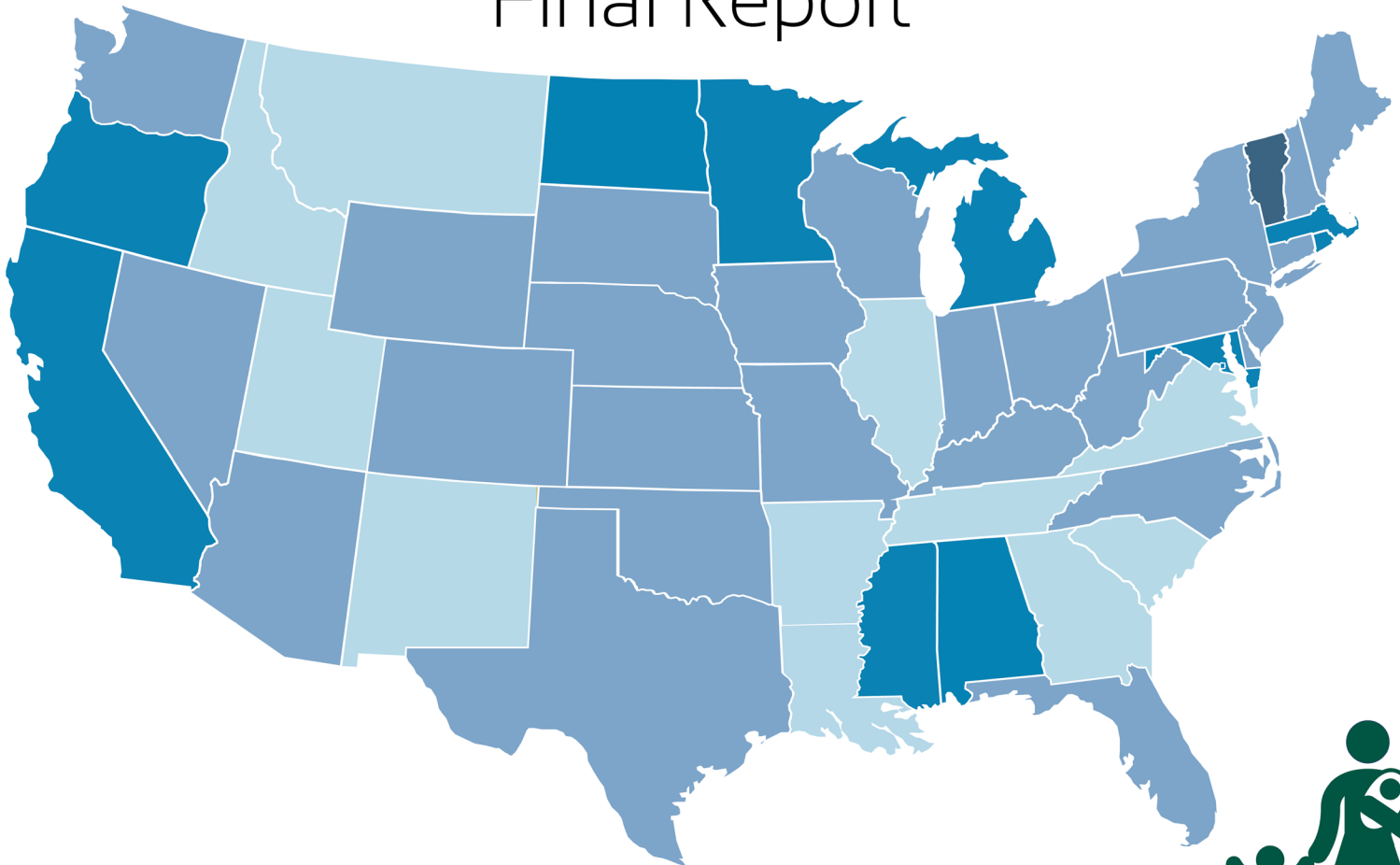




U.S. Department of Agriculture

Volume I

National- and State-Level Estimates of WIC Eligibility and WIC Program Reach in 2019 Final Report



February 2022



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 2019 Final Report, Volume I

**Contract: GS-10F-0136X
Order: AG-3198-D-16-0095/0004**

February 2022

Authors

Kelsey Farson Gray, Elizabeth Balch-Crystal, Linda Giannarelli, and Paul Johnson

Submitted to

USDA Food and Nutrition Service
Contracts Management Division
1320 Braddock Place
Alexandria, VA 22314

Project Officer

Grant Lovellette

Submitted by

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

Project Director

Kelsey Farson Gray

This study was conducted by Insight Policy Research, Inc., for the U.S. Department of Agriculture (USDA) Food and Nutrition Service under Contract GS-10F-0136X, Order Number AG-3198-D-16-0095. The findings and conclusions in this report are those of the authors and should not be construed to represent any official USDA or U.S. Government determination or policy.

Suggested citation: Farson Gray, K., Balch-Crystal, E., Giannarelli, L., & Johnson, P. (2022). *National- and State-level estimates of WIC eligibility and WIC program reach in 2019*. U.S. Department of Agriculture Food and Nutrition Service.

This report was revised in March 2022 to update national-level tables and figures containing tests of statistical significance and measures of precision for estimates.

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 colleagues made key contributions to this report. We thank Kevin Meyers Mathieu, Josh Rozen, Breanna Wakar, and Richard Griffiths, whose work developing the estimates was invaluable. We thank Bethann Mwombela for her review of the report tables and figures. We also thank Betsy Thorn and Jennifer Pooler for their careful review and comments on the report.

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	4
C. Determining the Number of Pregnant Women Eligible for WIC	7
D. Determining the Number of Postpartum Women Eligible for WIC	8
E. Estimating Coverage Rates	9
F. Estimating Participation Rates	10
G. Changes From Previous Year's Report	11
Chapter 3. Estimates of WIC Eligibility for CY 2019	18
A. National-Level Estimates of Individuals Eligible for WIC	18
B. Regional- and State-Level Estimates of Individuals Eligible for WIC.....	24
C. Changes in the Numbers of Individuals Eligible for WIC: CY 2018–CY 2019.....	28
D. Trends in WIC Eligibility Estimates: CY 2005–CY 2019.....	30
Chapter 4. WIC Coverage Rates for CY 2019	33
A. National-Level WIC Coverage Rates.....	33
B. Regional- and State-Level WIC Coverage Rates	38
C. Changes in WIC Coverage Rates: CY 2018–CY 2019	57
D. Trends in WIC Coverage Rates: CY 2005–CY 2019	59
Chapter 5. WIC Participation Rates for CY 2019	65
A. National-Level WIC Participation Rates	65
B. Regional- and State-Level WIC Participation Rates	65
Chapter 6. Measures of Precision for the Estimates of Eligibility	68
A. Method for Producing Standard Errors for National-Level Estimates	68
B. Standard Errors and Coefficients of Variation for National-Level Estimates.....	70
C. Standard Errors and Coefficients of Variation for Regional- and State-Level Estimates	71
References	80

Tables

Chapter 2. Methodology.....	2
Table 2.1. Steps, Data Sources, Methods, and Adjustment Factors Used for CY 2019 Estimates of WIC Eligibility.....	13

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 2019	16
Chapter 3. Estimates of WIC Eligibility for CY 2019	18
Table 3.1. Estimated Average Monthly Number of Individuals Eligible for WIC by Participant Category: CY 2019	19
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 Income Eligibility: CY 2019.....	21
Table 3.3. Distribution of Individuals Eligible for WIC (Percentage) by FNS Region and Participant Category: CY 2019.....	25
Table 3.4. WIC Eligibility Rates by FNS Region and Participant Category: CY 2019.....	25
Table 3.5. Distribution of Individuals Eligible for WIC (Percentage) by State and FNS Region: CY 2019	27
Table 3.6. Changes in the Total Population, Total WIC Eligibility, and WIC Eligibility Rates by Participant Category: CY 2018–CY 2019	29
Table 3.7. Estimated Average Monthly Number of Individuals Eligible for WIC by Year and Participant Category: CY 2005–CY 2019	31
Chapter 4. WIC Coverage Rates for CY 2019	33
Table 4.1. WIC Coverage Rate by Participant Category: CY 2019.....	34
Table 4.2. WIC Eligibility, Participants, and Coverage Rates by Participant Category and by Race and Hispanic Ethnicity: CY 2019.....	36
Table 4.3. WIC Eligibility, Participants, and Coverage Rates by FNS Region and Participant Category: CY 2019.....	39
Table 4.4. WIC Eligibility, Participants, and Coverage Rates by FNS Region and by Race and Hispanic Ethnicity Category: CY 2019	40
Table 4.5. WIC Eligibility, Participants, and Coverage Rates by State and FNS Region: CY 2019	41
Table 4.6. WIC Coverage Rates by State and Region and Participant Category: CY 2019.....	45
Table 4.7. State-Level WIC Coverage Rates by Race and Hispanic Ethnicity: CY 2019	52
Table 4.8. Change in WIC Coverage Rate by Participant Category: CY 2018–CY 2019.....	57
Table 4.9. WIC Coverage Rates by FNS Region and Participant Category: CY 2018–CY 2019	59
Table 4.10. WIC Coverage Rates: CY 2005–CY 2019	60
Table 4.11. WIC Coverage Rates by Participant Category: CY 2005–CY 2019	61
Chapter 5. WIC Participation Rates for CY 2019	65
Table 5.1. WIC Participation Rates by Participant Category: CY 2019.....	65
Table 5.2. WIC Participation Rates by State and FNS Region: CY 2019	66
Chapter 6. Measures of Precision for the Estimates of Eligibility.....	68
Table 6.1. Standard Errors and Coefficients of Variation for Estimated Number of Individuals Eligible for WIC by Participant Category and Race and Hispanic Ethnicity: CY 2019	70

Table 6.2. Standard Errors and Coefficients of Variation for Estimated Number of Individuals Eligible for WIC by FNS Region and Participant Category: CY 2019.....	71
Table 6.3. Standard Errors and Coefficients of Variation for Estimated Number of Individuals Eligible for WIC by State and FNS Region: CY 2019	72
Table 6.4. Coefficients of Variation of WIC Coverage Rates by State and Participant Category: CY 2019	76
Table 6.5. Coefficients of Variation of WIC Coverage Rates by State and by Race and Hispanic Ethnicity: CY 2019	78

Figures

Chapter 3. Estimates of WIC Eligibility for CY 2019	17
Figure 3.1. Distribution of Individuals Eligible for WIC: CY 2019	18
Figure 3.2. WIC Eligibility Rate by Participant Category: CY 2019	19
Figure 3.3. Characteristics of Infants and Children Eligible for WIC: CY 2019	24
Figure 3.4. WIC Eligibility Rates by FNS Region and Participant Category: CY 2019	26
Figure 3.5. Trends in WIC Eligibility by Participant Category: CY 2005–CY 2019	32
Chapter 4. WIC Coverage Rates for CY 2019	33
Figure 4.1. WIC Coverage Rate by Participant Category: CY 2019	34
Figure 4.2. WIC Coverage Rates for Children by Year of Age and Postpartum Women by Breastfeeding Status: CY 2019.....	35
Figure 4.3. WIC Coverage Rates by Race and Hispanic Ethnicity and by Participant Category: CY 2019	37
Figure 4.4. WIC Coverage Rate for Total Eligible Individuals by State: CY 2019.....	44
Figure 4.5. WIC Coverage Rate for Infants by State: CY 2019	48
Figure 4.6. WIC Coverage Rate for Children by State: CY 2019	49
Figure 4.7. WIC Coverage Rate for Pregnant Women by State: CY 2019	50
Figure 4.8. WIC Coverage Rate for Postpartum Women by State: CY 2019.....	51
Figure 4.9. WIC Coverage Rate for Hispanic/Latino Individuals by State: CY 2019	54
Figure 4.10. WIC Coverage Rate for White-Only, Not Hispanic Individuals by State: CY 2019	55
Figure 4.11. WIC Coverage Rate for Other Than White-Only, Not Hispanic Individuals by State: CY 2019	56
Figure 4.12. Change in WIC Coverage Rate by Participant Category: CY 2018–2019	58
Figure 4.13. Trends in WIC Coverage Rates by Participant Category: CY 2005–CY 2019	62
Figure 4.14. Trends in WIC Coverage Rates for Children by Year of Age: CY 2005–CY 2019	63
Figure 4.15. Trends in WIC Coverage Rates by FNS Region: CY 2005–CY 2019.....	64

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 referrals to health and social services. WIC serves low-income and nutritionally at-risk pregnant, breastfeeding and non-breastfeeding postpartum women, infants, and children up to age 5. 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-breastfeeding² 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.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.⁴ Applicants must live in the State or territory 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) 2019. Tables and figures also include updated historical estimates for CY 2016 through CY 2018 using improved methods for estimating WIC eligibility among infants.

57 percent
of eligible women, infants,
and children participated
in WIC in 2019

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 in CY 2019. WIC provides services in 89 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 33 ITOs.⁵ Estimates are provided at the national, regional, and State levels and include Puerto Rico and other U.S. territories.^{6,7} Estimates are also provided by participant category—infants, children, pregnant women, and postpartum women⁸—and by race and Hispanic ethnicity.

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 family or 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 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). As in previous reports, this report does not consider automating income eligibility.

⁵ On October 1, 2019, the number of ITOs participating in WIC changed from 34 to 33, decreasing the number of State agencies to 89.

⁶ On October 1, 2019, the FNS Regions were realigned. The 2019 estimates presented in this report reflect the realigned FNS Regions.

⁷ Data for those eligible for WIC through ITOs are included in the data for the State where the ITO is located.

⁸ The postpartum women category includes breastfeeding and non-breastfeeding women. This report contains tables and figures that combine breastfeeding and non-breastfeeding women under postpartum women.

A. Results

1. WIC Eligibility Estimates

In an average month in CY 2019, 11.0 million individuals were eligible for WIC (see table ES.1). Of those eligible to participate in WIC, almost two-thirds (65 percent)⁹ were children aged 1–4, 20 percent were women, and 15 percent were infants. Children eligible for WIC were evenly distributed by year of age. Among total eligible individuals, 15 percent were 1-year-old children; 16 percent were 2-year-old and 3-year-old children; and 18 percent were 4-year-old children. Pregnant and postpartum women each represented about 10 percent of the eligible population.

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 2019, 43 percent of all infants and 46 percent of all children were eligible for WIC (see table ES.1 and figure ES.1). Thirty-eight percent of all pregnant women and 30 percent of all postpartum women were eligible.

