rate for Puerto Rico to that of the national coverage rate.

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 and included in the Mid-Atlantic regional totals. As a result, the Mid-Atlantic regional coverage rate was excluded from significance testing. When Puerto Rico was excluded from the Mid-Atlantic region, the regional coverage rate was 50.2 percent, which is not statistically different from the national coverage rate at a 95-percent confidence level.

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

Figure 4.4. WIC Coverage Rate for Total Eligible Individuals by State: CY 2017
National Coverage Rate: 51.1 Percent



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

Table 4.6. WIC Coverage Rates by State and Participant Category: CY 2017

State	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	All Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Alabama	89.4	53.6	41.4	36.0	26.6	39.6	58.5	69.3	52.6
Alaska	56.0	41.5	35.7	33.2	22.5	33.9	35.7	45.5	39.0
Arizona	74.4	54.2	39.5	35.4	20.0	37.4	35.0	65.1	45.9
Arkansas	87.6	54.1	36.1	28.2	19.7	34.7	52.9	68.3	48.7
California	81.6	67.2	55.4	54.1	43.7	55.1	49.8	74.7	61.1
Colorado	62.5	48.9	33.0	31.1	19.4	33.1	35.4	57.7	40.7
Connecticut	91.0	59.7	37.3	31.9	21.7	37.0	59.1	55.3	48.6
Delaware	71.0	51.6	39.4	31.3	16.1	34.8	40.7	49.8	43.4
District of Columbia	89.0	55.1	30.8	30.7	11.7	31.3	37.0	75.7	45.7
Florida	81.8	59.0	42.9	37.4	21.5	40.5	47.9	71.1	50.9
Georgia	70.2	50.8	40.4	35.6	21.4	37.3	35.7	76.6	46.5
Hawaii	65.5	49.9	41.8	31.3	25.9	36.2	35.9	53.5	43.1
Idaho	59.0	58.4	37.5	34.8	15.9	36.6	32.7	51.6	41.8
Illinois	80.4	39.6	32.1	28.2	20.1	30.2	40.2	63.9	41.8
Indiana	77.9	54.5	46.6	35.1	16.0	38.7	40.3	69.6	48.3
Iowa	82.3	55.7	45.7	36.8	21.2	40.5	44.5	79.2	50.8
Kansas	62.7	50.5	37.5	35.2	16.2	34.7	37.8	49.9	41.2
Kentucky	78.9	54.3	40.6	38.1	26.1	39.8	48.5	60.5	49.3
Louisiana	85.7	46.7	35.5	28.6	19.6	33.1	48.0	70.6	46.9
Maine	67.0	60.2	47.5	52.1	28.2	46.7	37.6	55.2	50.2
Maryland	100.0	70.9	53.4	54.2	27.7	51.6	66.7	84.2	64.3
Massachusetts	74.8	68.3	53.9	46.9	29.2	49.9	45.3	68.1	55.5
Michigan	90.8	59.3	44.8	47.8	19.3	43.3	54.7	63.4	53.4
Minnesota	85.6	65.0	54.6	53.5	30.7	50.7	48.1	77.8	58.8
Mississippi	100.0	56.0	39.9	33.5	24.1	38.7	55.7	86.9	54.7
Missouri	80.3	53.0	35.5	30.9	18.3	34.4	46.8	65.3	46.2
Montana	56.7	45.7	30.0	31.4	15.0	29.8	31.4	42.4	35.6

State	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	All Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Nebraska	75.7	51.8	42.7	43.3	27.8	41.5	37.6	66.8	49.2
Nevada	73.0	53.4	44.4	34.8	31.6	41.0	34.2	64.0	48.3
New Hampshire	44.6	56.1	49.4	31.2	16.4	36.7	25.9	35.4	36.7
New Jersey	79.4	56.4	44.1	43.2	31.5	44.2	45.1	74.6	52.9
New Mexico	63.7	48.6	33.7	37.9	18.0	34.7	36.1	56.1	42.1
New York	78.2	64.9	47.4	44.1	27.4	46.0	44.0	71.7	53.9
North Carolina	81.6	55.7	46.7	38.0	22.2	40.7	48.2	72.7	51.3
North Dakota	68.7	86.8	38.3	54.0	24.7	47.4	36.3	59.7	51.4
Ohio	91.5	44.1	33.2	31.4	23.0	33.1	44.6	59.3	46.8
Oklahoma	79.6	53.0	42.7	36.0	23.6	38.7	52.1	61.2	48.9
Oregon	69.8	64.2	49.6	44.3	33.7	47.6	42.5	63.5	52.4
Pennsylvania	84.4	55.2	41.9	35.0	21.4	38.5	46.2	61.0	48.4
Rhode Island	96.4	53.0	54.2	44.2	35.3	47.5	54.4	75.8	58.2
South Carolina	80.1	51.5	31.2	26.4	10.3	30.1	45.2	67.9	43.2
South Dakota	70.1	58.2	62.2	31.6	21.1	41.4	35.8	55.9	47.2
Tennessee	80.2	41.3	30.2	31.1	14.4	29.5	49.8	63.4	42.9
Texas	79.8	63.0	43.1	39.0	19.3	41.6	43.6	81.4	52.7
Utah	54.5	42.3	32.9	29.6	23.7	32.9	29.7	49.8	38.1
Vermont	80.1	52.0	41.5	45.5	32.4	42.9	51.0	75.0	51.3
Virginia	73.8	39.6	35.2	33.6	18.4	31.9	41.6	57.7	42.2
Washington	62.0	56.9	47.1	47.0	35.4	46.7	39.5	53.3	49.3
West Virginia	73.9	57.1	40.8	39.9	24.2	39.9	42.0	65.0	48.7
Wisconsin	74.1	60.8	43.8	38.5	25.5	42.6	37.9	61.0	49.2
Wyoming	68.4	59.3	34.8	25.4	23.4	34.4	38.2	60.7	42.6

State	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	All Children Aged 1–4	Pregnant Women	Postpartum Women	Total
FNS Region									
Northeast	77.6	64.0	47.7	43.3	27.2	45.7	44.9	68.4	53.2
Mid-Atlantic	82.9	61.6	47.8	44.1	24.2	44.6	49.3	67.2	53.4
Southeast	81.1	53.8	40.3	35.4	20.9	37.8	47.2	71.1	49.0
Midwest	84.6	51.0	40.1	37.2	21.5	37.7	44.6	64.6	48.5
Southwest	80.1	58.8	41.2	36.8	19.7	39.5	45.1	76.4	50.8
Mountain Plains	69.1	51.3	37.0	33.0	20.1	35.6	38.7	59.5	43.8
Western	76.0	62.8	50.8	48.3	37.3	49.9	44.7	68.2	55.6
Total	**79.3**	**57.5**	**43.8**	**40.0**	**25.0**	**41.8**	**45.3**	**68.9**	**51.1**

Notes

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.

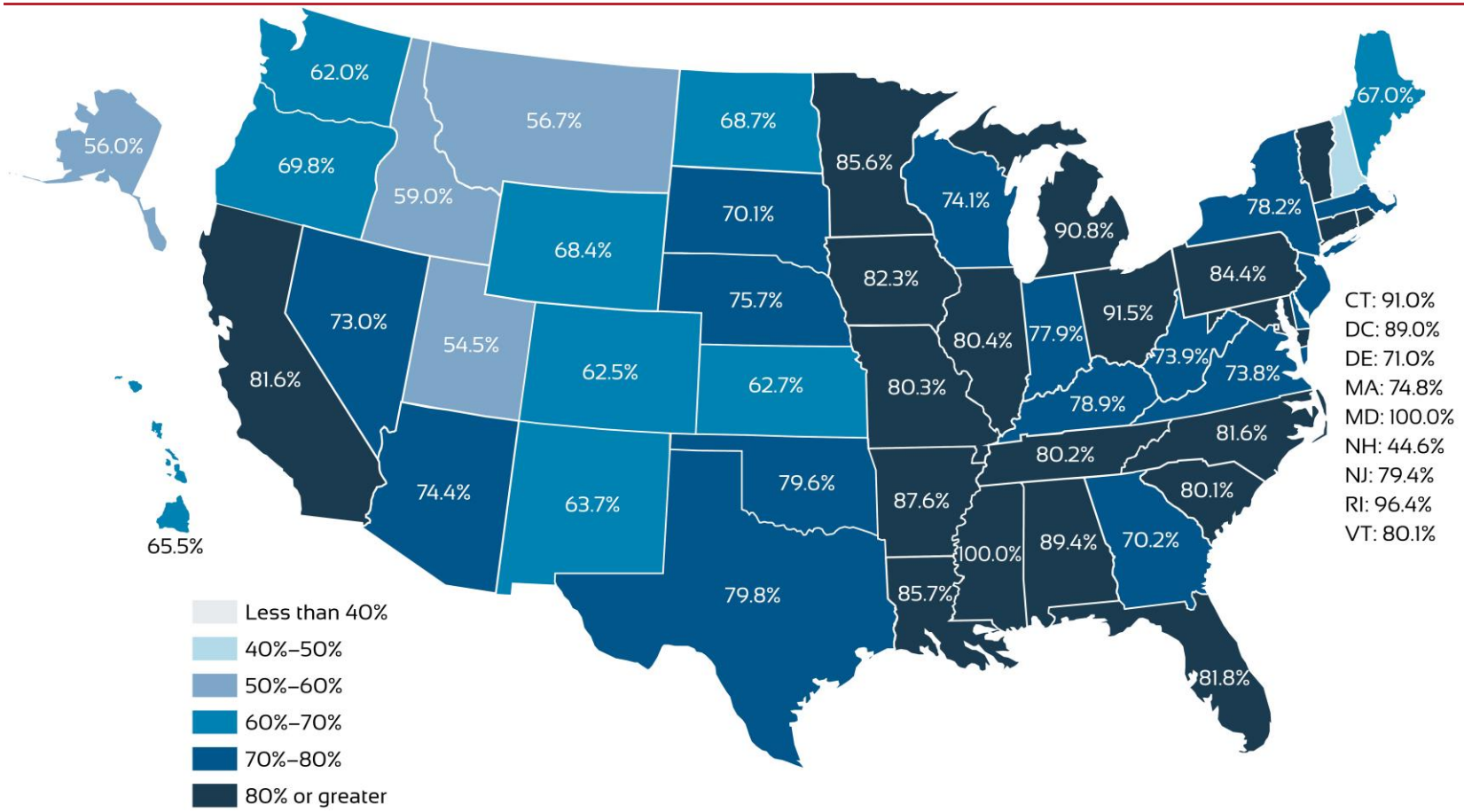
State and regional eligibility estimates and participant data include individuals in ITOs who were eligible for WIC.

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

The estimated coverage rates exceeded 100 percent for infants in Maryland and Mississippi. This is likely a result of sampling variability in the CPS-ASEC survey data used to estimate the number of eligible individuals in those States (denominator of the rate). The lower-bound range of the 95-percent confidence interval surrounding these rates is below 100 percent. See chapter 6 for more information on measures of statistical uncertainty for the eligibility estimates.