Table ES.1. Estimated Average Monthly Number of Individuals Eligible for WIC by Participant Category: CY 2019

Participant Category	Number Eligible	Percent of Total Eligible	Total Population	Eligibility Rate
Infants	1,617,143	14.7	3,736,739	43.3
Children	7,199,043	65.5	15,805,699	45.5
1-year-old children	1,696,150	15.4	3,866,196	43.9
2-year-old children	1,793,823	16.3	3,931,383	45.6
3-year-old children	1,781,576	16.2	3,963,295	45.0
4-year-old children	1,927,494	17.5	4,044,826	47.7
Women	2,174,906	19.8	6,504,274	33.4
Pregnant women	1,066,052	9.7	2,787,546	38.2
Postpartum women	1,108,854	10.1	3,716,728	29.8
Breastfeeding women	742,473	6.8	2,020,722	36.7
Non-breastfeeding women	366,381	3.3	1,696,005	21.6
Total	10,991,092	100.0	26,046,712	42.2

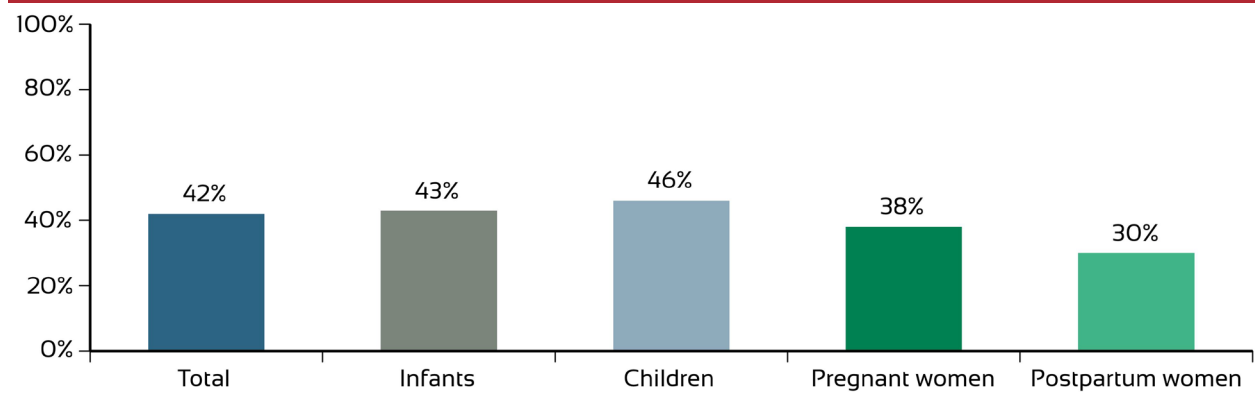
Note: The total population consists of individuals in the 50 States, the District of Columbia, and Puerto Rico and the other U.S. territories served by WIC in each participant category. The eligibility rate is the ratio of the total number of individuals eligible for WIC to the total population in each participant category. The average monthly population of postpartum women includes all women who gave birth less than 1 year prior, even if they are not categorically eligible for WIC because they are more than 6 months postpartum and are not breastfeeding.

CY = calendar year

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

⁹ The unrounded percentage is 65.499 percent for children, which rounds to 65 percent.

Figure ES.1. WIC Eligibility Rate by Participant Category: CY 2019



CY = calendar year

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

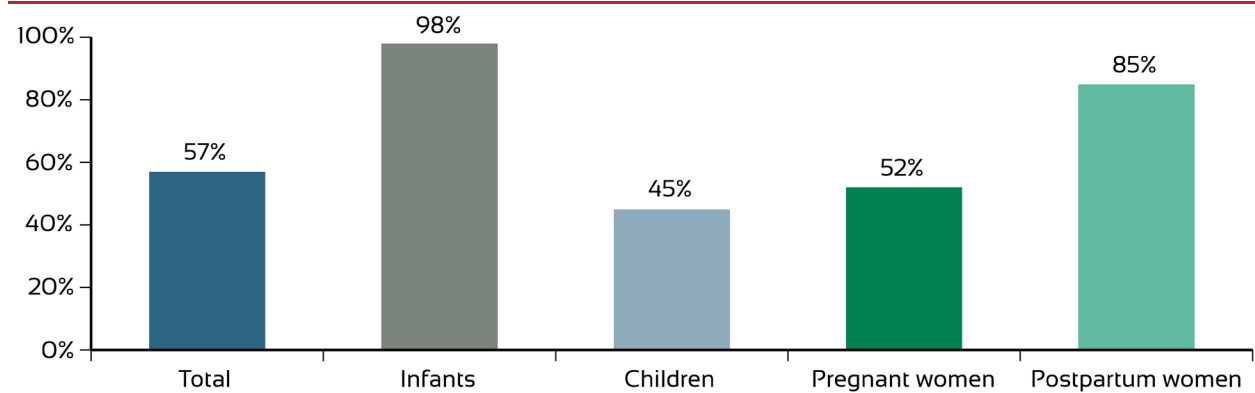
2. Coverage Rates

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

WIC coverage rates varied by participant category

Of the 11.0 million women, infants, and children eligible for WIC in an average month in CY 2019, more than half (6.3 million) received benefits, resulting in a national coverage rate of 57 percent. Across all participant categories, coverage rates were highest for infants (98 percent) and lowest for children (45 percent; see figure ES.2). Moreover, coverage rates for children decreased with age, from a high of 65 percent for 1-year-old children to a low of 25 percent for 4-year-old children (see figure ES.3).

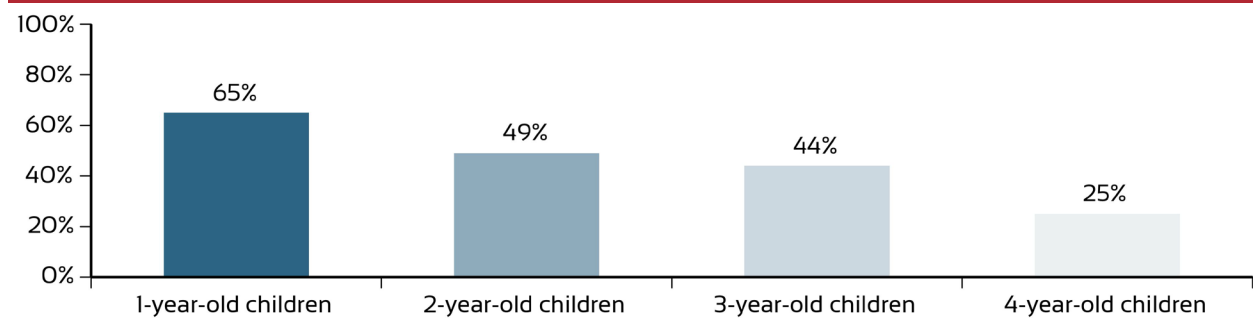
Figure ES.2. WIC Coverage Rate by Participant Category: CY 2019



CY = calendar year

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a, n.d.b; unpublished internal WIC administrative data

Figure ES.3. WIC Coverage Rates for Children by Year of Age: CY 2019



CY = calendar year

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a, n.d.b; unpublished internal WIC administrative data

WIC coverage rates varied by race and Hispanic ethnicity

The overall coverage rate was highest for Hispanic/Latino individuals (67 percent) compared with other race and ethnicity groups. Coverage rates were 45 percent¹⁰ for White-only, non-Hispanic individuals; 62 percent for Black-only, non-Hispanic individuals; and 60 percent for non-Hispanic individuals who self-identified as two or more races or self-identified as a race other than Black or White (see table ES.2). Coverage rates were highest for Hispanic/Latino children (55 percent) and lowest for White-only, non-Hispanic children (34 percent). Coverage rates were highest for infants within all race and ethnicity groups.

Table ES.2. WIC Coverage Rate by Race and Hispanic Ethnicity: CY 2019

Participant Category	Hispanic/Latino	White-Only, Not Hispanic	Black-Only, Not Hispanic	Two or More Races or Other Race, Not Hispanic	Total
Infants	†	77.2*	†	†	98.5
Children	55.2*	33.9*	45.1	47.6	44.8
Pregnant women	58.3*	47.3	53.6	47.8	52.4
Postpartum women	95.4*	70.1*	96.5	80.7	84.8
Total	67.3*	45.5*	61.6*	59.8	57.4

Note: Estimates for U.S. territories other than Puerto Rico are not included in the calculation of the coverage rates in this table because information on race and ethnicity was not available for the other U.S. territories in the data.

CY = calendar year

* indicates a statistically significant difference at the 95 percent confidence level between the coverage rate for a participant category's race and ethnicity and the national coverage rate for that category. The statistical significance testing was conducted based on the Current Population Survey Annual Social and Economic Supplement data, which included data only for States. It did not include data for Puerto Rico or the other U.S. territories served by WIC. See table F.9 in volume II for margins of error by participant category and race and Hispanic ethnicity used to calculate statistical significance in this table.

† indicates an unreliable coverage rate over 100 percent with a 95 percent confidence interval that does not contain a value 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.; Kline et al., 2020; U.S. Census Bureau, n.d.a, n.d.b; unpublished internal WIC administrative data

¹⁰ The unrounded percentage is 45.482 percent for White-only, non-Hispanic individuals, which rounds to 45 percent.

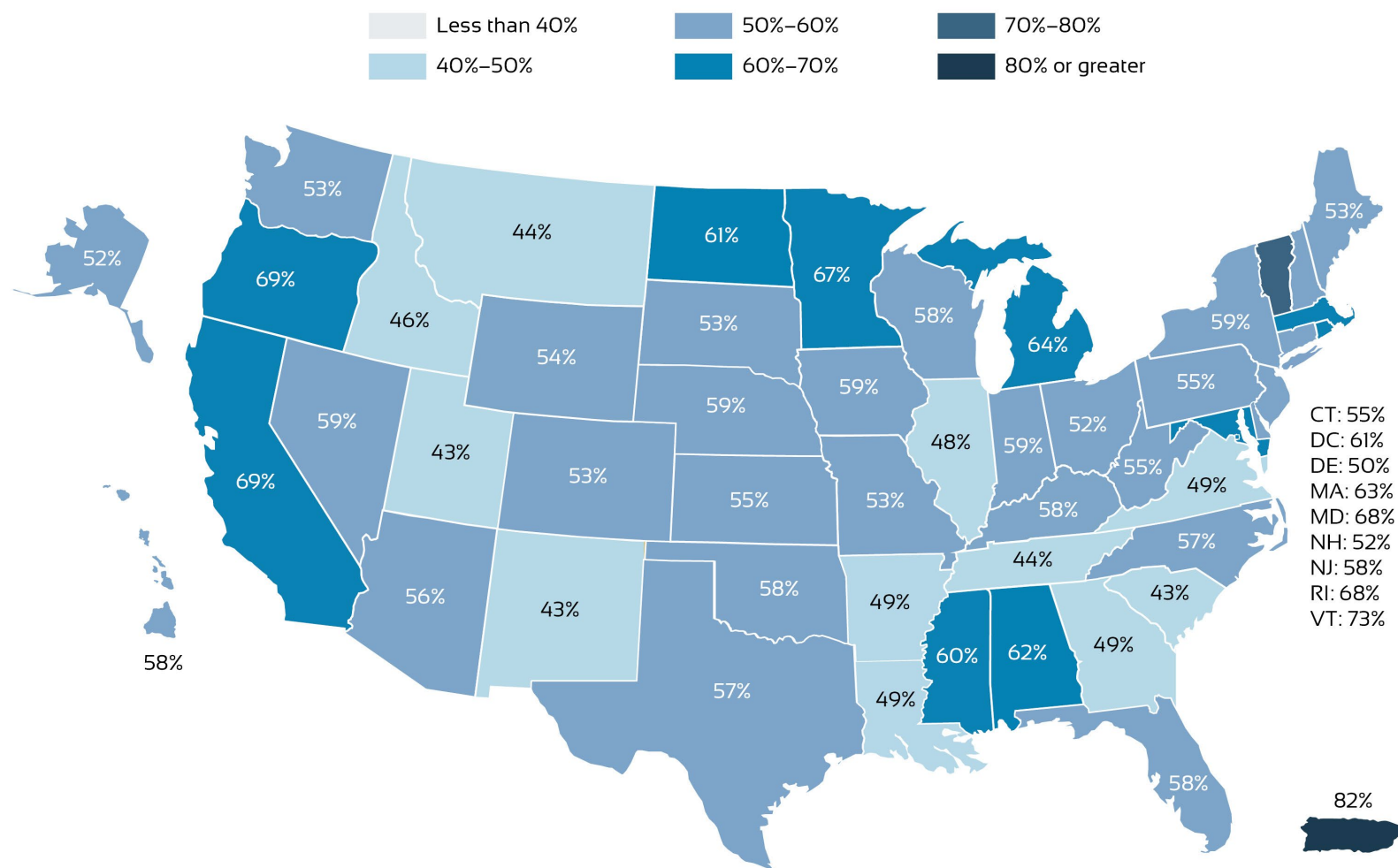
WIC coverage rates varied by State

WIC coverage rates varied substantially by State, ranging from 43 percent to 73 percent, compared with the national average coverage rate of 57 percent. Puerto Rico had a higher coverage rate (82 percent) than any State. 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 CY 2019, whereas States with the lightest shading had the lowest rates. See tables 4.5 and 4.6 in chapter 4 for more detail on State coverage rates.

Coverage rates by race and ethnicity varied across States. In 28 States and the District of Columbia, the coverage rate for Hispanic/Latino individuals was higher than the rate for White-only, non-Hispanic individuals and all other non-Hispanic individuals (see table 4.7 in chapter 4). However, in the other 22 States, the coverage rate for Hispanic/Latino individuals was lower than the rate for at least one of the other groups.

Figure ES.4. WIC Coverage Rate for Total Eligible Individuals by State: CY 2019

National Coverage Rate: 57.4 Percent



CY = calendar year

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

WIC coverage rates varied over time

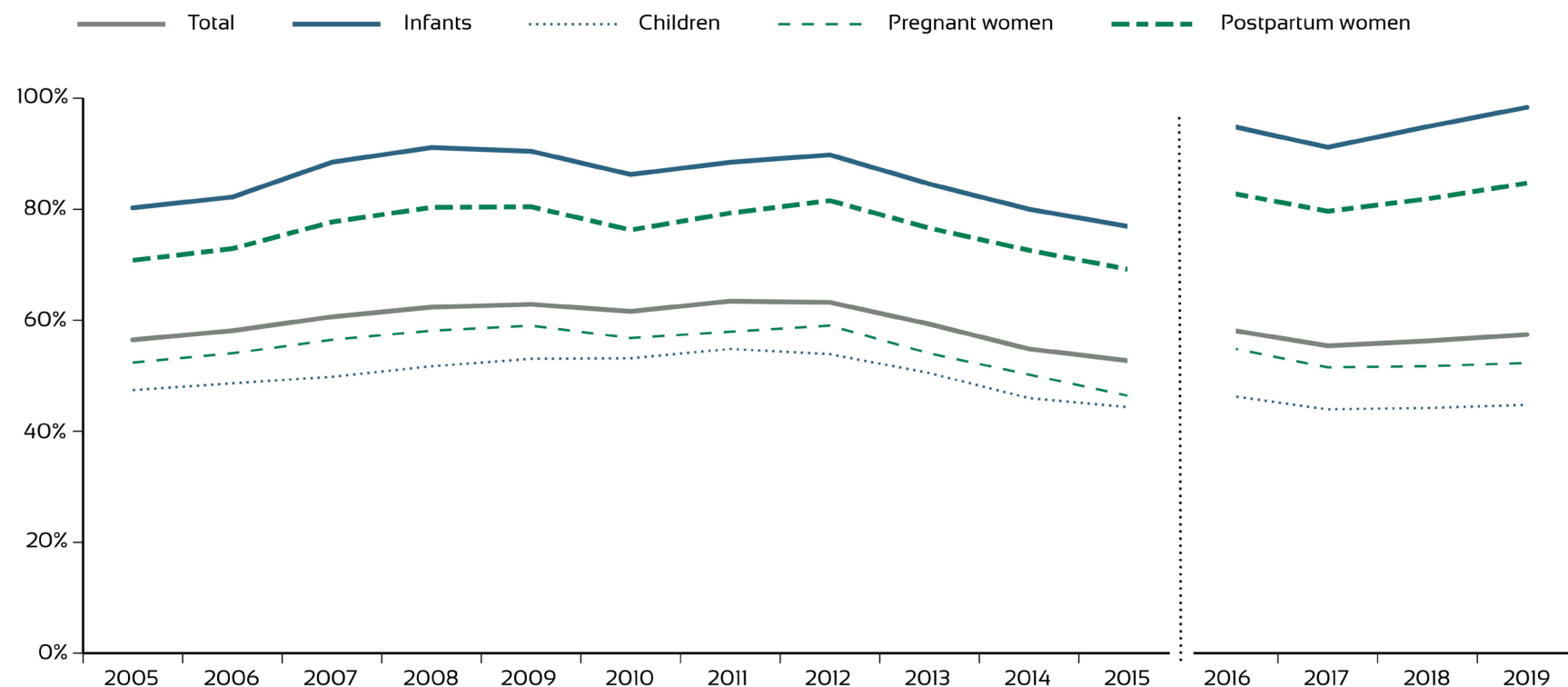
The estimates presented in this report for CY 2016 through CY 2019 differ methodologically from the CY 2005 through CY 2015 estimates because of changes to the underlying data sources used to produce the estimates of WIC eligibility (see chapter 2 of Farson Gray et al., 2021, for more information).¹¹

Comparisons of the CY 2016 through CY 2019 estimates with prior estimates should be interpreted with caution. However, general trends in WIC coverage rates can be assessed. For example, total WIC coverage rates increased from CY 2005 to CY 2011 before steadily declining through CY 2015 (see the line for “Total” in figure ES.5). Rates fell between CY 2016 and CY 2017 before steadily increasing by 1 percentage point each year from CY 2017 to CY 2019.

The relative order of coverage rates by participant category has remained consistent from CY 2005 to CY 2019. Across all years, coverage rates were highest for infants, followed by those for postpartum women and pregnant women. Coverage rates for children were consistently the lowest.

¹¹ The CY 2016–CY 2018 estimates presented in this report were also updated from the estimates presented in Farson Gray et al., 2021, to incorporate improved methods for estimating WIC eligibility among infants (see appendix E in volume II for more information).

Figure ES.5. Trends in WIC Coverage Rates by Participant Category: CY 2005–CY 2019



Note: Estimates for CY 2016–CY 2019 differ methodologically from earlier estimates because of changes to the underlying data sources. Comparisons of the CY 2016 through CY 2019 estimates with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The CY 2016–CY 2018 estimates presented in this report were updated to use improved methods for estimating WIC eligibility among infants (see appendix E in volume II for more information).

CY = calendar year

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a, n.d.b; unpublished internal WIC administrative data

B. Methodology

The CY 2019 national estimates presented in this report are based on a methodology developed by the Committee on National Statistics of the National Research Council (Ver Ploeg & Betson, 2003). The primary data source used to develop the national estimates of the eligible populations is the 2020 Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) (U.S. Census Bureau, n.d.a).¹² 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 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 do not identify pregnancy or breastfeeding status.

Impact of the COVID-19 Pandemic on the 2020 CPS-ASEC

The COVID-19 pandemic affected the interview process for the 2020 March CPS (Rothbaum & Bee, 2021). Survey interviews began on March 15, 2020, but in-person interviews were halted on March 20, 2020, because of government regulations and health and safety concerns. All remaining interviews were conducted by phone. These changes resulted in a substantial increase in the 2020 CPS-ASEC nonresponse rate. The response rate in March 2020 was 73 percent, 10 percentage points lower than in March 2019. The characteristics of nonrespondents were nonrandom. Nonresponse in the 2020 CPS-ASEC was more strongly associated with median income and educational attainment than in prior years. As a result, respondents had relatively higher income and were more educated than nonrespondents. For the 2019 estimates presented in this report, the study team used a set of alternate weights published by the U.S. Census Bureau to account for nonrandom nonresponse in the 2020 CPS-ASEC (Rothbaum & Bee, 2021). The original weights published by the U.S. Census Bureau resulted in coverage rates over 100 percent for infants and postpartum non-breastfeeding women.

The State-level estimates are based on a methodology that apportions the national figures using data from the American Community Survey (ACS). The 2019 State-level estimates are based on the 2019 ACS data (Integrated Public Use Microdata Series-USA [IPUMS-USA], n.d.). 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 based on similar procedures to those used to generate the national estimates. However, U.S. territory estimates are based on data from the Puerto Rico Community Survey (PRCS) and the U.S. Census Bureau International Data Base (IDB), respectively.

The U.S. Census Bureau recently updated the data processing procedures for the CPS-ASEC. As a result, the CY 2016–CY 2019 estimates presented in this report differ methodologically from the CY 2005–CY 2015 estimates (see chapter 2 in Farson Gray et al., 2021, for more information). The CY 2016–CY 2018 estimates presented in this report were also updated to use the same improved methods as CY 2019 for estimating WIC eligibility among infants (see appendix E in volume II for more information).¹³ Comparisons of the CY 2016 through CY 2019 estimates presented in this report with prior estimates should be interpreted with caution.

¹² The 2020 CPS-ASEC survey asks about income and program participation during CY 2019.

¹³ The revised CY 2016–CY 2018 estimates fell within the margin of error of the original CY 2016–CY 2018 estimates.

Chapter 1. Introduction

WIC provides nutritious 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, breastfeeding and non-breastfeeding 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;¹⁴ Puerto Rico and four additional U.S. territories (American Samoa, Guam, the Northern Mariana Islands, and the U.S. Virgin Islands); and 33 ITOs.¹⁵ Eligible participants receive vouchers, checks, or electronic benefit transfer cards for prescribed foods and redeem them at authorized retail vendors at no charge.

WIC served 6.3 million women, infants, and children in an average month in CY 2019. To be eligible for WIC, an applicant must be categorically eligible as a pregnant, postpartum breastfeeding,¹⁶ or postpartum non-breastfeeding¹⁷ woman; an infant up to age 1;¹⁸ or a child aged 1–4. Each applicant must also be income-eligible and at nutritional risk and live in the State where the application is submitted.

6.3 million
women, infants, and
children were served by
WIC in an average
month in 2019

WIC is a federally funded program, but the funding is discretionary. The number of eligible women, infants, and children 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 considers 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 2019 and updated historical estimates for 2016–2018.¹⁹ 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 in 2019. Estimates are provided at the national, regional, and State levels.²⁰ Estimates are also provided by participant category—infants, children, pregnant women, and postpartum women²¹—and by race and ethnicity.

¹⁴ Hereafter, this report includes the District of Columbia in references to States.

¹⁵ On October 1, 2019, the number of ITOs participating in WIC changed from 34 to 33, decreasing the number of State agencies to 89.

¹⁶ Breastfeeding women are categorically eligible up to 1-year postpartum.

¹⁷ Non-breastfeeding women are categorically eligible up to 6-months postpartum.

¹⁸ An infant must be recertified as a child after the infant's first birthday.

¹⁹ The 2016–2018 estimates presented in this report were updated to use improved methods for estimating WIC eligibility among infants (see appendix E in volume II for more information).

²⁰ On October 1, 2019, the FNS Regions were realigned. The 2019 estimates presented in this report reflect the realigned FNS Regions.

²¹ Postpartum women category includes breastfeeding and non-breastfeeding women. This report contains tables and figures that combine breastfeeding and non-breastfeeding women under postpartum women.

Chapter 2. Methodology

This chapter describes the methodology used to produce estimates of individuals eligible for WIC, coverage rates, and participation rates for 2019.²² To be eligible for WIC, an applicant must be categorically eligible and meet requirements for income or adjunctive income eligibility, nutritional risk, and residency. Descriptions of these requirements follow:

- ▶ **Categorical Eligibility.** 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.** 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.²³ Applicants must present proof of income such as recent paystubs or income tax returns.
- ▶ **Adjunctive Income Eligibility.** 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).²⁴
- ▶ **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 (e.g., anemia, inadequate diet, 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.²⁵

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 (Ver Ploeg & Betson, 2003). The panel recommended using CPS-ASEC data for the initial counts of eligible infants and children in all States. The counts are then refined through a series of adjustment factors designed to reflect WIC eligibility requirements more closely. 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 the number of 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

²² 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.

²³ See HHS (2018, 2019) for the Federal Poverty Guidelines used to calculate the 2019 WIC eligibility estimates presented in this report. These guidelines are based on family or 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.

²⁴ 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). As in previous reports, the estimates presented do not account for automatic income eligibility.

²⁵ Applicants applying for benefits through an ITO must meet the residency requirements established by that ITO.

estimates are 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 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; 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 of the number of individuals eligible for WIC 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 similar procedures to those used to generate the national estimates; however, those estimates are based on data from the PRCS and the IDB, respectively.

The following data sources were used for the 2019 estimates: (1) 2020 CPS-ASEC data (U.S. Census Bureau, n.d.a), which asks about income and program participation during 2019; (2) 2019 ACS and PRCS data (Integrated Public Use Microdata Series-USA [IPUMS-USA], n.d.); and (3) 2019 IDB data (U.S. Census Bureau, n.d.b).

Because of recent processing changes to the CPS-ASEC, the 2016–2019 WIC eligibility estimates presented in this report are not completely consistent with previously published estimates, which relied on data using the prior CPS-ASEC processing procedures. As a result, comparisons of the 2016 through 2019 estimates presented in this report with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The 2016–2018 estimates presented in tables and figures in this report were also updated to use improved methods for estimating WIC eligibility among infants (see appendix E in volume II for more information).²⁶ The revised 2016–2018 estimates fell within the margin of error of the original 2016–2018 estimates.

The step-by-step process for producing the 2019 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 2018 report.

Table 2.1 summarizes the steps, data sources, and adjustment factors used to estimate eligibility for WIC in 2019. Table 2.2 shows the derivation of the number of individuals eligible for WIC at each step of the process and the final number of eligible individuals. Tables 2.1 and 2.2 are provided at the end of this chapter.

Overview of Methods for Producing Estimates of WIC Eligibility

- Estimate the number of infants and children eligible for WIC (section B).
- Use the estimate of infants eligible for WIC to estimate the number of pregnant women eligible for WIC (section C).
- Use the estimate of infants eligible for WIC to estimate the number of postpartum women eligible for WIC (section D).

²⁶ The 2005–2015 estimates presented in this report match previous published estimates.

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.²⁷

1. National Estimates

Produce preliminary counts of infants and children

The national estimates of infants and children eligible for WIC are based on the 2020 CPS-ASEC data. The data are used to produce preliminary counts of infants and children eligible for WIC in 2019. These data were collected in spring 2020, and each household was asked to report income and program participation for the prior calendar year (2019). Because of the COVID-19 pandemic, the 2020 CPS faced difficult interviewing conditions, resulting in a substantial increase in the nonresponse rate for the survey (Rothbaum & Bee, 2021). The characteristics of nonrespondents were nonrandom; respondents had relatively higher income and were more educated than nonrespondents. For the 2019 estimates presented in this report, the study team used a set of alternate weights produced by the U.S. Census Bureau to account for nonrandom nonresponse in the 2020 CPS-ASEC (Rothbaum & Bee, 2021).

Produce adjusted counts of infants and children

The preliminary counts of infants and children from the CPS-ASEC 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 are two possible reasons for these differences: the U.S. Census Bureau's weighting procedures for the CPS-ASEC data were not designed to meet population targets by year of age, and the U.S. Census Bureau may revise population estimates after the CPS-ASEC weights are calculated. The adjustment factors (see table 2.1) reflect national population estimates (U.S. Census Bureau, 2020b) 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.²⁸ The adjustment factors inflated or deflated the CPS-ASEC count for each subgroup (age, race and ethnicity, and gender) to better reflect the U.S. Census Bureau population estimate for that subgroup. The adjustment factors were used only when the direction of the difference between the U.S. 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).

Determine the number of income-eligible infants and children

WIC regulations specify all individuals living as one economic unit (i.e., related or unrelated individuals who contribute to the household income) are treated as one unit for eligibility determination.²⁹ The CPS-ASEC data do not explicitly indicate how household members (people living in the same dwelling) share resources. For purposes of estimating WIC eligibility, the economic unit was defined as all individuals in the CPS-ASEC household who were related by blood, marriage, or adoption, plus the

²⁷ Data for those eligible for WIC through ITOs are included in the data for the State where the ITO is located.

²⁸ The national-level adjustment factors were calculated separately by (1) age of infant or child (0, 1, 2, 3, or 4 years old); (2) race and ethnicity (White-only, not Hispanic; Black-only, not Hispanic; two or more races or other race, not Hispanic; Hispanic/Latino); and (3) gender (female or male). Data for a 4-year period were used to minimize year-to-year swings in the factors.

²⁹ 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).

unmarried partner of any of those individuals and that partner's dependents.³⁰ Economic units in the CPS-ASEC with annual income less than or equal to 185 percent of the Federal Poverty Guidelines were identified as income-eligible.^{31,32} The adjusted counts of infants and children were used to estimate the number of income-eligible infants and children.

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 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.³³ To avoid double-counting infants and children who were directly income-eligible (based on income thresholds) and adjunctively income-eligible (based on participation in Medicaid, SNAP, or TANF), only those adjunctively income-eligible infants and children in economic units whose annual income exceeded 185 percent of the Federal Poverty Guidelines were added to the number of income-eligible infants and children.³⁴

Because of changes to the CPS-ASEC processing procedures beginning with the 2019 CPS-ASEC (used for the 2018 estimates), fewer infants and children are estimated as adjunctively income-eligible for WIC through Medicaid only (i.e., not eligible for WIC through income, SNAP, or TANF) than would have been under the prior processing system. The changes included (1) revisions to health insurance coverage questions to improve responses regarding coverage in the prior year, (2) general coverage questions followed by more specific coverage questions, (3) new questions regarding coverage, and (4) revisions to how health insurance units are defined to capture household members sharing the same type of plan (U.S. Census Bureau, 2019). A U.S. Census Bureau analysis showed while the new processing system estimated a greater proportion of people being covered by some form of health insurance, it produced a significant decrease in Medicaid coverage because of a reduction in the number of individuals with coverage from several sources (U.S. Census Bureau, 2019).

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.³⁵ The annual-to-monthly income adjustment accounted for how annual income data and program participation data could incorrectly estimate monthly eligibility.³⁶ 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

³⁰ For example, if a CPS-ASEC household consisted of a woman who was living with her children, her unmarried partner, and the partner's child from a prior relationship, all individuals would be included in the economic unit for the purposes of calculating the WIC eligibility estimates in this report.

³¹ Special Supplemental Nutrition Program for Women, Infants, and Children (WIC): 2019/2020 Income Eligibility Guidelines. 84 FR 17775.

³² HHS issues new Federal Poverty Guidelines near the start of each calendar year, but the WIC program begins using each year's new guidelines in July; therefore, the poverty guidelines for 2 consecutive years were averaged to estimate income eligibility for WIC. For the 2019 estimates, the guidelines used to estimate WIC eligibility from July 2018 through June 2019 (the guidelines released in early 2018) were averaged with the guidelines used by the WIC program for July 2019 through June 2020 (the guidelines released in early 2019).

³³ Medicaid enrollment is unavailable for infants aged 0–3 months in the prior year (e.g., 2019 in the 2020 CPS-ASEC).

³⁴ Adjunctive income eligibility is counted by the first program that qualifies the person for WIC, in this order: SNAP, TANF, and Medicaid.

³⁵ 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.