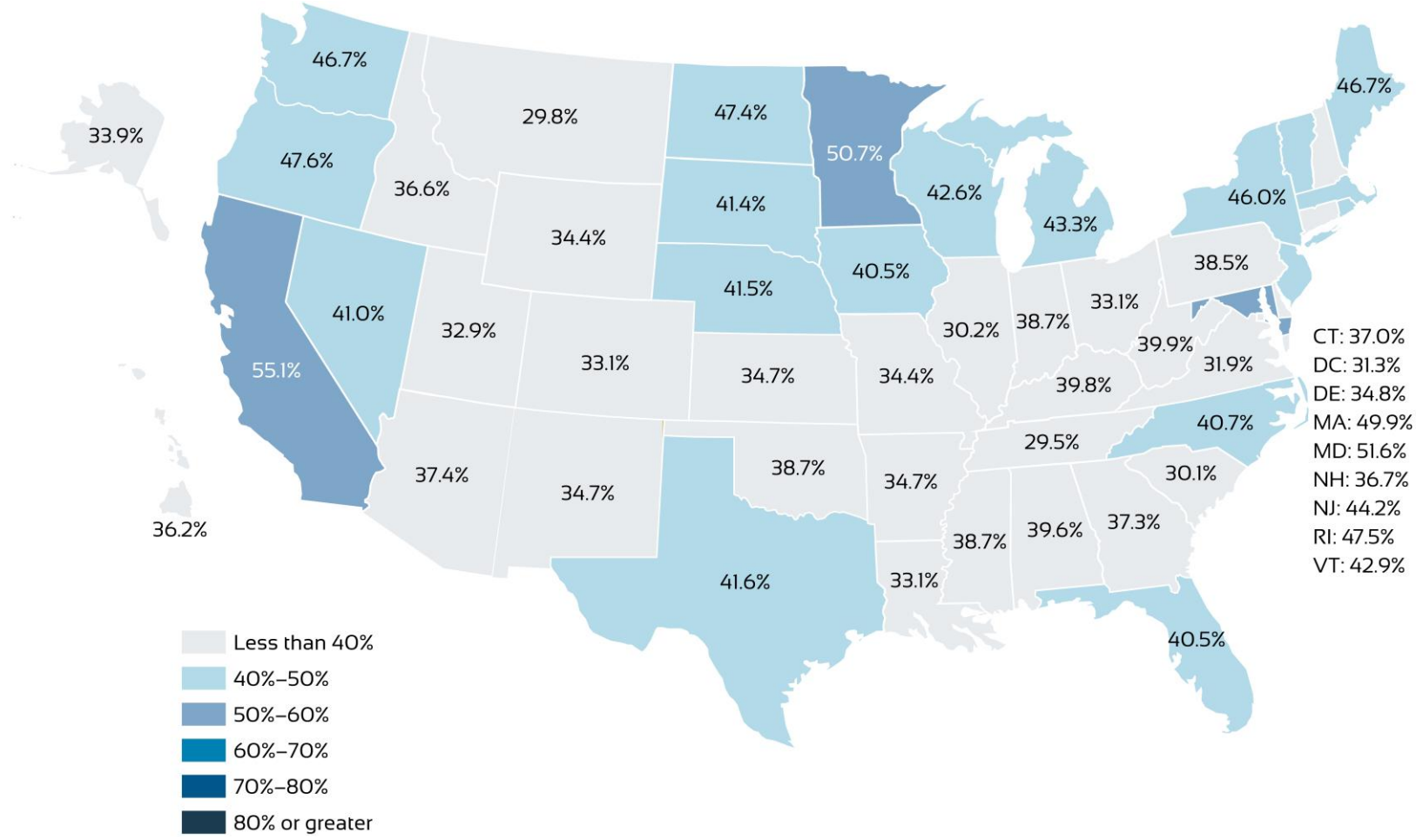
Sources: IPUMS-USA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c; Thorn et al., 2018; unpublished internal WIC administrative data

Figure 4.5. WIC Coverage Rate for Infants by State: CY 2017
National Coverage Rate for Infants: 79.3 Percent



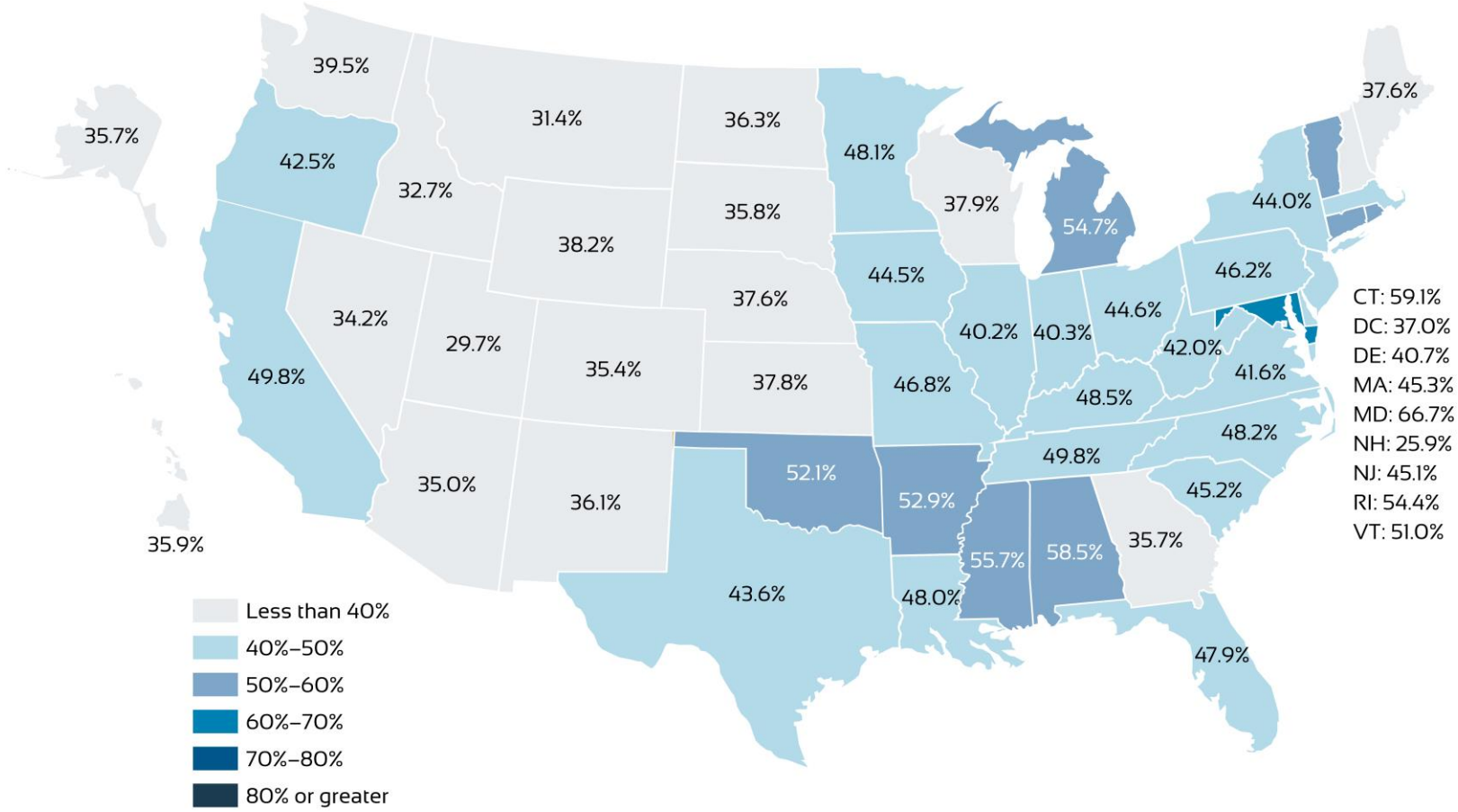
Note
The estimated coverage rates exceeded 100 percent for infants in Maryland and Mississippi. This is likely a result of sampling variability in the CPS-ASEC survey data used to estimate the number of eligible individuals in those States (denominator of the rate). The lower-bound range of the 95-percent confidence interval surrounding these rates is below 100 percent. See chapter 6 for more information on measures of statistical uncertainty for the eligibility estimates.
Sources: IPUMS-USA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

Figure 4.6. WIC Coverage Rate for Children Aged 1–4 by State: CY 2017
National Coverage Rate for Children: 41.8 Percent



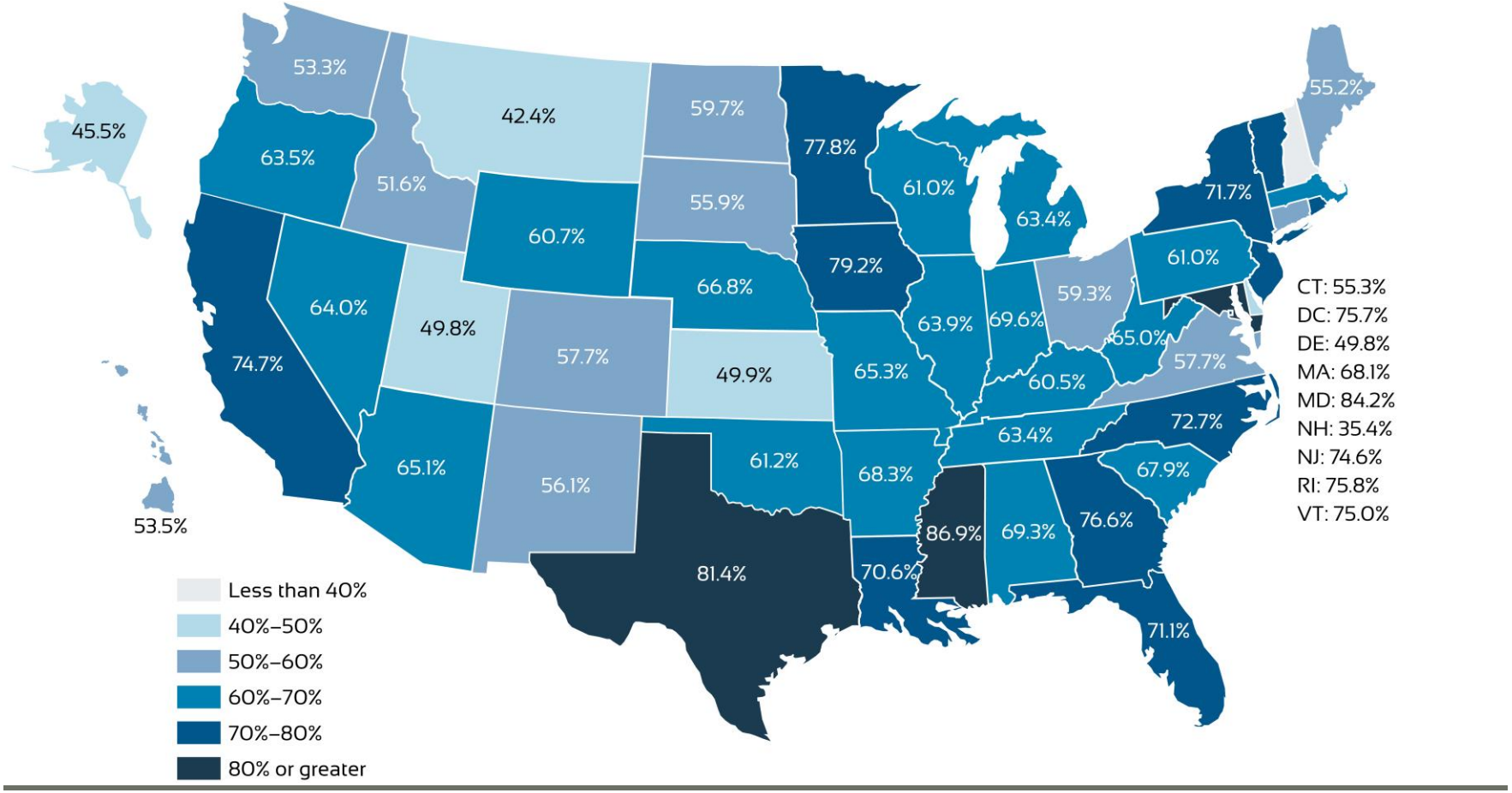
Sources: IPUMS-USA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