³⁶ 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 even though the family's annual income is above 185 percent of the poverty guidelines, or the family's annual income may suggest eligibility while the family's income is below 185 percent of poverty in part of the year. Program participation in Medicaid, SNAP, and TANF may also fluctuate during the year.

a year, depending on the State.³⁷ After a participant's certification period ends, eligibility must again be confirmed. These adjustment factors—calculated separately for infants and children by race and ethnicity and to reflect shorter certification periods for children in some States³⁸—were calculated using data from the Survey of Income and Program Participation (SIPP), which provides for month-by-month observation of family circumstances (see table 2.1; U.S. Census Bureau, n.d.c). Appendix D in volume II 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.

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 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 2019 ACS data instead of 2020 CPS-ASEC data.³⁹ The total 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, 2020c).⁴⁰ The number of infants and children in economic units with annual income less than or equal to 185 percent of the Federal Poverty Guidelines was determined, and the number of adjunctively income-eligible infants and children were added to that count. The annual-to-monthly income adjustments and the nutritional risk adjustments were then applied.⁴¹ The ACS-based counts of infants and children eligible for WIC were then totaled across the States, and each State's share of the ACS-based national-level estimate was determined (separately by year of age⁴² of participant) and then applied to the CPS-based national estimates to derive State-specific estimates by age.

3. Territory Estimates

Estimates of infants and children eligible for WIC in Puerto Rico are based on the 2019 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 2019 IDB data for those areas. Starting from the numbers of infants and children in the U.S. territories in the IDB data, two

³⁷ For example, an infant or child may appear ineligible based on annual income but could have been eligible because they were certified in the prior year. Conversely, a child may appear eligible based on annual income, but the family income could have increased by the time the child needed to be recertified.

³⁸ Forty-three States and the District of Columbia implemented the 12-month certification policy for children prior to 2019. In 2019, Kentucky and Louisiana implemented the 12-month certification policy, and Arkansas, Nebraska, Ohio, and West Virginia maintained a 6-month certification policy for children.

³⁹ 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.

⁴⁰ For State estimates, the weight adjustments were calculated by year of age (within each State), not by gender or race and ethnicity.

⁴¹ 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/Latino. The factors for children varied by each State's implementation of 12-month certification.

⁴² Age 0, 1, 2, 3, or 4

adjustments were applied: (1) 2010 decennial census data were used to estimate the percentage of the income-eligible population, and (2) the relationship between income eligibility and adjunctive income eligibility in the States and Puerto Rico in 2019 was used to estimate the additional number of infants and children eligible through adjunctive income eligibility in the other four U.S. territories.⁴³

C. Determining the Number of Pregnant Women Eligible for WIC

The next step in estimating eligibility for WIC in 2019 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,⁴⁴ 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

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 the number of infants) and (2) fetal and infant deaths (which increase the number of pregnant women compared with the number of infants). The adjustment factor is calculated using National Vital Statistics System data on births, infant deaths, and fetal deaths for four race and ethnicity groups: White-Only, Not Hispanic; Black-Only, Not Hispanic; Two or More Races or Other Race, Not Hispanic; and Hispanic/Latino (see table 2.1).

Adjust estimates for length of pregnancy and income during pregnancy

The 2019 estimates were also adjusted to reflect that the length of a typical pregnancy is 9 months⁴⁵ and that some mothers of eligible infants were not eligible during pregnancy (see table 2.1).⁴⁶

Adjust for nutritional risk

The final adjustment to derive the number of pregnant women was to account for the small percentage (0.97) of otherwise eligible pregnant women who may not have been determined to be at nutritional risk. This adjustment was based on the same CNSTAT set of nutritional risk factors 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 ACS-based State estimates of infants eligible for WIC as a starting point. The adjustments described earlier in this section were applied to the ACS-based infant

⁴³ The relationship between adjunctive income eligibility and income eligibility in Puerto Rico and the mainland in 2019 was used to estimate the additional number of infants and children who would gain eligibility through participation in other safety net programs. These procedures resulted in an estimate of 80 percent of infants and 84 percent of children eligible for WIC in the other island territories because of annual income or program participation.

⁴⁴ Pregnancies can be inferred when the pregnancy has resulted in a birth but cannot be observed for women who are pregnant at the time of the survey.

⁴⁵ The estimates calculate pregnant women as eligible from conception, which is consistent with Federal WIC eligibility guidelines.

⁴⁶ The CNSTAT panel recommended adjusting the eligibility estimates to incorporate the fact women are more likely to be working during pregnancy than after birth, resulting in higher family income, on average, 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.

eligibility estimates, which were then used to generate each State's share of pregnant women eligible for WIC in the ACS. Those shares were then applied to the national-level estimate of pregnant women eligible for WIC based on the CPS-ASEC data to produce the final State-level estimates of eligible pregnant women.

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 one 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 2019 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 2019.

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.

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).

Adjust estimates for breastfeeding status

National breastfeeding rates were used to adjust for breastfeeding status by race and ethnicity for the 2019 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 2018 and 2019 surveys for the 2017 birth cohort.⁴⁷ CDC conducted special tabulations of the NIS data to provide breastfeeding rates for all infants, infants participating in WIC, and nonparticipating infants who were

⁴⁷ Unpublished internal CDC data.

eligible for WIC who were born in 2017. NIS participant caregivers of children ages 19 through 35 months were asked whether the child was ever breastfed or fed breast milk and the age when the child completely stopped breastfeeding or being fed breast milk. These data were provided for three points in time: (1) ever, (2) at age 6 months, and (3) at age 12 months. These data were also collected for four racial and ethnic categories: White-Only, Not Hispanic; Black-Only, Not Hispanic; Two or More Races or Other Race, Not Hispanic; and Hispanic/Latino. This information was used to calculate adjustments to derive postpartum women eligible for WIC by breastfeeding status.

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 2019 estimates.⁴⁸ 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

Adjustments similar to those applied to the CPS-ASEC data were applied to the estimates of eligible infants in the territories to derive estimates of postpartum breastfeeding and non-breastfeeding women eligible for WIC in Puerto Rico and the other U.S. territories served by WIC. National breastfeeding rates were used to estimate the numbers of breastfeeding and non-breastfeeding postpartum women eligible for WIC in the territories.⁴⁹

E. Estimating Coverage Rates

The coverage rate is defined as the percentage of women, infants, and children eligible for WIC who were enrolled in WIC *and* claimed their benefits in an average month in 2019.⁵⁰ Coverage rates are useful for understanding how well WIC reaches those who may benefit from the program.

The source for the number of participants was WIC administrative data from FNS.⁵¹ FNS provides these administrative counts of WIC program participants by State for each of the five WIC participant categories: infants, children, pregnant women, postpartum breastfeeding women, and postpartum non-breastfeeding women. The coverage rates were calculated based on the ratio of WIC participants (numerator) in an

Coverage Rate

Percentage of women, infants, and children eligible for WIC who received WIC benefits in an average month

⁴⁸ The three most recent birth cohorts were pooled to produce a 3-year average rate for each State to reduce year-to-year variation because of small sample sizes in some States.

⁴⁹ National breastfeeding rates were used because breastfeeding rates were not available for the U.S. territories.

⁵⁰ 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).

⁵¹ All WIC administrative data referenced in this report is unpublished internal FNS data.

average month in 2019 to the estimates of individuals eligible for WIC (denominator) in an average month in 2019.

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 2018 report on WIC participant and program characteristics (WIC PC2018 report; Kline et al., 2020). 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.⁵² This implicitly assumes the likelihood an enrolled person's benefits are not claimed does not vary by race or ethnicity or by a child's age.

National coverage rate estimates for 2019 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 4). State coverage rates were also derived for infants, children by year of age, and pregnant and postpartum women and 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).

Each coverage rate is estimated independently based on the number of participating individuals in WIC compared with the estimated number of individuals eligible for WIC in that category. To create a consistent set of estimates, the total number of eligible individuals is the same regardless of how they are stratified by subgroup. This report contains some coverage rate estimates over 100 percent, meaning the number of individuals estimated to be eligible in a particular subgroup was smaller than the number of participants. In large part, it is likely the result of sampling variability in the CPS-ASEC survey data used to estimate the number of eligible individuals (denominator of the rate). However, changes to the CPS-ASEC processing procedures starting with the 2019 CPS-ASEC may also contribute to rates over 100 percent (see section G in chapter 2 of Farson Gray et al., 2021, for more information). Chapter 6 contains more information on measures of statistical uncertainty for the eligibility estimates. Rates over 100 percent are indicated in the notes of each table and figure.

F. Estimating Participation Rates

The participation rate is defined as the percentage of the total population of women, infants, and children who received WIC benefits in an average month in 2019. Participation rates provide information on the percentage of all infants, children, pregnant women, and postpartum women in the Nation who received WIC benefits in 2019.

Participation Rate

Percentage of the total population of women, infants, and children who received WIC benefits in an average month

National participation rate estimates for 2019 were derived for infants, children by year of age, pregnant women, and postpartum breastfeeding and non-breastfeeding women (see chapter 5).

⁵² For example, to estimate the number of WIC participants who were 2 years old, WIC PC2018 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 (Farson Gray et al., 2021) and additional enhancements conducted for this report.

1. Realignment of FNS Regional Offices

On October 1, 2019, the FNS Regions were realigned. The 2019 estimates presented in this report reflect the FNS Regional Offices in effect as of October 1, 2019. With this realignment, the U.S. Virgin Islands moved to the Northeast Region, Iowa moved to the Midwest Region, and Arizona and Utah moved to the Southwest Region. See appendix B in volume II for a list of States and U.S. territories by Region.

2. Alternate Weights for the 2020 CPS-ASEC Survey

Because of the COVID-19 pandemic, the 2020 CPS-ASEC faced difficult interviewing conditions, resulting in a substantial increase in the nonresponse rate for the survey (Rothbaum & Bee, 2021). Specifically, the response rate in March 2020 was 73 percent, 10 percentage points lower than in March 2019. The characteristics of nonrespondents were nonrandom. Nonresponse in the 2020 CPS-ASEC was more strongly associated with median income and educational attainment than in prior years. As a result, respondents had relatively higher income and were more educated than nonrespondents. For the 2019 estimates presented in this report, the study team used a set of alternate weights published by the U.S. Census Bureau to account for nonrandom nonresponse in the 2020 CPS-ASEC (Rothbaum & Bee, 2021). The original weights published by the U.S. Census Bureau resulted in coverage rates over 100 percent for infants and postpartum non-breastfeeding women.

3. Creation of National-Level Standard Errors for the CY 2019 Estimates

The national-level standard errors are historically produced using the CPS-ASEC replicate weights (see appendix E of Trippe et al., 2019). When the alternate 2020 CPS-ASEC weights were released, the replicate weights used to produce the national-level standard errors were not adjusted for the additional nonresponse weighting procedures. As a result, the study team performed procedures to calculate national-level standard errors, in consultation with the U.S. Census Bureau, for use in this report. Chapter 6 provides more detailed information on the methodology used to create the national-level standard errors.

4. Method for Imputing WIC Eligibility via Medicaid Only Among Out-of-Universe Infants in the CPS-ASEC

The U.S. Census Bureau makes periodic improvements to the CPS-ASEC data. For the 2019 CPS-ASEC (used to produce the 2018 WIC eligibility estimates), the U.S. Census Bureau used new data processing procedures that included more accurate information on health insurance coverage and household income. However, these new processing procedures affect how the estimates of the number of infants eligible for WIC are derived. Under the new processing procedures, infants aged 0–3 months can no longer be estimated as adjunctively income-eligible for WIC via Medicaid only. For the 2019 estimates, the study team identified a method for imputing Medicaid eligibility for infants aged 0–3 months in the 2020 CPS-ASEC to create a more complete estimate of infants eligible for WIC in 2019. Appendix E in

volume II describes the method for imputing WIC eligibility via Medicaid only among infants aged 0–3 months in the CPS-ASEC in detail.

5. Revised CY 2016–CY 2018 Estimates of WIC Eligibility

The study team used the method for imputing WIC eligibility via Medicaid only among infants aged 0–3 months in the CPS-ASEC to update the 2016 through 2018 estimates presented in this report (see appendix E in volume II for more information on the change in estimates). The revised 2016–2018 estimates fell within the margin of error of the original 2016–2018 estimates. Tables and figures containing estimates for 2016 through 2018 reflect the updated estimates.

Table 2.1. Steps, Data Sources, Methods, and Adjustment Factors Used for CY 2019 Estimates of WIC Eligibility

Step	Data Source(s)	Methods and Adjustment Factors	
		Infants and Children	
Demographic eligibility	■ 2020 CPS-ASEC, National estimates ■ 2019 ACS, State estimates ■ 2019 PRCS, Puerto Rico estimates ■ 2019 IDB, Other island territories estimates	Identify individuals aged 0, 1, 2, 3, and 4 in each survey.	
Weight adjustment	■ National estimates – Postcensal population estimates from Census Bureau and March CPS-ASEC for 2017, 2018, 2019, and 2020 ■ State and Puerto Rico estimates – Postcensal population estimates from U.S. Census Bureau for July 2019	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, Not Hispanic; Black-Only, Not Hispanic; Two or More Races or Other Race, Not Hispanic; and Hispanic/Latino).	
		Adjustment Factors for Females	Adjustment Factors for Males
		■ Infants – White-Only, Not Hispanic: 0.9963 – Black-Only, Not Hispanic: 1.0456 – Two or More Races or Other Race, Not Hispanic: 1.0000 – Hispanic/Latino: 1.0030 ■ 1-year-old children – White-Only, Not Hispanic: 0.9835 – Black-Only, Not Hispanic: 1.0000 – Two or More Races or Other Race, Not Hispanic: 0.8448 – Hispanic/Latino: 1.0000 ■ 2-year-old children – White-Only, Not Hispanic: 1.0000 – Black-Only, Not Hispanic: 1.0000 – Two or More Races or Other Race, Not Hispanic: 0.9333 – Hispanic/Latino: 1.0133 ■ 3-year-old children – White-Only, Not Hispanic: 1.0000 – Black-Only, Not Hispanic: 0.9729 – Two or More Races or Other Race, Not Hispanic: 0.9174 – Hispanic/Latino: 1.0000 ■ 4-year-old children – White-Only, Not Hispanic: 1.0065 – Black-Only, Not Hispanic: 0.9989 – Two or More Races or Other Race, Not Hispanic: 1.0000 – Hispanic/Latino: 1.0045	■ Infants – White-Only, Not Hispanic: 1.0229 – Black-Only, Not Hispanic: 1.1327 – Two or More Races or Other Race, Not Hispanic: 1.0000 – Hispanic/Latino: 1.0057 ■ 1-year-old children – White-Only, Not Hispanic: 1.0000 – Black-Only, Not Hispanic: 0.9113 – Two or More Races or Other Race, Not Hispanic: 0.8944 – Hispanic/Latino: 1.0317 ■ 2-year-old children – White-Only, Not Hispanic: 1.0000 – Black-Only, Not Hispanic: 0.9763 – Two or More Races or Other Race, Not Hispanic: 0.9999 – Hispanic/Latino: 1.0060 ■ 3-year-old children – White-Only, Not Hispanic: 1.0000 – Black-Only, Not Hispanic: 1.0997 – Two or More Races or Other Race, Not Hispanic: 0.9872 – Hispanic/Latino: 1.0055 ■ 4-year-old children – White-Only, Not Hispanic: 0.9967 – Black-Only, Not Hispanic: 0.9934 – Two or More Races or Other Race, Not Hispanic: 1.0799 – Hispanic/Latino: 1.0000

Step	Data Source(s)	Methods and Adjustment Factors
Income eligibility	2020 CPS-ASEC, National estimates 2019 ACS, State estimates 2019 PRCS, Puerto Rico estimates 2019 IDB, Other island territories estimates - Blended 2018 and 2019 FPGs	Count as eligible if prior year's annual income was $\leq$ 185 percent of the Federal Poverty Guidelines.
Adjunctive income eligibility	2020 CPS-ASEC 2019 ACS 2019 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 2014 and 2015, as computed from 2014 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): 1.0593 - Infants adjustment factors by race and ethnicity (used for estimates from CPS-ASEC and ACS data) - White-Only, Not Hispanic: 1.1110 - All others: 1.0141 - Children adjustment factor assuming 12-month certification periods (used for estimates from PRCS and IDB data): 1.0681 - Children adjustment factors by race and ethnicity (used for estimates from CPS-ASEC data) - White-Only, Not Hispanic: 1.1126 - All others: 1.0326
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: 0.9700 - Children: 0.9900
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 of 3 years of 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 or mothers is not exactly equal to the number of infants). - Adjustment factors - White-Only, Not Hispanic: 0.9911 - Black-Only, Not Hispanic: 1.0019 - Two or More Races or Other Race, Not Hispanic: 0.9944 - Hispanic/Latino: 0.9977
For pregnant women: Adjust for length of pregnancy and income during pregnancy	2004, 2008, and 2014 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 (0.91 factor). Combined adjustment factor: 0.6825

Step	Data Source(s)	Methods and Adjustment Factors
For postpartum women: Adjust for breastfeeding status	CDC NIS breastfeeding rates computed for 2017 birth cohort (NIS survey years 2018 and 2019)	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): 0.4629 ■ Breastfeeding by race and ethnicity (used for estimates from CPS-ASEC) – White-Only, Not Hispanic: 0.4695 – Black-Only, Not Hispanic: 0.3904 – Two or More Races or Other Race, Not Hispanic: 0.4677 – Hispanic/Latino: 0.4933 ■ Non-breastfeeding (used for estimates from PRCS and IDB data): 0.2265 ■ Non-breastfeeding by race and ethnicity (used for estimates from CPS-ASEC) – White-Only, Not Hispanic: 0.2248 – Black-Only, Not Hispanic: 0.2619 – Two or More Races or Other Race, Not Hispanic: 0.2242 – Hispanic/Latino: 0.2103
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

Note: 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; because of differences in breastfeeding rates, adjustment factors differed for mothers eligible for WIC and the total population of mothers.

ACS = American Community Survey; CDC = Centers for Disease Control and Prevention; CNSTAT = Committee on National Statistics; CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year; IDB = International Data Base; NIS = National Immunization Survey; PRCS = Puerto Rico Community Survey; SIPP = Survey of Income and Program Participation

^a An adjustment factor for the total number of children (1.0652) was also calculated but not used for any adjustment. The separate adjustment factors by race and ethnicity were used for the estimates.

Sources: The data sources listed in this table are as follows, in order of mention: for 2020 CPS-ASEC data, see U.S. Census Bureau, n.d.a; for 2019 ACS and PRCS data, see IPUMS-USA, n.d.; for 2019 IDB data, see U.S. Census Bureau, n.d.b; for July 2019 postcensal population estimate data, see U.S. Census Bureau, 2020a, 2020b, 2020c; for WIC income eligibility criteria, see 7 C.F.R. § 246; for 2018 Federal Poverty Guidelines, see HHS, 2018; for 2019 Federal Poverty Guidelines, see HHS, 2019; for 2014–2017 National Vital Statistics data, see National Center for Health Statistics, n.d.; for 2004, 2008, and 2014 SIPP panel data, see U.S. Census Bureau, n.d.c; for the Committee on National Statistics panel data, see Ver Ploeg & Betson, 2003.

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 2019

Step	Infants	1-Year-Old Children	2-Year-Old Children	3-Year-Old Children	4-Year-Old Children	All Children	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Non-Breastfeeding Women	Total
Total number of infants, children in CPS-ASEC data	3,648,076	3,930,013	3,917,057	3,936,921	3,994,149	15,778,141	–	–	–	19,426,217
Number after adjustment for CPS undercount, overcount	3,709,178	3,839,398	3,902,595	3,931,631	4,011,408	15,685,032	–	–	–	19,394,210
Number with annual income ≤ 185 percent of the FPG	1,060,653	1,124,681	1,174,502	1,181,270	1,308,799	4,789,253	–	–	–	5,849,906
Number adjunctively income-eligible and with annual income > 185 percent of the FPG ^a	504,966	468,238	506,887	489,355	498,653	1,963,133	–	–	–	2,468,099
Through SNAP	148,237	116,671	118,532	141,903	119,639	496,745	–	–	–	644,981
Through TANF	10,945	4,429	10,722	4,048	2,416	21,615	–	–	–	32,560
Through Medicaid	345,784	347,138	377,633	343,404	376,599	1,444,773	–	–	–	1,790,557
Total number income- and adjunctively income-eligible	1,565,619	1,592,919	1,681,389	1,670,625	1,807,452	6,752,386	–	–	–	8,318,005
Number after adjustment for monthly income and certification periods	1,642,979	1,688,738	1,785,897	1,771,992	1,917,819	7,164,446	–	–	–	8,807,425
Total number eligible: Number after adjustment for nutritional risk (infants and children)	1,593,689	1,671,851	1,768,038	1,754,272	1,898,641	7,092,802	–	–	–	8,686,491
Starting point for estimates of women is number of eligible infants	–	–	–	–	–	–	1,593,689	1,593,689	1,593,689	4,781,068
Number after adjustment for length of pregnancy and income of woman during pregnancy	–	–	–	–	–	–	1,087,693	–	–	1,087,693
Number after adjustment for multiple births and infant deaths	–	–	–	–	–	–	1,083,065	1,586,908	1,586,908	4,256,881

Step	Infants	1-Year-Old Children	2-Year-Old Children	3-Year-Old Children	4-Year-Old Children	All Children	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Non-Breastfeeding Women	Total
Number after adjustment for breastfeeding	–	–	–	–	–	–	–	731,650	361,085	1,092,735
Total number eligible: Number after adjustment for nutritional risk (pregnant and postpartum women)	–	–	–	–	–	–	1,050,573	731,650	361,085	2,143,308
Total number eligible in the 50 States and the District of Columbia, excluding the U.S. territories served by WIC	1,593,689	1,671,851	1,768,038	1,754,272	1,898,641	7,092,802	1,050,573	731,650	361,085	10,829,799
Total number eligible in all U.S. territories served by WIC ^b	23,453	24,299	25,785	27,304	28,853	106,241	15,479	10,823	5,296	161,293
Total number eligible in the 50 States, the District of Columbia, and Puerto Rico and the other U.S. territories served by WIC	1,617,143	1,696,150	1,793,823	1,781,576	1,927,494	7,199,043	1,066,052	742,473	366,381	10,991,092

CPS = Current Population Survey; CPS-ASEC = CPS Annual Social and Economic Supplement; CY = calendar year; FPG = Federal Poverty Guidelines; SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families

^a Adjunctive income 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.; U.S. Census Bureau, n.d.a, n.d.b; Kline et al., 2020

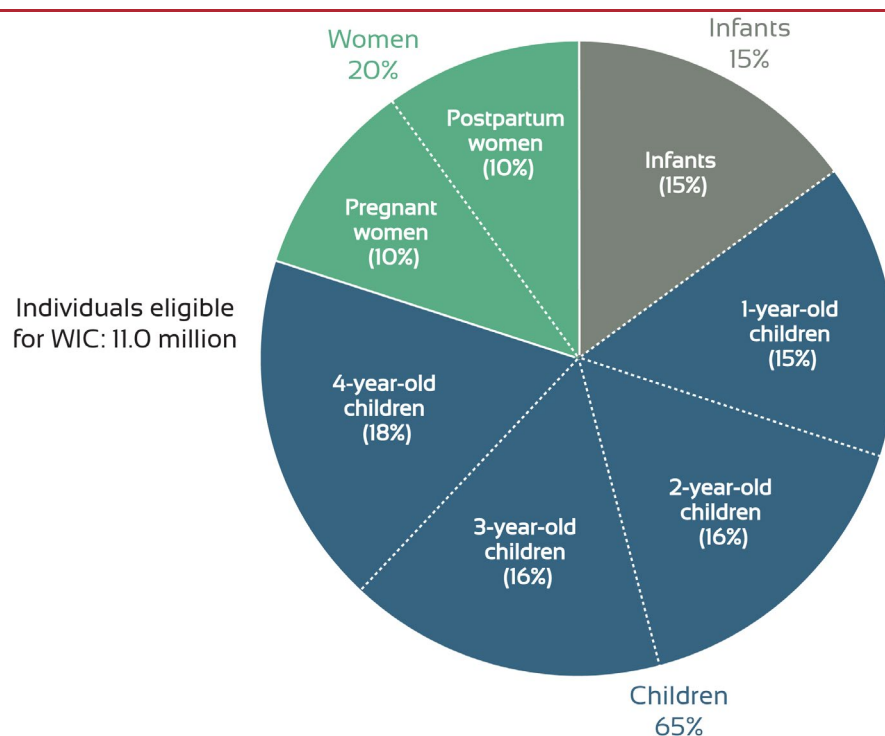
Chapter 3. Estimates of WIC Eligibility for CY 2019

This chapter presents estimates of WIC eligibility in 2019. 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 2018 to 2019. Section D discusses general trends in WIC eligibility from 2005 to 2019.⁵³

A. National-Level Estimates of Individuals Eligible for WIC

In an average month in 2019, 11.0 million individuals were eligible for WIC in all States and the U.S. territories served by WIC (see figure 3.1). Of those eligible for WIC, almost two-thirds (65 percent) were children, 15 percent were infants, and 20 percent were women.

Figure 3.1. Distribution of Individuals Eligible for WIC: CY 2019



CY = calendar year

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

Children eligible for WIC were evenly distributed by year of age (see table 3.1). Among total eligible individuals, 15 percent were 1-year-old children; 16 percent were 2-year-old and 3-year-old children; and 18 percent were 4-year-old children. Pregnant and postpartum women each represented about 10 percent of the eligible population. Postpartum breastfeeding women represented a larger proportion than postpartum non-breastfeeding women (7 versus 3 percent).

⁵³ Estimates for 2016–2019 differ methodologically from earlier estimates because of changes to the underlying data sources. Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The 2016–2018 estimates presented in this report were updated to incorporate the methods used to impute Medicaid eligibility among infants aged 0–3 months in the CPS-ASEC (see appendix E in volume II for more information).

Table 3.1. Estimated Average Monthly Number of Individuals Eligible for WIC by Participant Category: CY 2019

Participant Category	Number Eligible	Percent of Total Eligible	Total Population	Eligibility Rate
Infants	1,617,143	14.7	3,736,739	43.3
Children	7,199,043	65.5	15,805,699	45.5
1-year-old children	1,696,150	15.4	3,866,196	43.9
2-year-old children	1,793,823	16.3	3,931,383	45.6
3-year-old children	1,781,576	16.2	3,963,295	45.0
4-year-old children	1,927,494	17.5	4,044,826	47.7
Women	2,174,906	19.8	6,504,274	33.4
Pregnant women	1,066,052	9.7	2,787,546	38.2
Postpartum women	1,108,854	10.1	3,716,728	29.8
Breastfeeding women	742,473	6.8	2,020,722	36.7
Non-breastfeeding women	366,381	3.3	1,696,005	21.6
Total	10,991,092	100.0	26,046,712	42.2

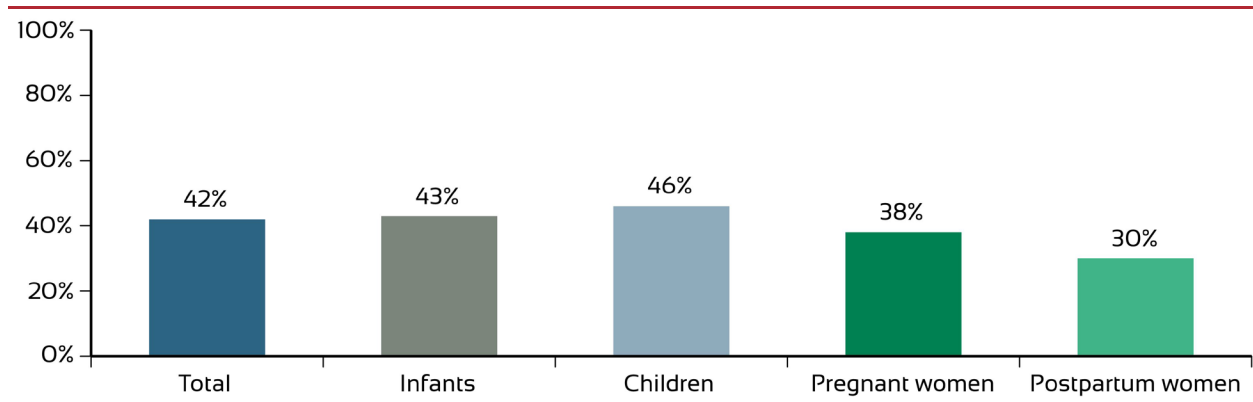
Note: The total population consists of individuals in the 50 States, the District of Columbia, and Puerto Rico and the other U.S. territories served by WIC in each participant category. The eligibility rate is the ratio of the total number of individuals eligible for WIC to the total population in each participant category. The average monthly population of postpartum women includes all women who gave birth less than 1 year prior, even if they are not categorically eligible for WIC because they are more than 6 months postpartum and are not breastfeeding.

CY = calendar year

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

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 2019, 43 percent of all infants and 46 percent of all children were eligible for WIC (see figure 3.2 and table 3.1). Thirty-eight percent of all pregnant women and 30 percent of all postpartum women were eligible. The eligibility rate is lower for non-breastfeeding women (22 percent) than for breastfeeding women (37 percent) in part because non-breastfeeding women are only eligible for the first 6 months postpartum.

Figure 3.2. WIC Eligibility Rate by Participant Category: CY 2019



CY = calendar year

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

1. Characteristics of Infants and Children Eligible for WIC

The CPS-ASEC data (U.S. Census Bureau, n.d.a) were used to examine the characteristics of infants and children identified as eligible for WIC in 2019 (see table 3.2).⁵⁴ More than two-thirds of infants and children eligible for WIC were White (68 percent), 21 percent were Black, and 11 percent were another race or multiple races.⁵⁵ More than one-third of eligible infants and children were Hispanic/Latino (34 percent), and a majority lived in households with two parents (58 percent; see figure 3.3). About 6 percent of eligible infants and children were living with a household member (aged 17 or older) who had served in the U.S. military, and 1 percent were living with a household member who was serving in the U.S. military in 2019. Most infants and children eligible for WIC lived with families receiving Medicaid (75 percent, see figure 3.3). The characteristics of infants 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 (66 percent versus 56 percent) and less likely to live with working parents (66 percent versus 73 percent⁵⁶). Infants eligible for WIC were also less likely to live in households with Medicaid receipt only (40 percent versus 45 percent).⁵⁷

58 percent
of infants and children
eligible for WIC lived in
two-parent households

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 exceeding 185 percent of the Federal Poverty Guidelines but participating in Medicaid, SNAP, or TANF) compared with those 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).⁵⁸ For example, 70 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 (66 percent versus 55 percent) and live with one or more working parents (81 percent versus 68 percent) than those who were directly income-eligible.