Figure 4.7. WIC Coverage Rate for Pregnant Women by State: CY 2017
National Coverage Rate for Pregnant Women: 45.3 Percent



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

Figure 4.8. WIC Coverage Rate for Postpartum Women by State: CY 2017
National Coverage Rate for Postpartum Women: 68.9 Percent



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

Table 4.7. State-Level WIC Coverage Rates by Race and Ethnicity: CY 2017

State	All Races	White-Only Non-Hispanic	Black-Only and Other Non-Hispanic[a]	Hispanic
Alabama	52.6	43.0	57.9	81.7
Alaska	39.0	28.0	48.6	41.3
Arizona	45.9	38.1	50.5	48.1
Arkansas	48.7	49.6	46.3	50.0
California	61.1	35.0	58.0	68.1
Colorado	40.7	31.2	40.2	50.0
Connecticut	48.6	31.9	53.1	59.1
Delaware	43.4	34.7	46.2	51.1
District of Columbia	45.7	16.5	44.3	58.2
Florida	50.9	38.8	56.3	56.9
Georgia	46.5	41.9	49.6	46.4
Hawaii	43.1	36.3	45.6	39.5
Idaho	41.8	38.0	51.3	48.7
Illinois	41.8	33.5	41.8	51.9
Indiana	48.3	42.6	55.9	62.4
Iowa	50.8	45.9	50.1	74.6
Kansas	41.2	36.5	41.3	49.8
Kentucky	49.3	51.4	41.8	51.4
Louisiana	46.9	42.1	49.4	53.4
Maine	50.2	52.2	48.5	29.9
Maryland	64.3	47.0	69.4	70.7
Massachusetts	55.5	47.2	53.5	65.8
Michigan	53.4	46.0	63.4	65.2
Minnesota	58.8	45.2	72.4	77.0
Mississippi	54.7	49.7	57.0	61.8
Missouri	46.2	45.6	46.3	50.9
Montana	35.6	32.2	48.5	29.9
Nebraska	49.2	40.1	48.7	66.7
Nevada	48.3	49.4	43.9	50.1
New Hampshire	36.7	35.2	40.9	43.0
New Jersey	52.9	36.8	51.2	65.0
New Mexico	42.1	30.4	34.0	47.7
New York	53.9	41.9	63.4	57.7
North Carolina	51.3	45.1	50.7	62.0
North Dakota	51.4	37.8	74.5	63.5
Ohio	46.8	42.7	55.9	43.1
Oklahoma	48.9	42.8	53.1	55.0
Oregon	52.4	50.6	42.9	59.7
Pennsylvania	48.4	41.1	55.9	58.6

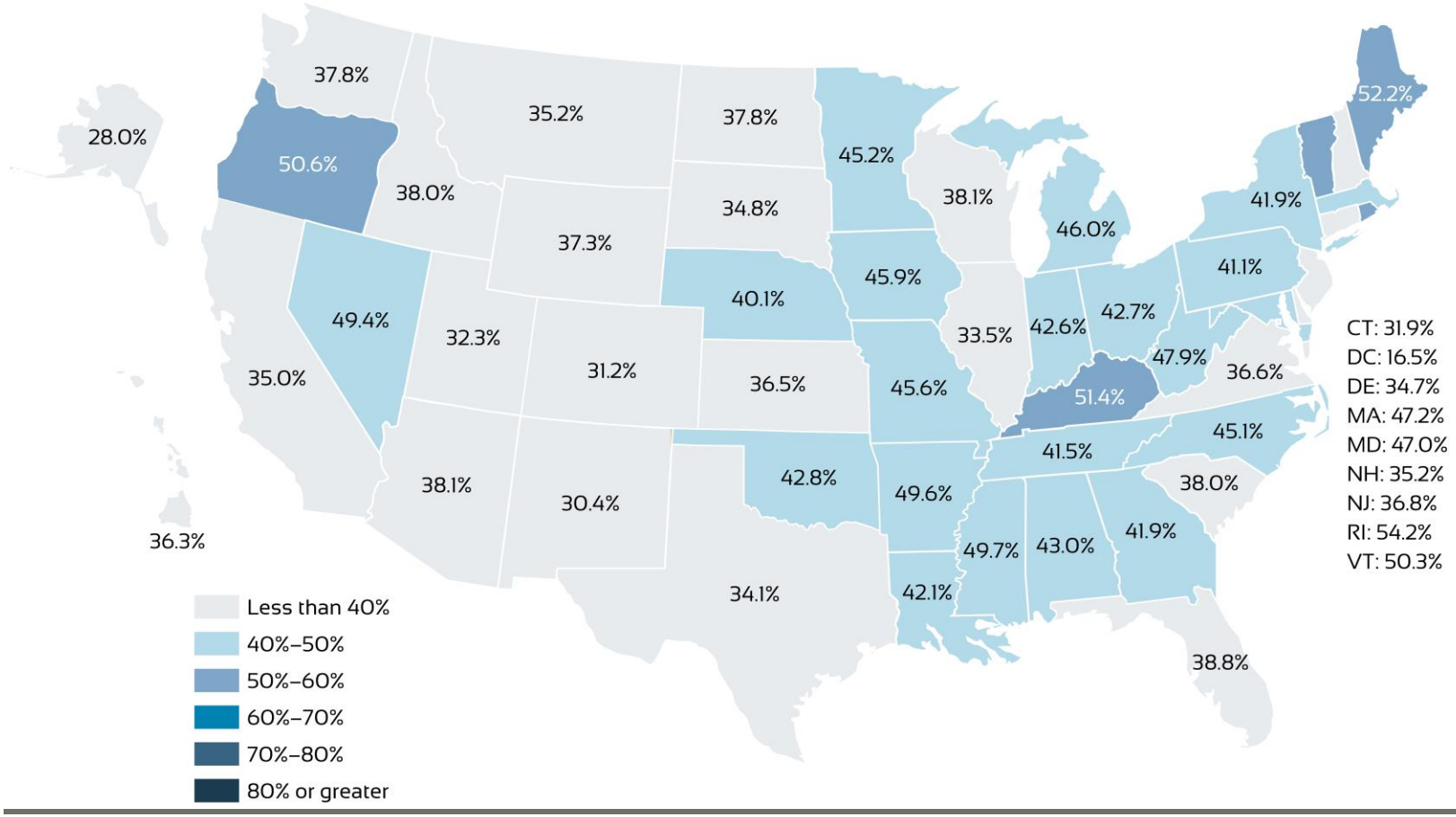
State	All Races	White-Only Non-Hispanic	Black-Only and Other Non-Hispanic[a]	Hispanic
Rhode Island	58.2	54.2	67.4	57.2
South Carolina	43.2	38.0	47.5	44.9
South Dakota	47.2	34.8	73.3	35.4
Tennessee	42.9	41.5	43.1	48.4
Texas	52.7	34.1	50.4	59.1
Utah	38.1	32.3	31.3	54.1
Vermont	51.3	50.3	64.7	39.8
Virginia	42.2	36.6	43.4	50.4
Washington	49.3	37.8	51.4	67.4
West Virginia	48.7	47.9	50.7	71.1
Wisconsin	49.2	38.1	63.4	60.9
Wyoming	42.6	37.3	45.0	65.1
Total	**51.0**	**40.9**	**53.2**	**60.4**

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.

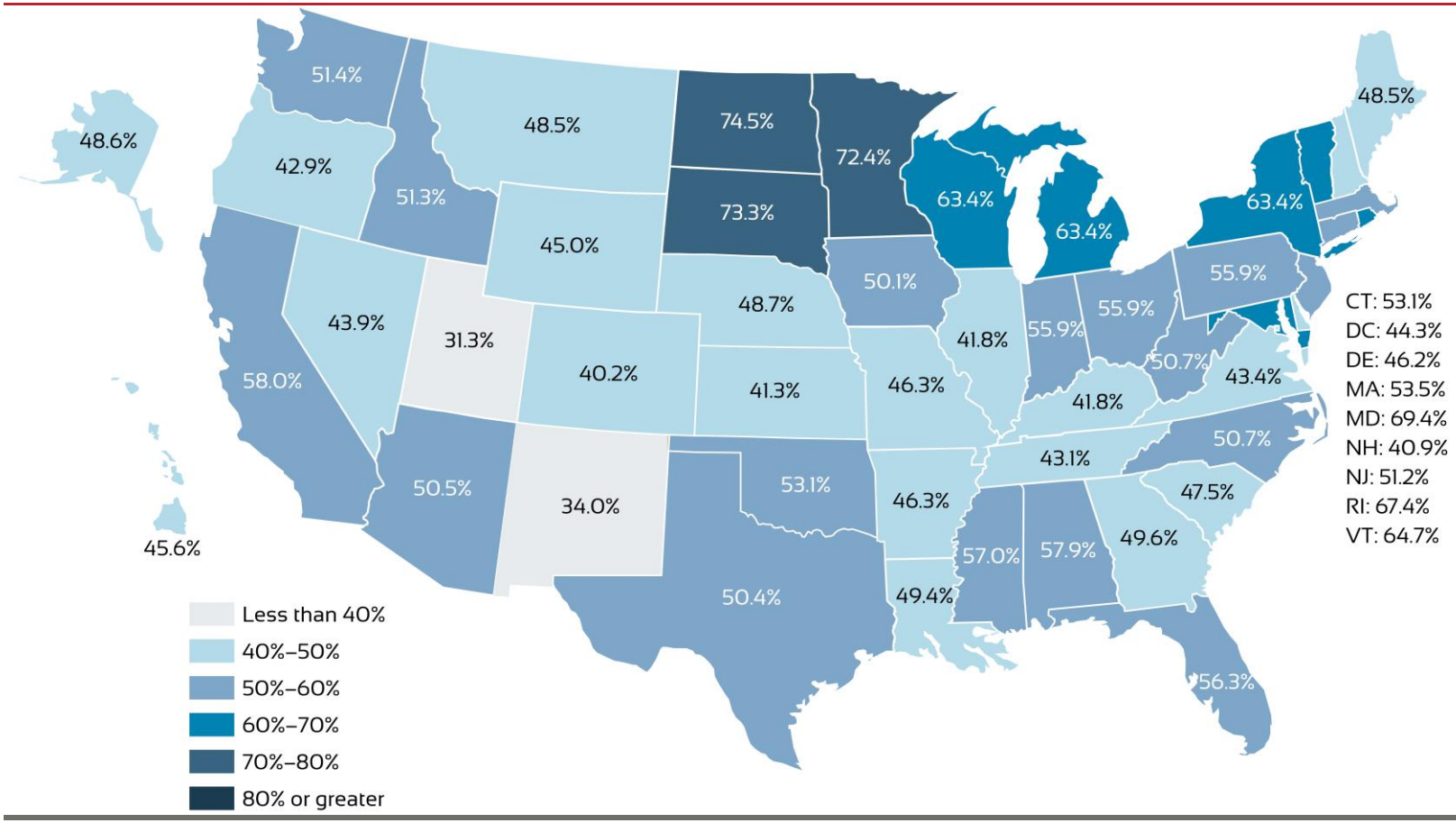
Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; unpublished internal WIC administrative data