⁵⁴ Table 3.2 presents characteristics of infants and children eligible for WIC based on the CPS-ASEC data using weights adjusted for the undercount and 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.

⁵⁵ The unrounded percentage is 11.469 percent, which rounds to 11 percent.

⁵⁶ The unrounded percentage is 73.490 percent, which rounds to 73 percent.

⁵⁷ See chapter 2 for more information on estimates of WIC eligibility via Medicaid only for infants.

⁵⁸ Although 30 percent of infants and children eligible for WIC were in households with annual income exceeding 185 percent of the Federal Poverty Guidelines, the proportion of WIC participants in households with annual income exceeding 185 percent of the Federal Poverty Guidelines was much lower—2.7 percent of total participants in 2018 (Kline et al., 2020). There are various reasons a small percentage of participants had income exceeding the poverty guidelines. One reason is 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 et al., 2013). Moreover, the programs that confer adjunctive income 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 Income Eligibility: CY 2019

Characteristics	Infants Eligible for WIC			Children Eligible for WIC			Infants and Children Eligible for WIC		
	Family Income ≤ 185% FPG ^a	Adjunctively Income- Eligible > 185% FPG ^b	Total	Family Income ≤ 185% FPG ^a	Adjunctively Income- Eligible > 185% FPG ^b	Total	Family Income ≤ 185% FPG ^a	Adjunctively Income- Eligible > 185% FPG ^b	Total
Total	1,078,638	515,052	1,593,689	5,021,745	2,071,057	7,092,802	6,100,383	2,586,109	8,686,491
Gender	—	—	—	—	—	—	—	—	—
Male	50.3	48.1	49.6	51.8	53.4	52.3	51.6	52.3	51.8
Female	49.7	51.9	50.4	48.2	46.6	47.7	48.4	47.7	48.2
Race	—	—	—	—	—	—	—	—	—
White	67.2	66.8	67.1	65.5	73.3	67.8	65.8	72.0	67.6
Black	22.8	20.8	22.2	22.4	16.3	20.6	22.5	17.2	20.9
Other	10.0	12.4	10.8	12.1	10.4	11.6	11.7	10.8	11.5
Hispanic Ethnicity	—	—	—	—	—	—	—	—	—
Hispanic/Latino	34.5	30.2	33.1	35.1	33.5	34.6	35.0	32.8	34.3
Not Hispanic/Latino	65.5	69.8	66.9	64.9	66.5	65.4	65.0	67.2	65.7
Living arrangement	—	—	—	—	—	—	—	—	—
Two-parent family	62.7	72.4	65.8	52.8	64.9	56.3	54.6	66.4	58.1
Single-parent family	32.9	25.2	30.4	41.3	29.7	37.9	39.9	28.8	36.6
No-parent family	4.4	2.4	3.7	5.9	5.5	5.7	5.6	4.9	5.4
Related non-parent caretaker	0.6	2.4	1.2	3.1	5.5	3.8	2.7	4.9	3.3
Unrelated non-parent caretaker	3.7	0.0	2.5	2.7	0.0	1.9	2.9	0.0	2.0
Military status of household members	—	—	—	—	—	—	—	—	—
Ever served in U.S. military	3.4	9.9	5.5	4.0	10.9	6.0	3.9	10.7	5.9
Serving in U.S. military in 2019 ^c	4.0	0.0	2.7	1.6	0.1	1.1	2.0	0.1	1.4

Characteristics	Infants Eligible for WIC			Children Eligible for WIC			Infants and Children Eligible for WIC		
	Family Income ≤ 185% FPG ^a	Adjunctively Income- Eligible > 185% FPG ^b	Total	Family Income ≤ 185% FPG ^a	Adjunctively Income- Eligible > 185% FPG ^b	Total	Family Income ≤ 185% FPG ^a	Adjunctively Income- Eligible > 185% FPG ^b	Total
Number of individuals in household	—	—	—	—	—	—	—	—	—
2	4.3	0.0	2.9	5.8	4.5	5.4	5.5	3.6	4.9
3	19.3	20.8	19.8	18.6	14.4	17.4	18.7	15.6	17.8
4	23.6	35.7	27.5	26.4	29.1	27.2	25.9	30.4	27.3
5	20.3	20.7	20.4	19.5	25.4	21.3	19.7	24.5	21.1
6 or more	32.5	22.9	29.4	29.7	26.6	28.8	30.2	25.8	28.9
Percent with working parent(s)	61.5	75.1	65.9	69.8	82.3	73.5	68.4	80.9	72.1
Annual family income relative to FPG ^b	—	—	—	—	—	—	—	—	—
No income	8.4	0.0	5.7	6.6	0.0	4.7	6.9	0.0	4.8
Up to 50% FPG	16.2	0.0	11.0	14.4	0.0	10.2	14.7	0.0	10.3
More than 50% up to 100% FPG	22.8	0.0	15.4	24.3	0.0	17.2	24.0	0.0	16.9
More than 100% up to 130% FPG	18.7	0.0	12.6	19.4	0.0	13.7	19.2	0.0	13.5
More than 130% up to 150% FPG	11.9	0.0	8.0	12.5	0.0	8.9	12.4	0.0	8.7
More than 150% up to 185% FPG	22.0	0.0	14.9	22.9	0.0	16.2	22.7	0.0	16.0
More than 185% up to 200% FPG	0.0	13.5	4.4	0.0	11.8	3.5	0.0	12.2	3.6
More than 200% FPG ^d	0.0	86.5	28.0	0.0	88.2	25.7	0.0	87.8	26.2

Characteristics	Infants Eligible for WIC			Children Eligible for WIC			Infants and Children Eligible for WIC		
	Family Income ≤ 185% FPG ^a	Adjunctively Income- Eligible > 185% FPG ^b	Total	Family Income ≤ 185% FPG ^a	Adjunctively Income- Eligible > 185% FPG ^b	Total	Family Income ≤ 185% FPG ^a	Adjunctively Income- Eligible > 185% FPG ^b	Total
Receipt of other benefits	—	—	—	—	—	—	—	—	—
No benefit receipt	27.2	0.0	18.4	25.3	0.0	17.9	25.6	0.0	18.0
Medicaid, SNAP, and TANF	4.5	0.6	3.3	4.4	1.6	3.6	4.4	1.4	3.5
SNAP and TANF only	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medicaid and SNAP only	31.0	20.7	27.7	31.5	14.9	26.7	31.4	16.0	26.8
Medicaid and TANF only	0.2	2.1	0.8	0.4	1.1	0.6	0.3	1.3	0.6
SNAP only	10.7	7.5	9.6	5.4	8.6	6.4	6.4	8.4	7.0
TANF only	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Medicaid only	26.4	68.8	40.1	33.0	73.7	44.9	31.8	72.8	44.0

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

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year; FPG = Federal Poverty Guidelines; SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families

^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 and that partner's dependents. Infants and children in economic units with annual income less than or equal to 185 percent of the 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.

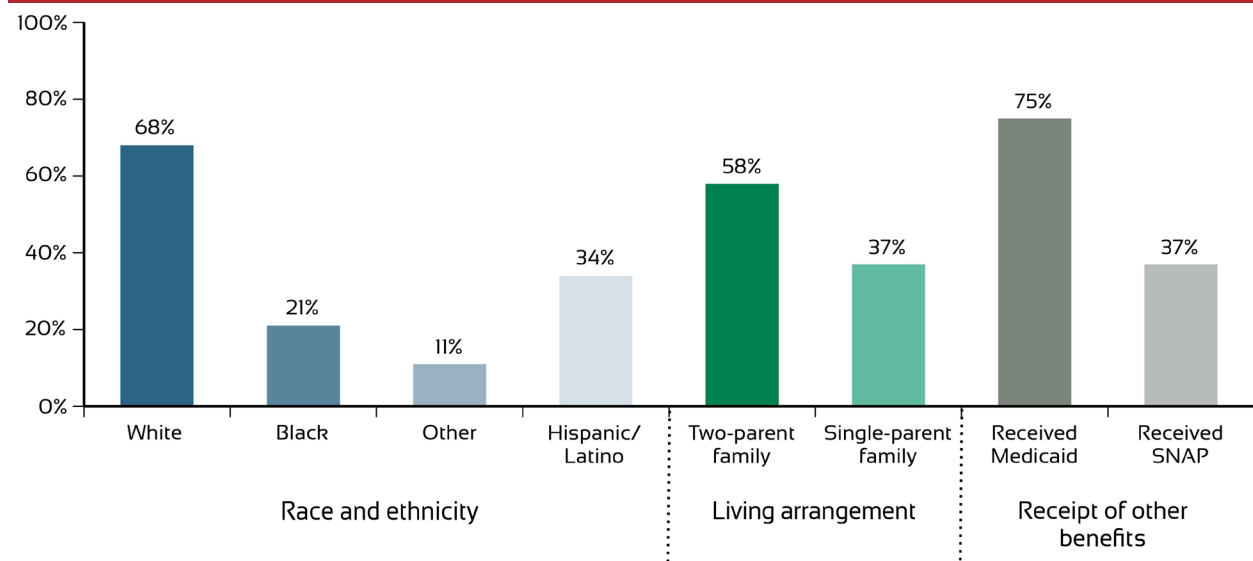
^c The military status of household members who were currently serving in the U.S. military was included on the CPS-ASEC only if they resided in civilian housing on or off a military base.

^d Although 29.8 percent of infants and children eligible for WIC were in households with annual income exceeding 185 percent of the Federal Poverty Guidelines, the proportion of WIC participants in households with annual income exceeding 185 percent of the Federal Poverty Guidelines was much lower—2.7 percent of total participants in 2018 (Kline et al., 2020). The table shows the mutually exclusive count of directly WIC income-eligible infants and children (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.

— denotes blank cells

Source: U.S. Census Bureau, n.d.a

Figure 3.3. Characteristics of Infants and Children Eligible for WIC: CY 2019



Note: The race and ethnicity categories are not mutually exclusive because the race categories include both Hispanic/Latino and non-Hispanic/Latino. This figure does not include estimates for Puerto Rico or the other U.S. territories.

CY = calendar year

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

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 in volume II for a list of States and U.S. territories by Region).⁵⁹ In 2019, the Southeast Region had the greatest percentage of eligible individuals—22 percent (see table 3.3) out of the total population eligible for WIC. In contrast, the Mountain Plains Region represented the smallest share of eligible individuals—5 percent. The distribution of individuals eligible for WIC shows similar regional variations across participant categories.

⁵⁹ On October 1, 2019, the FNS Regions were realigned. The 2019 estimates presented in this report reflect the realigned FNS Regions.

Table 3.3. Distribution of Individuals Eligible for WIC (Percentage) by FNS Region and Participant Category: CY 2019

FNS Region	Infants	Children	Pregnant Women	Postpartum Women	Total
Northeast	8.9	8.9	8.9	9.1	8.9
Mid-Atlantic	11.1	11.3	11.1	11.1	11.2
Southeast	23.0	21.9	23.0	22.1	22.2
Midwest	14.9	15.6	14.9	14.6	15.4
Southwest	19.8	19.1	19.8	19.6	19.3
Mountain Plains	5.5	5.4	5.5	5.6	5.4
Western	16.8	17.8	16.8	17.9	17.6
Total	100.0	100.0	100.0	100.0	100.0

Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this table reflect the realigned FNS Regions.

CY = calendar year; FNS = Food and Nutrition Service

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

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 (47 and 46 percent, respectively) and lowest in the Mountain Plains Region (37 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 of the national estimate), 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 2019.

Table 3.4. WIC Eligibility Rates by FNS Region and Participant Category: CY 2019

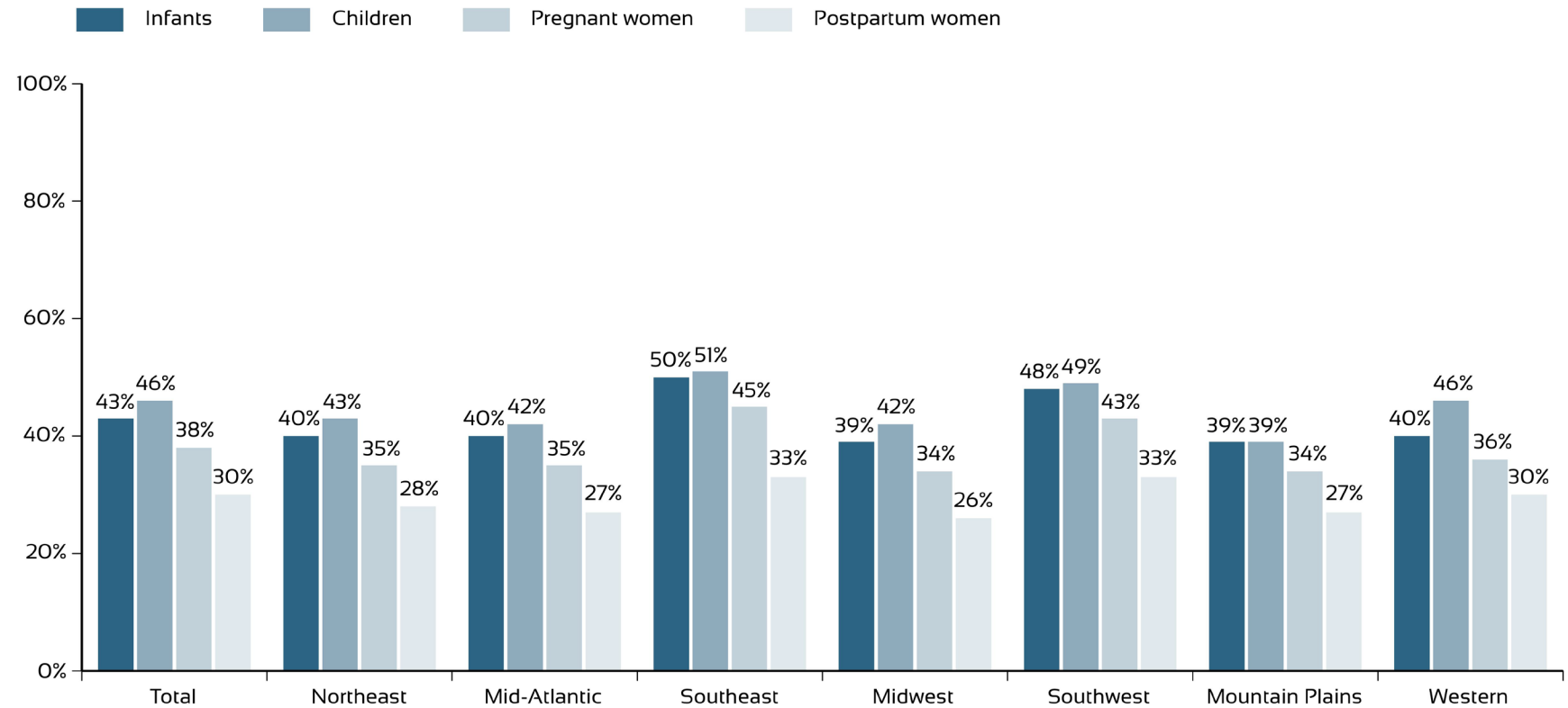
FNS Region	Infants	Children	Pregnant Women	Postpartum Women	Total
Northeast	39.5	42.8	34.9	27.9	39.3
Mid-Atlantic	39.7	42.2	35.1	27.5	39.0
Southeast	50.5	50.5	44.6	33.4	47.4
Midwest	38.9	42.1	34.4	26.3	38.6
Southwest	48.2	48.8	42.6	32.8	45.8
Mountain Plains	38.7	38.9	34.2	27.1	36.7
Western	40.5	46.1	35.8	29.8	41.8
Total	43.3	45.5	38.2	29.8	42.2

Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this table reflect the realigned FNS Regions.