Figure 4.9. WIC Coverage Rate for White-Only Non-Hispanic Individuals by State: CY 2017
National Coverage Rate for White-Only Non-Hispanic Individuals: 40.9 Percent



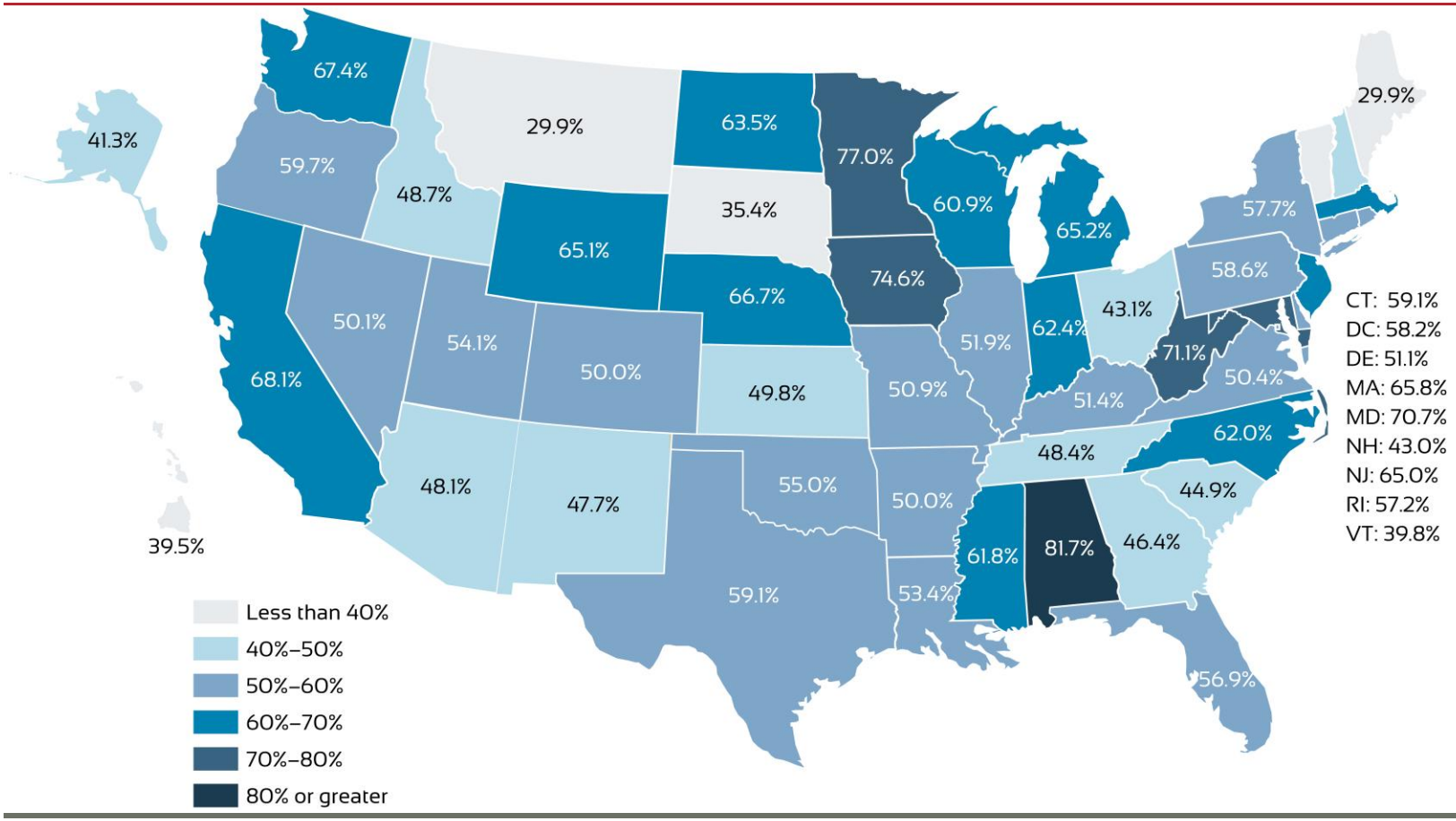
Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; unpublished internal WIC administrative data

Figure 4.10. WIC Coverage Rate for Black-Only and Other Non-Hispanic Individuals by State: CY 2017
National Coverage Rate for Black-Only and Other Non-Hispanic Individuals: 53.2 Percent



Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; unpublished internal WIC administrative data

Figure 4.11. WIC Coverage Rate for Hispanic Individuals by State: CY 2017
National Coverage Rate for Hispanic Individuals: 60.4 Percent



Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; unpublished internal WIC administrative data

C. Changes in WIC Coverage Rates: CY 2015–CY 2017

The national WIC coverage rate decreased by 2 percentage points between 2015 and 2017 to 51 percent.[44] The decline in coverage rates during this time period was mainly the result of a decrease in WIC participation than in the number of individuals eligible for WIC. The number of WIC participants declined by 10 percent between 2015 and 2017, whereas the number of individuals eligible for WIC decreased by only 7 percent (see table 4.8).

Coverage rates declined the most for children and postpartum breastfeeding women (2 percentage points; see figure 4.12), followed by pregnant women (1 percentage point). Coverage rates increased for postpartum non-breastfeeding women and infants (7 and 2 percentage points, respectively).

The change in coverage rates by region varied between 2015 and 2017 as shown in table 4.9. The rates ranged from a decrease of 4 percentage points in the Western region to slight increases in the Northeast and Mountain Plains regions (less than 1 percentage point for each).[45] Across most regions, coverage rates tended to increase the most for infants and decrease the most for children.

Table 4.8. Change in WIC Coverage Rate by Participant Category: CY 2015–CY 2017

Participant Category	2015	2016	2017	Percent Change 2015–2017[a]
Total Eligible				
Infants	2,506,686	2,159,041	2,227,965	-11.1*
Children aged 1–4	9,268,848	8,907,712	8,859,001	-4.4*
Pregnant women	1,634,852	1,408,119	1,452,144	-11.2*
Postpartum women	1,652,116	1,458,923	1,533,038	-7.2*
Postpartum breastfeeding women	1,034,333	949,592	1,028,863	-0.5
Postpartum non-breastfeeding women	617,783	509,331	504,175	-18.4*
Total	**15,062,503**	**13,933,795**	**14,072,148**	**-6.6***
Total Participants				
Infants	1,927,670	1,853,735	1,767,615	-8.3
Children aged 1–4	4,111,154	3,926,307	3,702,190	-9.9
Pregnant women	758,250	707,748	658,131	-13.2
Postpartum women	1,142,685	1,106,191	1,056,141	-7.6
Postpartum breastfeeding women	593,604	590,430	570,509	-3.9
Postpartum non-breastfeeding women	549,081	515,761	485,633	-11.6
Total	**7,939,758**	**7,593,981**	**7,184,078**	**-9.5**

[44] The 2017 estimates are compared with the 2015 estimates because of the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data for 2016. See chapter 3 for more information.
[45] The unrounded change in the coverage rate for the Western region is 4.468 percent, which rounds to 4 percentage points.

Participant Category	2015	2016	2017	Percent Change 2015–2017[a]
Coverage Rate				
Infants	76.9	85.9	79.3	2.4
Children aged 1–4	44.4	44.1	41.8	-2.6*
Pregnant women	46.4	50.3	45.3	-1.1
Postpartum women	69.2	75.8	68.9	-0.3
Postpartum breastfeeding women	57.4	62.2	55.5	-1.9
Postpartum non-breastfeeding women	88.9	100.0	96.3	7.4*
Total	**52.7**	**54.5**	**51.1**	**-1.7***

Notes

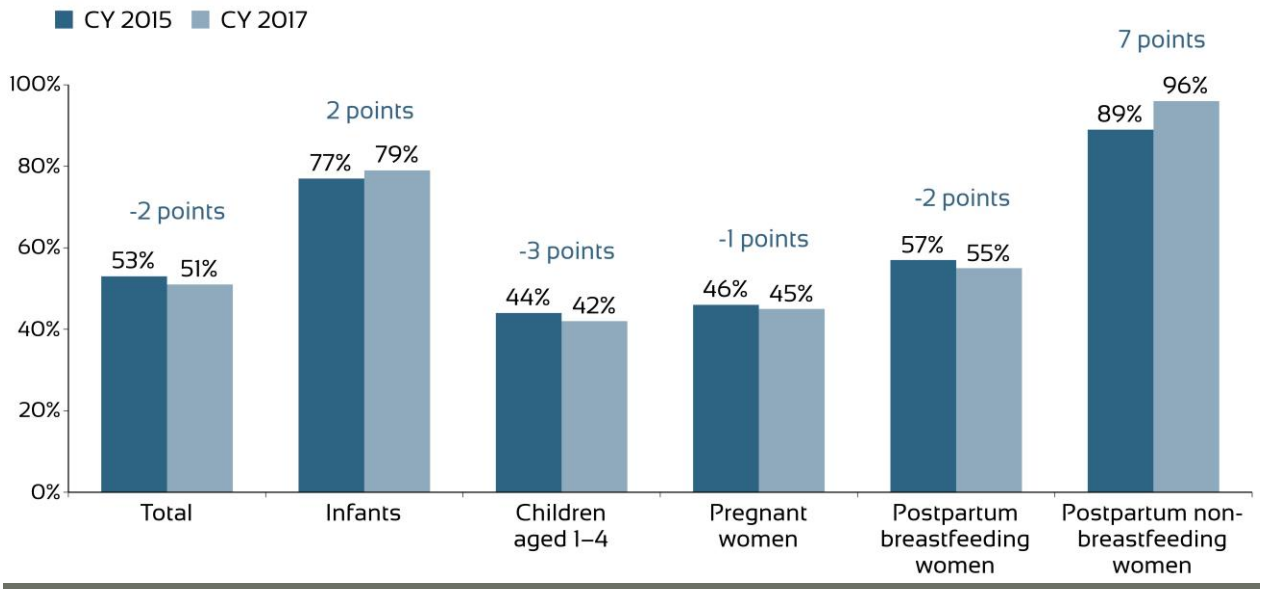
[a] This column displays the difference between coverage rates in 2015 and 2017 rather than the percentage change.