CY = calendar year; FNS = Food and Nutrition Service

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

Figure 3.4. WIC Eligibility Rates by FNS Region and Participant Category: CY 2019



Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this figure reflect the realigned FNS Regions.

CY = calendar year; FNS = Food and Nutrition Service

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

Table 3.5. Distribution of Individuals Eligible for WIC (Percentage) by State and FNS Region: CY 2019

State	Percent Share of National Estimate of Population Eligible for WIC
Alabama	1.7
Alaska	0.3
Arizona	2.3
Arkansas	1.2
California	11.9
Colorado	1.4
Connecticut	0.8
Delaware	0.3
District of Columbia	0.2
Florida	6.7
Georgia	3.7
Hawaii	0.4
Idaho	0.6
Illinois	3.4
Indiana	2.1
Iowa	0.9
Kansas	0.8
Kentucky	1.5
Louisiana	1.9
Maine	0.3
Maryland	1.6
Massachusetts	1.5
Michigan	2.9
Minnesota	1.4
Mississippi	1.2
Missouri	1.8
Montana	0.3
Nebraska	0.5
Nevada	0.9
New Hampshire	0.2
New Jersey	2.1
New Mexico	0.8
New York	5.7
North Carolina	3.3
North Dakota	0.2
Ohio	3.3
Oklahoma	1.4
Oregon	1.1
Pennsylvania	3.3
Puerto Rico	1.2

State	Percent Share of National Estimate of Population Eligible for WIC
Rhode Island	0.2
South Carolina	1.8
South Dakota	0.3
Tennessee	2.3
Texas	10.8
Utah	0.9
Vermont	0.1
Virginia	2.0
Washington	2.2
West Virginia	0.5
Wisconsin	1.4
Wyoming	0.1
FNS Region	
Northeast	8.9
Mid-Atlantic	11.2
Southeast	22.2
Midwest	15.4
Southwest	19.3
Mountain Plains	5.4
Western	17.6
Total	100.0

Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this table reflect the realigned FNS Regions. 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 small sample sizes. CY = calendar year; FNS = Food and Nutrition Service; ITO = Indian Tribal Organization
Sources: IPUMS-USA, n.d.; U.S. Census Bureau, n.d.a, n.d.b

C. Changes in the Numbers of Individuals Eligible for WIC: CY 2018–CY 2019

Overall, the estimated total number of individuals eligible for WIC decreased between 2018 and 2019 from 12.0 million to 11.0 million, a decrease of 8 percent (see table 3.6). The decrease in the estimated number of eligible individuals was relatively consistent across all WIC participant categories. The estimated number of eligible infants, pregnant women, and postpartum women decreased by 9 percent, whereas the number of eligible children decreased by 8 percent. The decrease in the number of individuals eligible for WIC between 2018 and 2019 may be partially attributable to changes in the economy and a decline in SNAP and Medicaid participation. The United States had a historically low unemployment rate in 2019 (Edwards & Smith, 2020), and the number of individuals living below the poverty level declined from 38.8 million in 2018 to 34.8 million in 2019 (Cronquist, 2021). SNAP participation decreased by 5.1 million individuals between fiscal year 2018 and fiscal year 2019 (Cronquist, 2021), and monthly childhood enrollment in Medicaid and the Children’s Health Insurance Program declined by 1 percentage point between December 2018 and July 2019 (Kaiser Family Foundation, 2019). However, the decrease may also be partially attributable to nonrandom nonresponse in the 2020 CPS-ASEC, despite the use of alternate weights developed by the U.S. Census Bureau.

The percentage changes in the population eligible for WIC shown in table 3.6 can also be viewed as the combined percent change in the total population and the percent change in the eligibility rate for each participant category. For example, the 9 percent decrease in the total number of infants eligible for WIC can be largely attributed to a decrease in the eligibility rate among infants: the total population of infants decreased by 2 percent, but the eligibility rate decreased by 7 percent. As a result, the total number of children eligible for WIC decreased by 9 percent.

Table 3.6. Changes in the Total Population, Total WIC Eligibility, and WIC Eligibility Rates by Participant Category: CY 2018–CY 2019

Participant Category	2018	2019	Percent Change 2018–2019
Total Population			
Infants	3,817,508	3,736,739	-2.1
Children	16,063,431	15,805,699	-1.6*
1-year-old children	3,924,580	3,866,196	-1.5
2-year-old children	3,974,744	3,931,383	-1.1
3-year-old children	4,050,942	3,963,295	-2.2*
4-year-old children	4,113,165	4,044,826	-1.7
Pregnant women	2,847,899	2,787,546	-2.1
Postpartum women	3,797,198	3,716,728	-2.1
Breastfeeding women	2,222,934	2,020,722	-9.1*
Non-breastfeeding women	1,574,264	1,696,005	7.7*
Total	26,526,035	26,046,712	-1.8*
Total Eligible			
Infants	1,778,074	1,617,143	-9.1*
Children	7,827,066	7,199,043	-8.0*
1-year-old children	1,925,732	1,696,150	-11.9*
2-year-old children	1,931,721	1,793,823	-7.1*
3-year-old children	2,051,732	1,781,576	-13.2*
4-year-old children	1,917,881	1,927,494	0.5
Pregnant women	1,172,560	1,066,052	-9.1*
Postpartum women	1,214,917	1,108,854	-8.7*
Breastfeeding women	806,186	742,473	-7.9*
Non-breastfeeding women	408,731	366,381	-10.4*
Total	11,992,617	10,991,092	-8.4*

Participant Category	2018	2019	Percent Change 2018–2019
Eligibility Rate			
Infants	46.6	43.3	-7.1*
Children	48.7	45.5	-6.5*
1-year-old children	49.1	43.9	-10.6*
2-year-old children	48.6	45.6	-6.1*
3-year-old children	50.6	45.0	-11.2*
4-year-old children	46.6	47.7	2.2
Pregnant women	41.2	38.2	-7.1*
Postpartum women	32.0	29.8	-6.8*
Breastfeeding women	36.3	36.7	1.3
Non-breastfeeding women	26.0	21.6	-16.8*
Total	45.2	42.2	-6.7*

Note: The 2018 estimates presented in this report were updated to incorporate the methods used to impute Medicaid eligibility among infants aged 0–3 months in the CPS-ASEC (see appendix E in volume II for more information). The average monthly population of postpartum women includes all women who gave birth less than 1 year prior, even if they are not categorically eligible for WIC because they are more than 6 months postpartum and are not breastfeeding.

* indicates a statistically significant difference between the 2018 and 2019 estimates of individuals eligible for WIC or WIC eligibility rate at the 95 percent confidence level. The statistical significance testing was conducted on the 2018–2019 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.

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year

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

D. Trends in WIC Eligibility Estimates: CY 2005–CY 2019

The estimates for 2016–2019 presented in this report differ methodologically from earlier estimates because of changes to the underlying data sources (see chapter 2 of Farson Gray et al., 2021, for more information).⁶⁰ Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution. However, the relative share of the eligible population by participant category remained the same over time: children consistently made up the largest proportion, followed by infants, pregnant women, postpartum breastfeeding women, and postpartum non-breastfeeding women (see table 3.7). Since 2016, the number of individuals eligible for WIC has consistently declined across all participant categories.

As figure 3.5 shows, trends in WIC eligibility estimates by participant category have remained relatively stable across all years. The decrease in the number of infants estimated to be eligible for WIC between 2015 and 2016 can largely be attributed to updated adjustment factors using the 2014 SIPP and changes to the CPS-ASEC (see chapter 2 and appendix E of Farson Gray et al., 2021, for more information).

⁶⁰ The 2016–2019 estimates presented in this report use a consistent methodology.

Table 3.7. Estimated Average Monthly Number of Individuals Eligible for WIC by Year and Participant Category: CY 2005–CY 2019

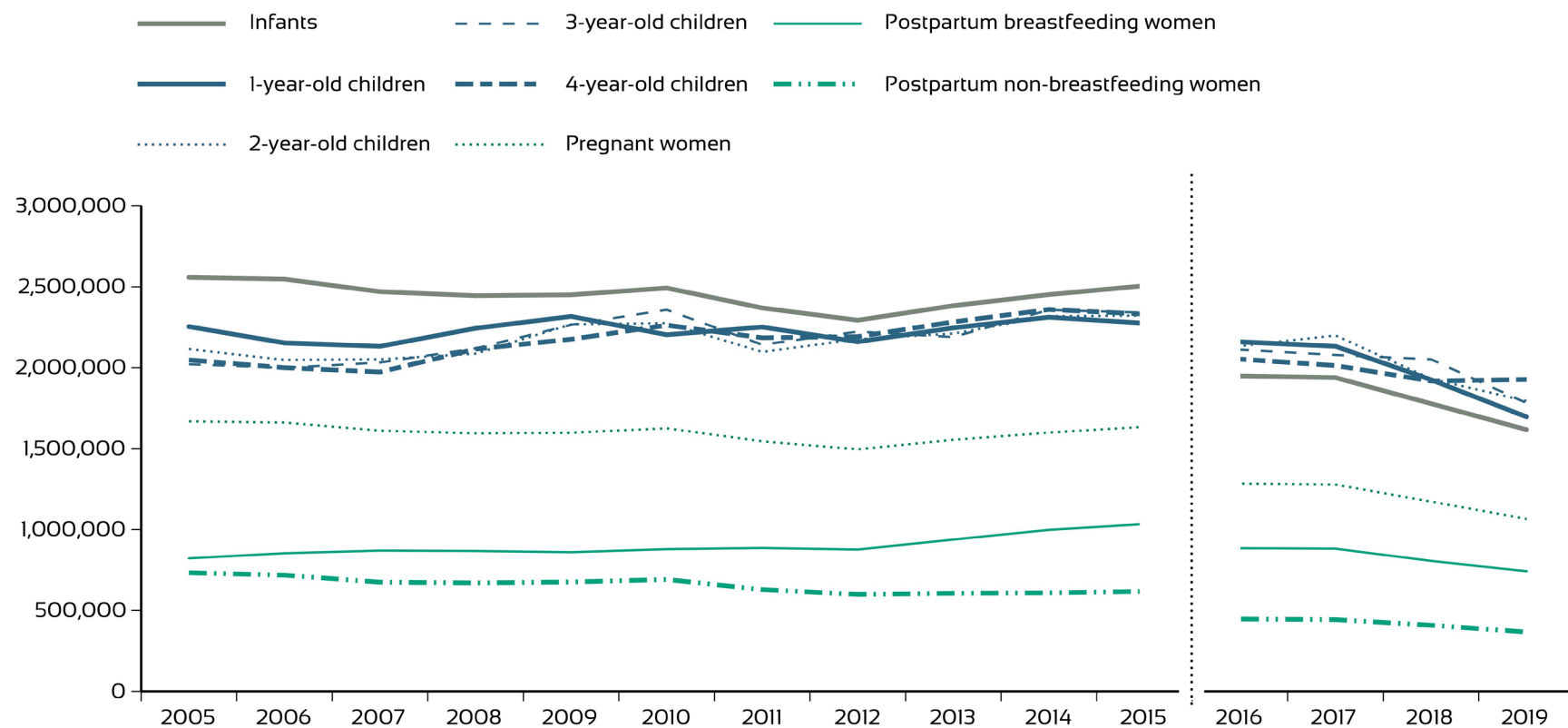
Year	Infants	Children	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Non-Breastfeeding Women	Total
2005	2,558,198	8,438,790	1,668,448	822,301	732,981	14,220,718
2006	2,547,352	8,199,817	1,661,374	853,615	718,203	13,980,361
2007	2,469,895	8,189,922	1,610,857	870,455	674,522	13,815,651
2008	2,444,907	8,565,160	1,594,559	867,826	670,086	14,142,538
2009	2,450,486	9,025,534	1,598,198	860,220	675,687	14,610,125
2010	2,492,692	9,100,231	1,625,725	879,159	691,372	14,789,179
2011	2,369,335	8,675,794	1,545,272	886,444	628,865	14,105,710
2012	2,293,360	8,752,082	1,495,721	876,592	599,108	14,016,864
2013	2,383,446	8,929,389	1,554,475	938,157	606,333	14,411,800
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	1,949,098	8,458,358	1,284,584	885,062	447,354	13,024,455
2017	1,938,740	8,423,507	1,277,876	882,291	443,601	12,966,016
2018	1,778,074	7,827,066	1,172,560	806,186	408,731	11,992,617
2019	1,617,143	7,199,043	1,066,052	742,473	366,381	10,991,092

Note: Estimates for 2016–2019 differ methodologically from earlier estimates because of changes to the underlying data sources. Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The 2016–2018 estimates presented in this report were updated to incorporate the methods used to impute Medicaid eligibility among infants aged 0–3 months in the CPS-ASEC (see appendix E in volume II for more information).

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year

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

Figure 3.5. Trends in WIC Eligibility by Participant Category: CY 2005–CY 2019



Note: Estimates for 2016–2019 differ methodologically from earlier estimates because of changes to the underlying data sources. Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The 2016–2018 estimates presented in this report were updated to incorporate the methods used to impute Medicaid eligibility among infants aged 0–3 months in the CPS-ASEC (see appendix E in volume II for more information).

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year

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

Chapter 4. WIC Coverage Rates for CY 2019

This chapter presents coverage rates for women, infants, and children in 2019. 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 2019. 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 2019 by participant category and by race and Hispanic ethnicity. Section B presents regional- and State-level coverage rates. Section C examines the changes in coverage rates from 2018 to 2019. Section D discusses general trends in coverage rates from 2005 to 2019.⁶¹

A. National-Level WIC Coverage Rates

Of the 11.0 million individuals eligible for WIC in an average month in 2019, 6.3 million participated, resulting in a national coverage rate of 57 percent (see table 4.1). Coverage rates were highest for infants (98 percent) and lowest for children (45 percent; see figure 4.1).⁶² Moreover, coverage rates for children decreased with age; rates were highest for 1-year-olds (65 percent) and lowest for 4-year-olds (25 percent; see figure 4.2). Coverage rates were higher for postpartum women (85 percent) than pregnant women (52 percent).⁶³

Coverage rates were highest for Hispanic/Latino individuals (67 percent) and lowest for White-only, non-Hispanic individuals (45 percent⁶⁴; see table 4.2). The coverage rate was 62 percent for Black-only, non-Hispanic individuals and 60 percent for non-Hispanic individuals who self-identified as two or more races or self-identified as a race other than Black or White. White-only, non-Hispanic individuals had the lowest coverage rates for all participant categories (see figure 4.3).

⁶¹ Coverage rate estimates for 2016–2019 differ methodologically from earlier estimates because of changes to the underlying data sources. Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The 2016–2018 estimates presented in this report were updated to incorporate the methods used to impute Medicaid eligibility among infants aged 0–3 months in the CPS-ASEC (see appendix E in volume II for more information).

⁶² The coverage rate for postpartum non-breastfeeding women is unreliable because the rate is over 100 percent with a 95 percent confidence interval not containing a value below 100 percent. It may largely be attributed to updated adjustment factors using the 2014 SIPP and changes to the CPS-ASEC (see chapter 2 in Farson Gray et al., 2021, for more information). As a result, the estimated number of pregnant women eligible for WIC may be underestimated.