* Indicates a statistically significant difference between the 2015 and 2017 estimates of individuals eligible for WIC and the 2015 and 2017 estimates of WIC coverage rates at the 95-percent confidence level. The number of total WIC participants by category is not subject to statistical uncertainty because it is based on WIC administrative data, which is a census of WIC participants receiving benefits; no sampling is involved. The statistical significance testing was conducted on the 2015–2017 change in WIC eligibility based on the CPS-ASEC data, which included data only for States. It did not include data for Puerto Rico or the other U.S. territories served by WIC.

The 2017 estimates are compared with the 2015 estimates because of the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data for 2016. See chapter 3 for more information.

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

Figure 4.12. Change in WIC Coverage Rate by Participant Category: CY 2015–CY 2017



Note

The 2017 estimates are compared with the 2015 estimates because of the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data for 2016. See chapter 3 for more information.

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

Table 4.9. WIC Coverage Rates by FNS Region and Participant Category: CY 2015–CY 2017

FNS Region	Infants	Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Coverage Rate 2017					
Northeast	77.6	45.7	44.9	68.4	53.2
Mid-Atlantic	82.9	44.6	49.3	67.2	53.4
Southeast	81.1	37.8	47.2	71.1	49.0
Midwest	84.6	37.7	44.6	64.6	48.5
Southwest	80.1	39.5	45.1	76.4	50.8
Mountain Plains	69.1	35.6	38.7	59.5	43.8
Western	76.0	49.9	44.7	68.2	55.6
Total	**79.3**	**41.8**	**45.3**	**68.9**	**51.1**
Coverage Rate 2016					
Northeast	81.6	46.9	48.5	71.0	55.1
Mid-Atlantic	90.3	47.4	54.6	73.7	57.4
Southeast	83.4	39.7	48.9	76.1	51.2
Midwest	89.0	40.0	48.3	68.0	51.3
Southwest	90.1	41.7	52.1	90.4	55.4
Mountain Plains	73.7	38.2	41.5	62.8	47.0
Western	87.0	52.3	53.5	78.3	60.5
Total	**85.9**	**44.1**	**50.3**	**75.8**	**54.5**
Coverage Rate 2015					
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**
Change in Coverage Rate for 2017 Versus 2015 (Difference)					
Northeast	2.7	-0.4	-0.3	3.8	0.4
Mid-Atlantic	3.9	-2.6*	-0.1*	2.2	-1.2*
Southeast	4.9	-2.2*	2.2	0.3	-0.9
Midwest	7.6	-2.6*	0.3	1.5	-0.7
Southwest	-0.2	-2.0*	-3.0	-5.5	-2.2*
Mountain Plains	4.6	-0.8	1.4	4.0	0.3
Western	-3.5	-4.6*	-5.9*	-3.6	-4.5*
Total	**2.4**	**-2.6***	**-1.1**	**-0.3**	**-1.7***

Notes

* Indicates a statistically significant difference between the 2015 and 2017 estimates of WIC coverage rates at the 95-percent confidence level. The statistical significance testing was conducted based on the CPS-ASEC data, which included data only for States. It did not include data for Puerto Rico or the other U.S. territories served by WIC.

The 2017 estimates are compared with the 2015 estimates because of the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data for 2016. See chapter 3 for more information.

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

D. Trends in WIC Coverage Rates: CY 2005–CY 2017

WIC coverage rates varied between 2005 and 2017. Across the 12-year period, the coverage rate was highest in 2011 (63 percent[46]) and lowest in 2017 (51 percent; see table 4.10). Overall, rates have declined since 2011.[47]

The relative magnitude of coverage rates by participant category was consistent from 2005 to 2017 (see table 4.11). For example, throughout that period, coverage rates were consistently highest for infants, followed by those for 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 2005 through 2017. The Western region consistently had the highest rates of coverage during this period (primarily because of the high rates in California), and the Mountain Plains region had the lowest. See appendix C in volume II of this report for trends in coverage rates by region from 2005 through 2017 for each participant category.

Table 4.10. WIC Coverage Rates: CY 2005–CY 2017

Year	Number Eligible	Number Participating	Coverage Rate
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
2016	13,933,795	7,593,981	54.5
2017	14,072,148	7,184,078	51.1

Note
Estimates for 2016 should be interpreted with caution given the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data. See chapter 3 for more information.
Sources: IPUMS-USA, n.d.; NBER, n.d.b; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

[46] The unrounded coverage rate is 63.451 percent for 2011, which rounds to 63 percent.
[47] The increase in the 2016 estimates was likely the result of the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data.

Table 4.11. WIC Coverage Rates by Participant Category: CY 2005–CY 2017

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 Non-Breastfeeding Women	All 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	100.0	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
2016	54.5	85.9	59.2	47.4	42.1	26.5	44.1	50.3	62.2	100.0	75.8
2017	51.1	79.3	57.5	43.8	40.0	25.0	41.8	45.3	55.5	96.3	68.9

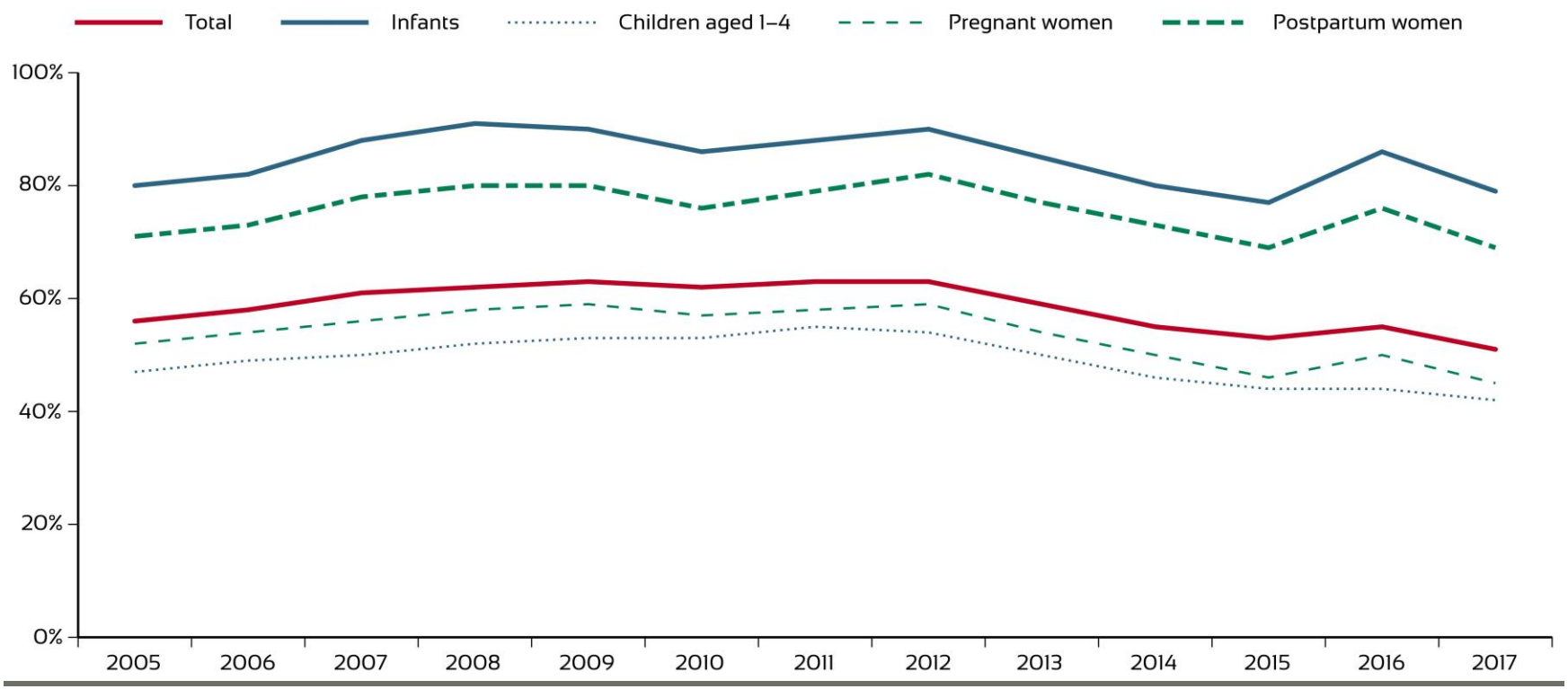
Notes

Estimates for 2016 should be interpreted with caution given the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data. See chapter 3 for more information.

The estimated coverage rates for postpartum non-breastfeeding rates exceeded 100 percent in 2012 and 2016. This is likely a result of sampling variability in the CPS-ASEC survey data used to estimate the number of postpartum women in those States (denominator of the rate). The lower-bound range of the 95-percent confidence interval surrounding these rates is below 100 percent. See chapter 6 for more information on measures of statistical uncertainty for the eligibility estimates.

Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

Figure 4.13. Trends in WIC Coverage Rates by Participant Category: CY 2005–CY 2017

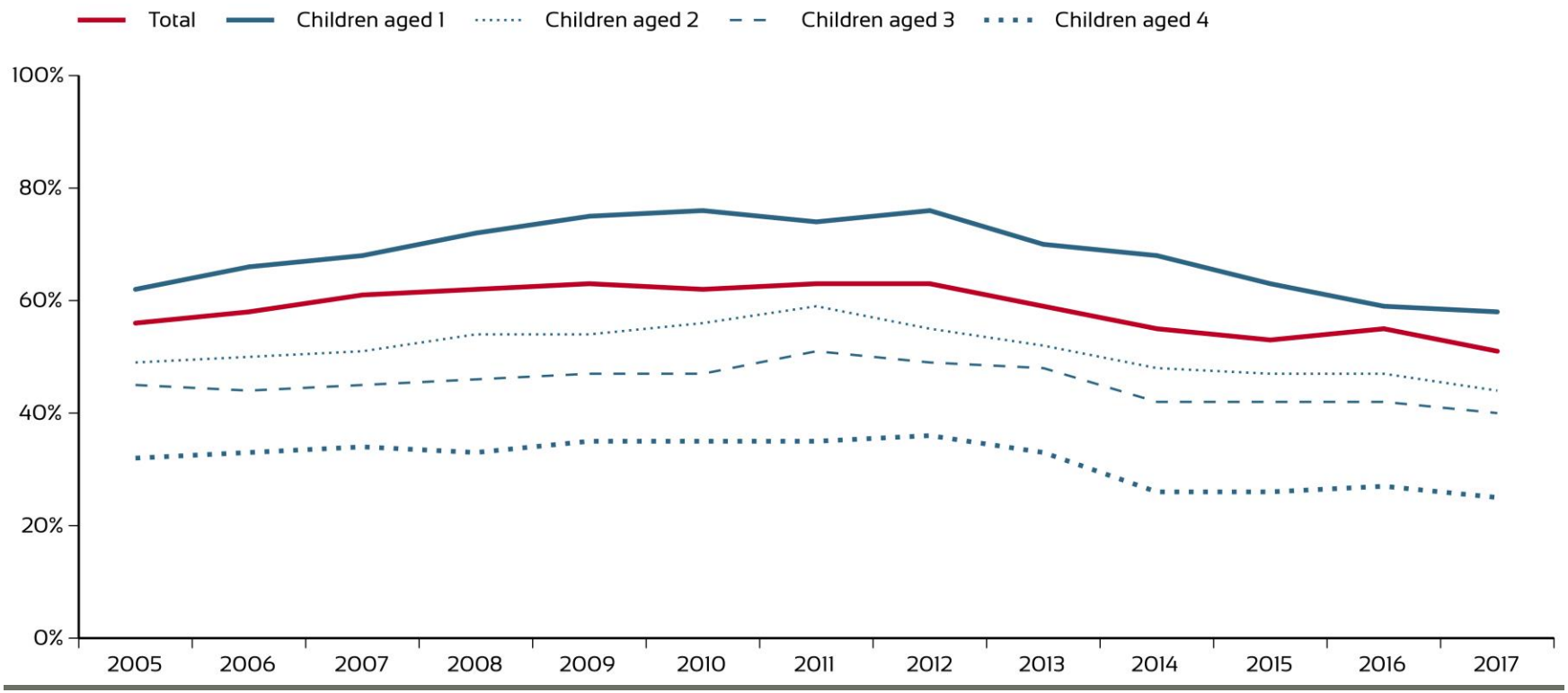


Note

Estimates for 2016 should be interpreted with caution given the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data. See chapter 3 for more information.

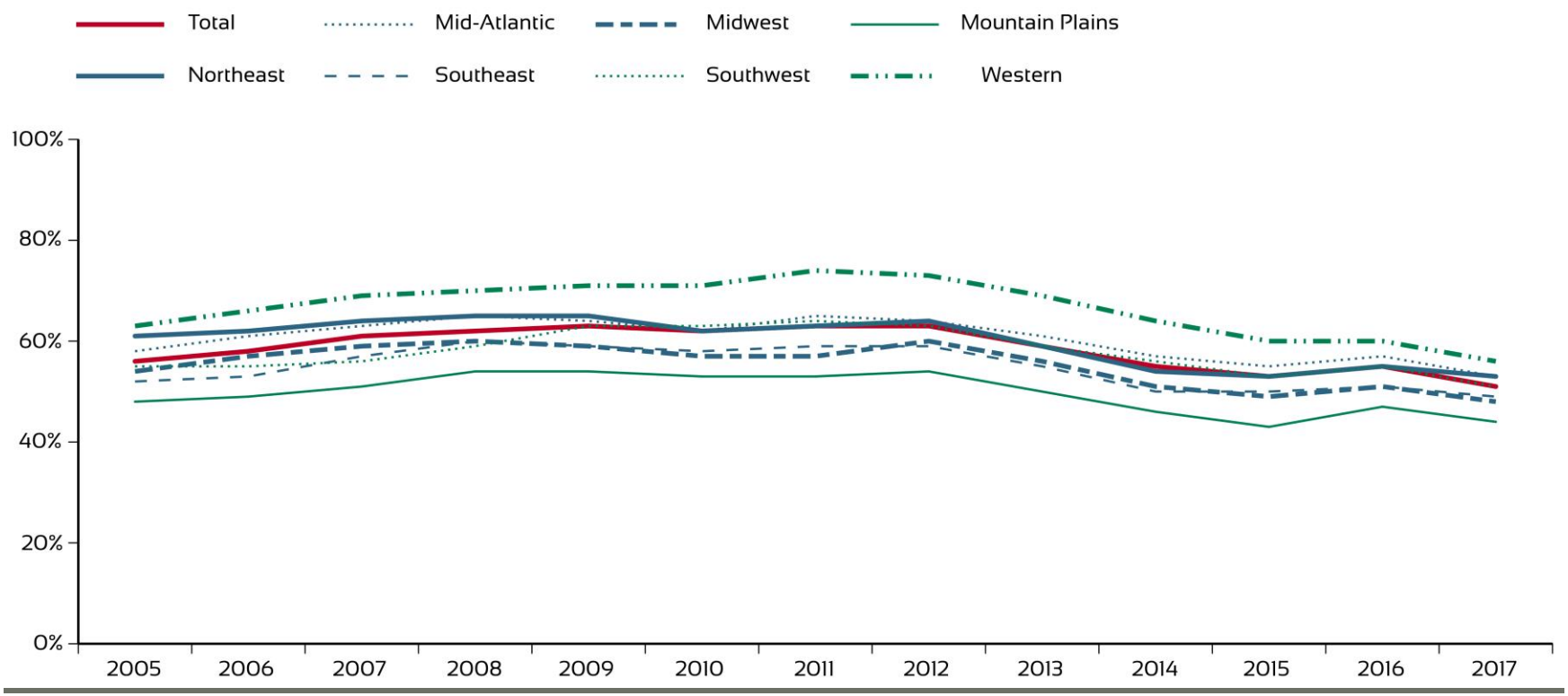
Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

Figure 4.14. Trends in WIC Coverage Rates for Children by Year of Age: CY 2005–CY 2017



Note
Estimates for 2016 should be interpreted with caution given the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data. See chapter 3 for more information.
Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

Figure 4.15. Trends in WIC Coverage Rates by FNS Region: CY 2005–CY 2017



Note

Estimates for 2016 should be interpreted with caution given the single-year anomaly that resulted from the small sample sizes in the CPS-ASEC data. See chapter 3 for more information.

Sources: IPUMS-USA, n.d.; NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

Chapter 5. WIC Participation Rates for CY 2017

This chapter presents participation rates for women, infants, and children in 2017. The participation rates were calculated as the percentages of the total population of women, infants, and children who received WIC benefits in an average month in 2017. In contrast to coverage rates, participation rates are calculated as the ratio of the number of WIC participants to the number of individuals in the population, regardless of income level, adjunctive eligibility, or nutritional risk. Participation rates are useful for understanding the overall reach of WIC across the total population.

Section A presents 2017 national WIC participation rates by participant category, and section B presents State-level participation rates.

A. National-Level WIC Participation Rates

Forty-five percent of all infants and 23 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 for 1-year-olds (33 percent) and lowest for 4-year-olds (13 percent). Slightly more postpartum women (27 percent) than pregnant women (22 percent) received WIC benefits. The participation rate was higher for postpartum non-breastfeeding women (30 percent) than postpartum breastfeeding women (24 percent).

Table 5.1. WIC Participation Rates by Participant Category: CY 2017

Participant Category	Number Participating	Total Population	Participation Rate
Infants	1,767,615	3,959,629	44.6
Children aged 1–4	3,702,190	16,133,557	22.9
Children aged 1	1,294,737	3,983,480	32.5
Children aged 2	992,656	4,046,080	24.5
Children aged 3	878,116	4,074,089	21.6
Children aged 4	536,682	4,029,908	13.3
Pregnant women	658,131	2,953,892	22.3
Postpartum women	1,056,141	3,939,025	26.8
Breastfeeding women	570,509	2,338,744	24.4
Non-breastfeeding women	485,633	1,600,281	30.3
Total	**7,184,078**	**26,986,104**	**26.6**

Note
WIC administrative data on participating children by year of age were not available. The number of participating children by year of age in this table are based on the distribution of children who were enrolled in WIC in 2016 according to WIC PC2016 data.
Sources: NBER, n.d.b; Thorn et al., 2018; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

B. State- and Regional-Level WIC Participation Rates

Participation rates varied considerably among States. Rates ranged from a low of 15 percent in New Hampshire to a high of 34 percent in Mississippi in comparison with the national average of 27 percent (see table 5.2). Seven States had participation rates of less than 20 percent (Colorado, Connecticut, New Hampshire, North Dakota, Utah, Virginia, and Wyoming), and four States had participation rates of 30 percent or greater (Alabama, California, Florida, and Mississippi). Puerto Rico had a higher participation rate (68 percent) than any State. The Western region had the highest participation rate (30 percent), and the Mountain Plains region had the lowest (20 percent).

Table 5.2. WIC Participation Rates by State and FNS Region: CY 2017

State	Number Participating	Total Population	Participation Rate
Alabama	122,657	394,515	31.1*
Alaska	17,862	72,275	24.7
Arizona	152,280	584,296	26.1
Arkansas	76,048	256,909	29.6*
California	1,057,320	3,326,273	31.8*
Colorado	84,911	452,876	18.7*
Connecticut	47,771	244,759	19.5*
Delaware	17,186	74,095	23.2*
District of Columbia	13,277	62,925	21.1*
Florida	462,817	1,534,847	30.2*
Georgia	232,429	892,253	26.1
Hawaii	26,328	117,229	22.5*
Idaho	35,771	155,708	23.0*
Illinois	208,451	1,037,882	20.1*
Indiana	144,140	559,470	25.8
Iowa	61,745	263,094	23.5*
Kansas	53,126	258,055	20.6*
Kentucky	107,041	368,113	29.1*
Louisiana	118,470	422,264	28.1*
Maine	19,048	85,548	22.3*
Maryland	131,490	494,846	26.6
Massachusetts	111,809	482,309	23.2*
Michigan	221,742	763,383	29.0*
Minnesota	110,004	471,649	23.3*
Mississippi	84,724	252,826	33.5*
Missouri	118,363	499,348	23.7*
Montana	17,123	84,025	20.4*
Nebraska	37,108	177,417	20.9*
Nevada	65,665	249,399	26.3
New Hampshire	12,878	85,677	15.0*
New Jersey	146,735	696,719	21.1*

State	Number Participating	Total Population	Participation Rate
New Mexico	49,392	172,218	28.7*
New York	430,658	1,567,344	27.5*
North Carolina	228,903	819,209	27.9*
North Dakota	12,656	72,257	17.5*
Ohio	218,513	930,458	23.5*
Oklahoma	104,199	349,610	29.8*
Oregon	88,657	315,756	28.1*
Pennsylvania	225,052	944,968	23.8*
Puerto Rico	133,910	195,770	68.4
Rhode Island	19,315	73,355	26.3
South Carolina	98,059	394,943	24.8*
South Dakota	18,165	82,274	22.1*
Tennessee	134,149	547,485	24.5*
Texas	806,672	2,750,259	29.3*
Utah	52,742	342,281	15.4*
Vermont	11,482	39,993	28.7
Virginia	119,876	686,413	17.5*
Washington	153,762	610,918	25.2*
West Virginia	37,640	129,314	29.1*
Wisconsin	95,164	447,394	21.3*
Wyoming	9,905	49,711	19.9*
FNS Region			
Northeast	652,961	2,578,984	25.3*
Mid-Atlantic	828,615	3,294,381	25.2*
Southeast	1,470,778	5,204,190	28.3*
Midwest	998,015	4,210,236	23.7*
Southwest	1,154,780	3,951,260	29.2*
Mountain Plains	465,845	2,281,338	20.4*
Western	1,613,084	5,465,714	29.5*
Total	**7,184,078**	**26,986,104**	**26.6**

Notes

* Indicates a statistically significant difference between the State or regional participation rate and the national participation rate at the 95-percent confidence level. The statistical significance testing was conducted based on the CPS-ASEC data, which included data only for States. It did not include data for Puerto Rico or the other U.S. territories served by WIC; therefore, no statistical testing was done to compare the provided participation rate for Puerto Rico to that of the national participation rate.
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.b; U.S. Census Bureau, n.d.c; unpublished internal WIC administrative data

Chapter 6. Measures of Precision for 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.b) 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 non-sampling 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 2017 national-, regional-, and State-level estimates of eligibility for WIC.[48] The standard errors for the national-level estimates were derived using the replicate weight methodology described in appendix E. The standard errors for the State-level estimates were also derived using the replicate weight methodology. Tables 6.1 and 6.2 present these standard errors as well as the coefficients of variation. This measure is the ratio of the standard error 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 coefficients of variation for the 2017 national eligibility estimates were higher for infants, pregnant women, and postpartum women (2.9 percent for each) than children (1.4 percent), reflecting the larger sample size for children (see table 6.1).

Table 6.1. Standard Errors and Coefficients of Variation for Estimated Number of Individuals Eligible for WIC by FNS Region and Participant Category: CY 2017

Region	Infants	Children Aged 1–4	Pregnant Women	Postpartum Women	Total
			Number Eligible		
Northeast	195,412	767,502	127,332	137,313	1,227,558
Mid-Atlantic	211,425	882,307	137,792	145,232	1,376,757
Southeast	470,069	1,910,663	306,490	312,548	2,999,772
Midwest	319,036	1,319,286	207,727	213,145	2,059,194
Southwest	369,969	1,406,725	241,338	253,095	2,271,127
Mountain Plains	167,976	670,005	109,322	116,275	1,063,577
Western	461,422	1,777,361	300,823	332,962	2,872,569
Total	**2,195,309**	**8,733,851**	**1,430,824**	**1,510,570**	**13,870,554**

[48] 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.c). These estimates were not subject to sampling variability.

Region	Infants	Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Standard Error					
Northeast	7,823	14,090	5,096	5,502	23,094
Mid-Atlantic	9,092	16,942	5,926	6,248	26,400
Southeast	15,937	29,367	10,390	10,592	46,547
Midwest	11,929	21,155	7,768	7,966	34,258
Southwest	12,765	22,920	8,326	8,678	35,802
Mountain Plains	6,874	13,536	4,473	4,726	21,280
Western	17,323	27,594	11,291	12,388	47,422
Total	**64,497**	**121,801**	**42,034**	**44,114**	**195,515**
Coefficient of Variation (Percent)					
Northeast	4.0	1.8	4.0	4.0	1.9
Mid-Atlantic	4.3	1.9	4.3	4.3	1.9
Southeast	3.4	1.5	3.4	3.4	1.6
Midwest	3.7	1.6	3.7	3.7	1.7
Southwest	3.5	1.6	3.5	3.4	1.6
Mountain Plains	4.1	2.0	4.1	4.1	2.0
Western	3.8	1.6	3.8	3.7	1.7
Total	**2.9**	**1.4**	**2.9**	**2.9**	**1.4**

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

At the State level, the precision of the estimates was considerably lower than at the national level, except for the four largest States (California, Florida, New York, and Texas). For States, the coefficient of variation ranged from 11.8 percent in Wyoming to 1.7 percent in Texas. Given the large range of the coefficients of variation, caution should be exercised when using the State estimates, especially for small States. At the regional level, however, the relative precision of the estimates was quite high.

Table 6.2. Standard Errors for Estimated Number of Individuals Eligible for WIC by State and FNS Region: CY 2017

State	Number Eligible	Standard Error	Coefficient of Variation (Percent)
Alabama	233,113	6,652	2.9
Alaska	45,746	3,825	8.4
Arizona	331,674	8,294	2.5
Arkansas	156,252	5,644	3.6
California	1,731,574	30,940	1.8
Colorado	208,724	7,119	3.4
Connecticut	98,290	4,965	5.1
Delaware	39,560	3,037	7.7
District of Columbia	29,059	2,225	7.7
Florida	908,771	17,504	1.9

State	Number Eligible	Standard Error	Coefficient of Variation (Percent)
Georgia	500,128	11,622	2.3
Hawaii	61,106	4,346	7.1
Idaho	85,677	4,628	5.4
Illinois	498,136	12,202	2.5
Indiana	298,343	8,788	2.9
Iowa	121,618	5,015	4.1
Kansas	128,825	5,218	4.1
Kentucky	216,964	7,427	3.4
Louisiana	252,345	8,043	3.2
Maine	37,944	2,693	7.1
Maryland	204,479	7,041	3.4
Massachusetts	201,490	8,026	4.0
Michigan	415,002	10,902	2.6
Minnesota	186,988	8,001	4.3
Mississippi	155,003	5,420	3.5
Missouri	255,988	7,803	3.0
Montana	48,102	3,277	6.8
Nebraska	75,351	4,234	5.6
Nevada	135,926	5,376	4.0
New Hampshire	35,127	3,537	10.1
New Jersey	277,388	8,012	2.9
New Mexico	117,289	5,075	4.3
New York	799,111	16,571	2.1
North Carolina	445,957	10,637	2.4
North Dakota	24,631	2,538	10.3
Ohio	467,359	10,351	2.2
Oklahoma	213,200	6,466	3.0
Oregon	169,149	6,442	3.8
Pennsylvania	464,955	12,948	2.8
Rhode Island	33,206	2,138	6.4
South Carolina	227,089	6,473	2.9
South Dakota	38,491	2,617	6.8
Tennessee	312,747	7,891	2.5
Texas	1,532,041	25,831	1.7
Utah	138,611	6,264	4.5
Vermont	22,389	2,211	9.9
Virginia	284,062	9,239	3.3
Washington	311,716	9,528	3.1
West Virginia	77,252	3,771	4.9
Wisconsin	193,367	7,790	4.0
Wyoming	23,237	2,737	11.8

State	Number Eligible	Standard Error	Coefficient of Variation (Percent)
FNS Region			
Northeast	1,227,558	23,094	1.9
Mid-Atlantic	1,376,757	26,400	1.9
Southeast	2,999,772	46,547	1.6
Midwest	2,059,194	34,258	1.7
Southwest	2,271,127	35,802	1.6
Mountain Plains	1,063,577	21,280	2.0
Western	2,872,569	47,422	1.7
Total	**13,870,554**	**195,515**	**1.4**

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

The coefficients of variation were even larger for the estimated coverage rates for participant categories by State (see table 6.3). The coefficients of variation for infant coverage rates ranged from 3.7 percent (Texas) to 32.6 percent (Vermont). Similarly, the coefficients of variation for White-Only Non-Hispanics ranged from 3.7 percent (Ohio) to 40.4 percent (the District of Columbia; see table 6.4). Therefore, it is particularly important to use caution when examining State coverage rates by participant category and race and ethnicity, especially for small States.

The statistics can be used to estimate a confidence interval around the estimates of eligibility for WIC and coverage rates. For example, there is a 95-percent likelihood that the actual number of individuals eligible for WIC in 2017 (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 1.96 times the standard error) and that it is at most equal to the point estimate plus 1.96 times the standard error. As an illustration of the computation, consider the overall estimates of WIC eligibility for the Northeast (see table 6.1). The point estimate for individuals eligible for WIC in the Northeast in an average month of 2017 is 1,227,558. The standard error of that estimate is 23,094. There is a 95-percent likelihood that the true number falls within the range from (1,227,558 minus (1.96 × 23,094)) to (1,227,558 plus (1.96 × 23,094)), or from 1,182,294 to 1,272,822.

A similar method can be used to estimate a confidence interval around the estimates of WIC coverage rates. For example, there is a 95-percent likelihood that the actual coverage rates shown in table 4.6 in chapter 4 are equal to the point estimates shown plus or minus 1.96 times the standard error.[49]

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

As an illustration, consider the WIC coverage rate for individuals in Kansas (see table 4.6 in chapter 4). The point estimate for the coverage rate in Kansas is 41.2 percent. The standard error of that estimate (1.7) is calculated from the coefficient of variation (.412 x .041; see table 6.3). There is a 95-perent likelihood that the true coverage rate falls within the following range:

$41.2 \pm (1.96 * 1.7)$

$= 41.2 \pm 3.3$

95% confidence interval = (37.9%, 44.5%)

The confidence interval can also be directly estimated using the margin of error (MOE). The MOE is a measure of an estimate's variability and is calculated as the product of the significance level and standard error. 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 95-percent confidence interval. MOEs for a 95-percent confidence interval can be interpreted to mean there is a 95-percent chance that the true value—that is, the true coverage rate—falls within the estimated bounds determined by the MOE. In the Kansas example, the 95-percent confidence interval around the coverage rate is 41.2 percent minus/plus the MOE, which is 3.3. Thus, there is a 95-percent likelihood that the true coverage rate for Kansas falls between 41.2 minus/plus 3.3, or between 37.9 and 44.5 percent. Volume II of this report includes tables showing MOEs for all State-level coverage rates; in that volume, 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 an individual fully reports the kinds of benefits received); non-responses; and errors in coding, scoring, and processing the data—are called "non-sampling errors" and occur in cases when there is a complete enumeration of a target population. Non-response to the survey is one of the most common sources of non-sampling error because a characteristic being estimated may differ, on average, between respondents and non-respondents. Systematic errors are reduced by the survey methodology used, including careful wording of questionnaire items and well-designed procedures for data collection and data management. However, there are no formulas for assessing these types of non-sampling errors. Additional sources of error could include mismatches between concepts used for eligibility and those used for participation information, such as slight differences in definitions of WIC units or types of income.

Table 6.3. Coefficients of Variation of WIC Coverage Rates by State and Participant Category: CY 2017

State	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	All Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Alabama	7.6	6.7	7.6	7.1	7.1	2.8	7.6	7.6	2.9
Alaska	17.5	15.5	24.6	18.1	18.5	8.9	17.5	17.4	8.4
Arizona	6.1	6.2	6.1	5.9	6.0	2.5	6.1	6.1	2.5
Arkansas	8.4	8.0	9.1	7.6	8.9	3.7	8.4	8.4	3.6
California	4.1	3.3	3.4	3.3	3.4	1.7	4.1	4.0	1.8
Colorado	7.0	7.0	6.6	6.4	7.8	3.4	7.0	7.0	3.4
Connecticut	12.5	10.7	10.3	10.6	9.2	4.5	12.5	12.5	5.1
Delaware	17.9	20.4	15.1	21.4	16.7	7.6	17.9	18.0	7.7
District of Columbia	21.9	21.5	24.5	27.7	17.9	7.6	21.9	21.9	7.7
Florida	4.5	4.4	4.1	4.2	4.4	2.0	4.5	4.5	1.9
Georgia	5.5	5.3	5.2	5.0	5.1	2.5	5.5	5.5	2.3
Hawaii	16.0	14.2	12.3	14.5	11.9	5.0	16.0	16.0	7.1
Idaho	10.9	12.2	10.9	10.7	11.5	5.2	10.9	10.9	5.4
Illinois	5.4	5.6	5.3	4.7	5.9	2.4	5.4	5.4	2.5
Indiana	7.5	5.7	5.9	6.4	6.2	2.6	7.5	7.4	2.9
Iowa	9.6	8.9	8.6	9.4	8.8	4.4	9.6	9.6	4.1
Kansas	8.4	10.1	8.4	8.6	8.6	3.9	8.4	8.4	4.1
Kentucky	8.9	6.7	6.5	7.4	7.1	3.0	8.9	8.9	3.4
Louisiana	8.6	8.2	6.5	6.1	6.2	3.0	8.6	8.6	3.2
Maine	18.4	19.4	14.9	13.3	13.3	6.6	18.4	18.4	7.1
Maryland	8.0	7.6	8.0	8.3	6.7	3.7	8.0	8.0	3.4
Massachusetts	7.9	8.7	8.1	7.0	8.7	4.1	7.9	7.9	4.0
Michigan	6.3	5.8	5.5	5.6	5.7	2.7	6.3	6.3	2.6
Minnesota	9.9	9.3	9.6	9.2	8.5	4.9	10.0	10.0	4.3
Mississippi	9.2	8.3	7.3	8.1	8.8	3.1	9.2	9.2	3.5
Missouri	6.9	7.3	7.1	6.8	6.9	3.2	6.9	6.9	3.0
Montana	14.7	16.0	14.8	13.5	12.3	6.1	14.7	14.7	6.8

State	Infants	Children Aged 1	Children Aged 2	Children Aged 3	Children Aged 4	All Children Aged 1–4	Pregnant Women	Postpartum Women	Total
Nebraska	12.4	10.6	14.5	13.2	11.0	5.5	12.4	12.3	5.6
Nevada	9.4	9.1	9.2	8.8	7.7	4.1	9.4	9.4	4.0
New Hampshire	19.7	21.8	21.6	20.2	19.4	10.2	19.7	19.7	10.1
New Jersey	7.1	6.3	6.9	6.4	6.5	2.9	7.1	7.1	2.9
New Mexico	11.1	10.4	10.2	9.9	11.9	5.2	11.1	11.2	4.3
New York	4.8	3.8	4.2	4.0	4.0	1.9	4.8	4.8	2.1
North Carolina	6.0	5.9	5.4	6.1	5.7	2.7	6.0	6.0	2.4
North Dakota	20.8	28.4	15.9	25.0	22.0	11.0	20.8	20.8	10.3
Ohio	4.9	5.3	5.6	4.7	5.1	2.3	4.9	4.9	2.2
Oklahoma	6.6	9.6	7.0	8.8	7.3	3.4	6.6	6.6	3.0
Oregon	8.8	9.7	7.8	9.3	7.3	3.6	8.8	8.7	3.8
Pennsylvania	6.0	4.8	5.8	5.8	5.8	2.9	6.0	6.0	2.8
Rhode Island	16.4	17.9	14.9	17.3	17.2	7.8	16.5	16.4	6.4
South Carolina	7.1	7.3	6.6	7.3	7.2	2.6	7.1	7.1	2.9
South Dakota	20.0	17.4	20.5	15.2	23.1	8.3	20.0	19.9	6.8
Tennessee	6.5	6.7	6.7	6.2	7.0	3.0	6.5	6.5	2.5
Texas	3.7	3.5	3.6	3.7	3.5	1.8	3.7	3.7	1.7
Utah	9.1	8.3	9.4	9.1	8.7	4.4	9.1	9.0	4.5
Vermont	32.6	20.9	18.5	18.3	24.7	9.0	32.6	32.6	9.9
Virginia	7.7	7.4	6.5	6.3	6.5	3.1	7.7	7.7	3.3
Washington	6.2	5.9	6.6	5.5	6.7	2.8	6.2	6.1	3.1
West Virginia	10.0	11.6	14.4	12.7	9.2	5.7	10.0	9.9	4.9
Wisconsin	9.4	8.3	7.5	8.6	8.5	3.9	9.4	9.4	4.0
Wyoming	24.6	21.1	18.1	16.3	17.6	9.2	24.6	24.6	11.8
Total	**2.9**	**2.5**	**2.4**	**2.5**	**2.6**	**1.4**	**2.9**	**2.9**	**1.4**

Notes
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.
Estimates for Puerto Rico and the other U.S. territories are not included in the totals.
Sources: IPUMS-USA, n.d.; NBER, n.d.a, n.d.b; Thorn et al., 2018; unpublished internal WIC administrative data

Table 6.4. Coefficients of Variation of WIC Coverage Rates by State and by Race and Ethnicity: CY 2017

State	White-Only Non-Hispanic	Black-Only and Other Non-Hispanic[a]	Hispanic	Total
Alabama	5.1	4.4	10.9	2.9
Alaska	13.4	10.5	32.7	8.4
Arizona	5.3	6.1	3.4	2.5
Arkansas	5.1	6.3	9.6	3.6
California	4.1	3.6	2.4	1.8
Colorado	5.9	8.9	4.8	3.4
Connecticut	9.3	10.3	6.6	5.1
Delaware	16.6	9.9	12.7	7.7
District of Columbia	40.4	8.4	20.8	7.7
Florida	3.9	3.4	2.9	1.9
Georgia	4.4	3.5	4.4	2.3
Hawaii	21.7	7.5	11.3	7.1
Idaho	6.7	21.2	9.6	5.4
Illinois	4.4	4.2	3.9	2.5
Indiana	4.4	5.5	7.6	2.9
Iowa	5.5	8.3	11.2	4.1
Kansas	6.5	9.8	8.0	4.1
Kentucky	4.2	7.6	8.7	3.4
Louisiana	6.7	3.9	9.5	3.2
Maine	8.5	14.7	27.0	7.1
Maryland	7.9	4.9	5.9	3.4
Massachusetts	6.6	7.5	5.1	4.0
Michigan	3.9	4.0	6.4	2.6
Minnesota	5.6	7.2	10.2	4.3
Mississippi	6.7	4.1	17.9	3.5
Missouri	4.3	5.6	11.1	3.0
Montana	9.5	9.1	28.7	6.8
Nebraska	8.5	11.1	8.7	5.6
Nevada	8.3	6.7	5.2	4.0
New Hampshire	10.8	29.5	30.8	10.1
New Jersey	5.7	5.7	4.6	2.9
New Mexico	11.4	11.8	5.2	4.3
New York	3.8	3.9	3.5	2.1
North Carolina	4.3	3.9	4.3	2.4
North Dakota	13.9	12.5	61.3	10.3
Ohio	3.7	3.9	7.7	2.2
Oklahoma	5.4	4.5	5.2	3.0
Oregon	5.8	10.0	5.5	3.8

State	White-Only Non-Hispanic	Black-Only and Other Non-Hispanic[a]	Hispanic	Total
Pennsylvania	4.0	5.0	6.8	2.8
Rhode Island	12.8	15.4	10.8	6.4
South Carolina	5.2	4.1	8.6	2.9
South Dakota	10.4	13.7	18.5	6.8
Tennessee	3.7	4.5	8.2	2.5
Texas	3.9	3.8	2.3	1.7
Utah	5.8	14.6	8.5	4.5
Vermont	10.8	25.2	43.6	9.9
Virginia	5.3	4.8	6.7	3.3
Washington	4.8	6.4	4.7	3.1
West Virginia	5.7	20.7	31.6	4.9
Wisconsin	5.8	7.8	9.2	4.0
Wyoming	14.7	24.9	19.2	11.8
Total	**2.7**	**2.6**	**2.0**	**1.4**

Notes

[a] The Black-Only Non-Hispanic and Other Non-Hispanic categories were combined because of sample size concerns.

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.

Estimates for Puerto Rico and the other U.S. territories are not included in the totals.

Sources: IPUMS-USA, n.d.; NBER, n.d.a, n.d.b; Thorn et al., 2018; unpublished internal WIC administrative data

References

Heberlein, M., Brooks, T., Artiga, S., & Stephens, J. (2013). *Getting into gear for 2014: Shifting new Medicaid eligibility and enrollment policies into drive.* Retrieved from https://www.kff.org/medicaid/report/getting-into-gear-for-2014-shifting-new-medicaid-eligibility-and-enrollment-policies-into-drive/

HHS (U.S. Department of Health and Human Services). (2016). 2016 poverty guidelines [Web page]. Retrieved from https://aspe.hhs.gov/computations-2016-poverty-guidelines

HHS (U.S. Department of Health and Human Services). (2017). 2017 poverty guidelines [Web page]. Retrieved from https://aspe.hhs.gov/2017-poverty-guidelines

IPUMS-USA (Integrated Public Use Microdata Series-USA). (n.d.). 2017 American Community Survey and Puerto Rico Economic Indicators data [Dataset]. Retrieved from https://usa.ipums.org/usa/

NBER (National Bureau of Economic Research). (n.d.a). *Current Population Survey Replicate Weights*: March 2018 Annual Social and Economic Supplement [Dataset]. Retrieved from http://www.nber.org/data/cps-replicate-weights.html

NBER. (n.d.b). *NBER CPS supplements:* March 2015, 2016, 2017, 2018 Current Population Survey data [Dataset]. Retrieved from http://www.nber.org/data/current-population-survey-data.html

National Center for Health Statistics (n.d.). Vital Statistics data for multiple births and infant deaths. Retrieved from https://www.cdc.gov/nchs/products/nvsr.htm

Special Supplemental Nutrition Program for Women, Infants and Children, 7 C.F.R. § 246 (2014).

Thorn, B., Kline, N., Tadler, C., Budge, E., Wilcox-Cook, E., Michaels, J., Mendelson, M., Patlan, K. L., & Tran, V. (2018). *WIC participant and program characteristics 2016.* Retrieved from https://www.fns.usda.gov/wic/wic-participant-and-program-characteristics-2016

Trippe, C., Tadler, C., Johnson, P., Giannarelli, L., & Betson, D. (2019). *National and State-Level Estimates of WIC Eligibility and WIC Program Reach in 2016.* Retrieved from https://www.fns.usda.gov/wic/national-and-state-level-estimates-wic-eligibility-and-wic-program-reach-2016

U.S. Census Bureau. (n.d.a). 2015, 2016, 2017, 2018 national population estimates [Datasets]. Retrieved from https://www2.census.gov/programs-surveys/popest/datasets/2010-2017/national/asrh/

U.S. Census Bureau. (n.d.b). 2017 State population estimates [Dataset]. Retrieved from https://www2.census.gov/programs-surveys/popest/datasets/2010-2017/state/asrh/

U.S. Census Bureau. (n.d.c). *International programs, International Data Base:* 2017 international population estimates [Dataset]. Retrieved from https://www.census.gov/data-tools/demo/idb/informationGateway.php

U.S. Census Bureau. (n.d.d). *Population and housing unit estimates:* July 2017 population and housing unit estimates for Puerto Rico [Datasets]. Retrieved from https://www.census.gov/programs-surveys/popest/data/data-sets.html

U.S. Census Bureau. (n.d.e). *Survey of Income and Program Participation* [2001, 2004, 2008 datasets]. Retrieved from https://www.census.gov/programs-surveys/sipp/data.html

Ver Ploeg, M., & Betson, D. M. (Eds.). (2003). *Estimating eligibility and participation for the WIC program: Final report.* Washington, DC: The National Academies Press.