⁶³ As noted in the methodology section (chapter 2), 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.

⁶⁴ The unrounded percentage is 45.482 percent for White-only, non-Hispanic individuals, which rounds to 45 percent.

Table 4.1. WIC Coverage Rate by Participant Category: CY 2019

Participant Category	Number Eligible	Number Participating	Coverage Rate
Infants	1,617,143	1,590,916	98.4
Children	7,199,043	3,223,578	44.8
1-year-old children	1,696,150	1,101,352	64.9
2-year-old children	1,793,823	870,813	48.5
3-year-old children	1,781,576	778,762	43.7
4-year-old children	1,927,494	472,651	24.5
Pregnant women	1,066,052	557,725	52.3
Postpartum women	1,108,854	939,375	84.7
Breastfeeding women	742,473	507,589	68.4
Non-breastfeeding women	366,381	431,786	†
Total	10,991,092	6,311,594	57.4

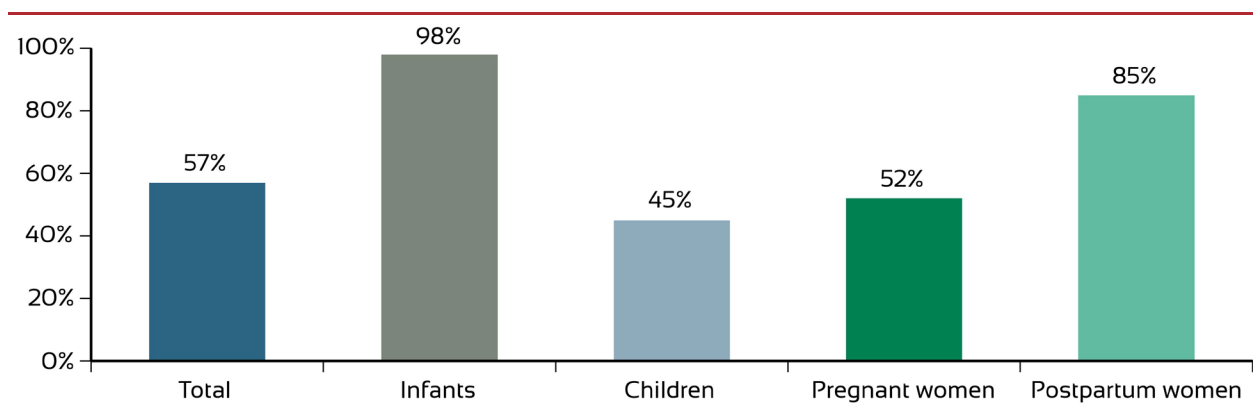
Note: WIC administrative data on participating children by year of age were not available. The numbers of participating children by year of age in this table are based on the distribution among children enrolled in WIC according to WIC PC2018 data.

CY = calendar year

† indicates an unreliable coverage rate over 100 percent with the lower bound of a 95 percent confidence interval above 100 percent

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a, n.d.b; unpublished WIC administrative data

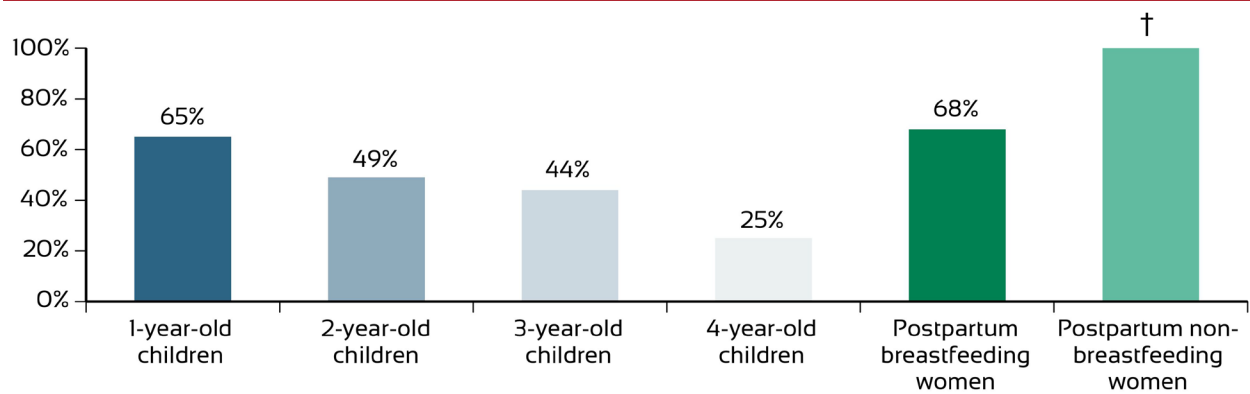
Figure 4.1. WIC Coverage Rate by Participant Category: CY 2019



CY = calendar year; FNS = Food and Nutrition Service

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

Figure 4.2. WIC Coverage Rates for Children by Year of Age and Postpartum Women by Breastfeeding Status: CY 2019



CY = calendar year

† indicates an unreliable coverage rate over 100 percent with the lower bound of a 95 percent confidence interval above 100 percent

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a, n.d.b; unpublished internal WIC administrative data

Table 4.2. WIC Eligibility, Participants, and Coverage Rates by Participant Category and by Race and Hispanic Ethnicity: CY 2019

Participant Category	Hispanic/ Latino	White-Only, Not Hispanic	Black-Only, Not Hispanic	Two or More Races or Other Race, Not Hispanic	Total
Number Eligible					
Infants	545,534	615,148	324,257	127,238	1,612,177
Children	2,539,986	2,643,015	1,343,012	652,131	7,178,144
Pregnant women	360,326	403,619	215,074	83,763	1,062,783
Postpartum women	382,697	423,295	211,914	87,543	1,105,450
Total	3,828,544	4,085,078	2,094,257	950,675	10,958,553
Number Participating					
Infants	600,197	474,944	364,165	147,956	1,587,262
Children	1,402,419	895,412	605,463	310,116	3,213,410
Pregnant women	210,110	190,981	115,298	40,065	556,454
Postpartum women	365,166	296,637	204,542	70,670	937,015
Total	2,577,892	1,857,974	1,289,468	568,806	6,294,140
Coverage Rate					
Infants	†	77.2*	†	†	98.5
Children	55.2*	33.9*	45.1	47.6	44.8
Pregnant women	58.3*	47.3	53.6	47.8	52.4
Postpartum women	95.4*	70.1*	96.5	80.7	84.8
Total	67.3*	45.5*	61.6*	59.8	57.4

Note: Estimates for U.S. territories other than Puerto Rico are not included in the calculation of the coverage rates in this table because information on race and ethnicity was not available for the other U.S. territories in the data.

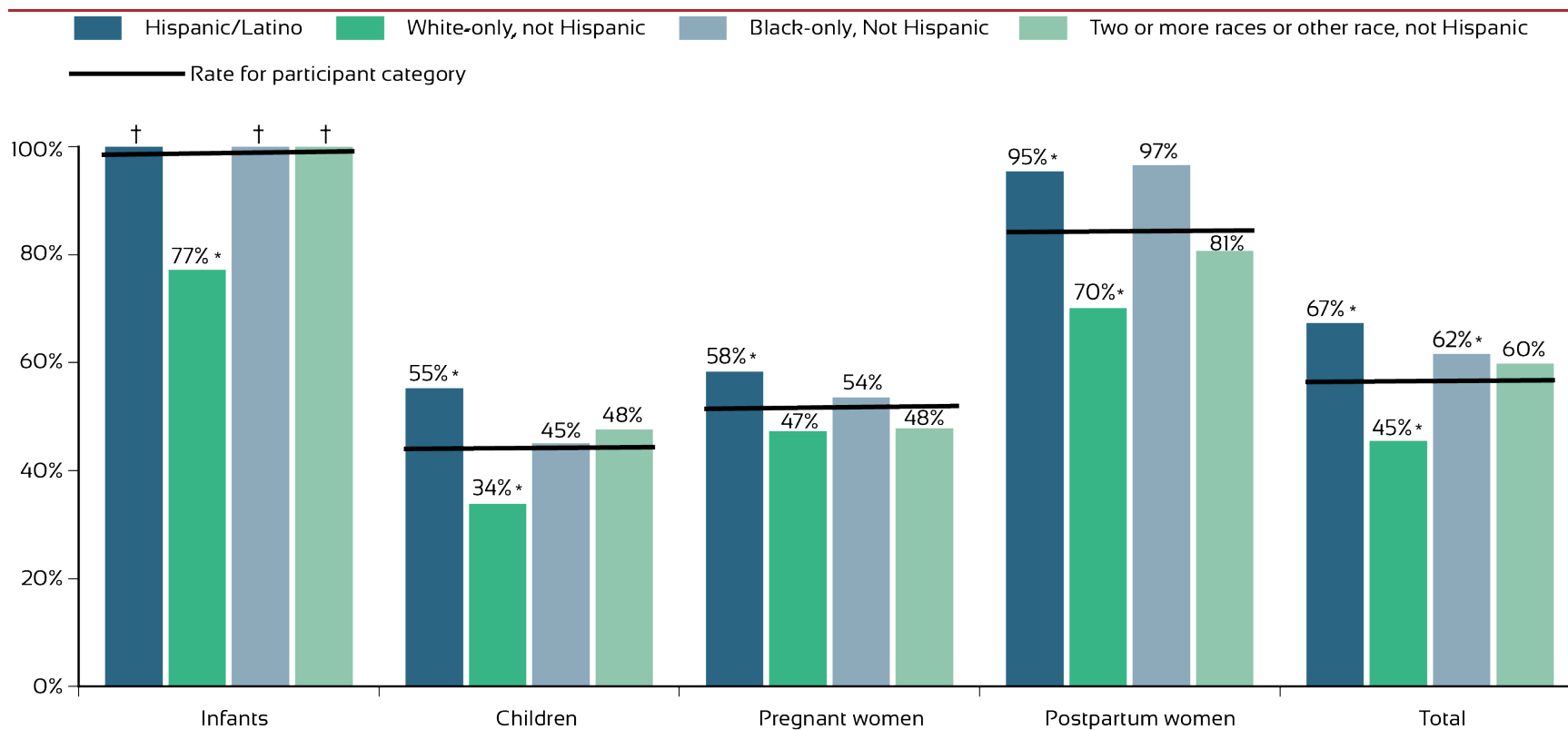
CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year; FNS = Food and Nutrition Service

* indicates a statistically significant difference at the 95 percent confidence level between the coverage rate for a participant category's race and ethnicity and the national coverage rate for that category. 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. See table F.9 in volume II for margins of error by participant category and race and Hispanic ethnicity used to calculate statistical significance in this table.

† indicates an unreliable coverage rate over 100 percent with the lower bound of a 95 percent confidence interval above 100 percent

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a; unpublished internal WIC administrative data

Figure 4.3. WIC Coverage Rates by Race and Hispanic Ethnicity and by Participant Category: CY 2019



Note: Estimates for U.S. territories other than Puerto Rico are not included in the calculation of the coverage rates in this figure because information on race and ethnicity was not available for the other U.S. territories in the data.

* indicates a statistically significant difference at the 95 percent confidence level between the coverage rate for a participant category's race and ethnicity and the national coverage rate for that category. 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.

† indicates an unreliable coverage rate over 100 percent with the lower bound of a 95 percent confidence interval above 100 percent

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a; 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 in volume II for a list of States and U.S. territories by Region).⁶⁵ When comparing total coverage rates across Regions, the Western Region had the highest rate (65 percent) and the Mountain Plains Region had the lowest rate (54 percent) compared with the national rate of 57 percent (see table 4.3).

In general, when comparing coverage rates by participant category, regional rates mirrored national rates (see table 4.3). For example, coverage rates were highest for infants across all Regions. And, like national rates, coverage rates were lowest for children across all participant categories.

Regional coverage rates varied by race and ethnicity (see table 4.4). Coverage rates for White-only, non-Hispanic individuals were lowest in six of the seven Regions; rates for non-Hispanic individuals who self-identified as two or more races or self-identified as a race other than Black or White were only lower in the Southeast Region. The coverage rates in the Mid-Atlantic, Southeast, Southwest, and Western Regions were highest for Hispanic/Latino participants, whereas the Northeast Region had the highest rate for non-Hispanic individuals who self-identified as two or more races or self-identified as a race other than Black or White. The Mountain Plains Region had the highest rate for Black-only, non-Hispanic participants.

Coverage rates by State had substantial variation in 2019. Rates ranged from a high of 73 percent in Vermont to a low of 43 percent in South Carolina (see table 4.5 and figure 4.4). Puerto Rico had a higher coverage rate (82 percent) than any State. Twenty-two States and Puerto Rico had coverage rates greater than the national average (57 percent). Five States had coverage rates below 45 percent (Montana, New Mexico, South Carolina, Tennessee, and Utah).

State coverage rates ranged from a low of **43 percent** to a high of **73 percent**. The national coverage rate was **57 percent**.

State coverage rates by participant category were generally consistent with State coverage rates overall but differed in some cases. In California, Maryland, Minnesota, Oregon, and Rhode Island coverage rates were consistently higher than national rates across all categories (see table 4.6 and figures 4.5 through 4.8). Ten States (Georgia, Idaho, Louisiana, Montana, New Mexico, Pennsylvania, South Carolina, Tennessee, Utah, and Virginia) had coverage rates 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 New Jersey were lower for infants and pregnant women (by 4 and 5 percentage points, respectively), but slightly higher for children and postpartum women (by 2 and 5 percentage points, respectively). Compared with the national average, coverage rates in Texas were much higher for postpartum women (by 15 percentage points) and slightly higher for infants (by 2 percentage points) but lower for children and pregnant women (by 4 and 3 percentage points, respectively).

⁶⁵ On October 1, 2019, the FNS Regions were realigned. The 2019 estimates presented in this report reflect the realigned FNS Regions.

State rates by race and Hispanic ethnicity were also generally consistent with average State rates for these subgroups.⁶⁶ For example, similar to national coverage rates, State-level coverage rates were lowest for White-only, non-Hispanic individuals in every State except Kentucky, Maine, Nevada, and Tennessee (see table 4.7 and figures 4.9 through 4.11). In Tennessee rates were highest for White-only, non-Hispanic individuals.

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. See chapter 6 for more information on measures of statistical uncertainty for the estimates.

Table 4.3. WIC Eligibility, Participants, and Coverage Rates by FNS Region and Participant Category: CY 2019

FNS Region	Infants	Children	Pregnant Women	Postpartum Women	Total
Number Eligible					
Northeast	143,267	642,465	94,435	100,600	980,768
Mid-Atlantic	179,566	813,842	118,409	123,347	1,235,164
Southeast	371,996	1,573,946	245,351	244,886	2,436,179
Midwest	241,338	1,126,580	158,946	162,125	1,688,989
Southwest	320,297	1,376,484	211,227	216,802	2,124,811
Mountain Plains	89,213	385,468	58,711	62,172	595,564
Western	271,465	1,280,258	178,973	198,922	1,929,618
Total	1,617,143	7,199,043	1,066,052	1,108,854	10,991,092
Number Participating					
Northeast	136,982	311,682	49,256	82,695	580,614
Mid-Atlantic	177,849	385,595	63,728	103,050	730,222
Southeast	357,372	631,266	127,337	196,032	1,312,008
Midwest	258,112	479,811	84,306	134,652	956,881
Southwest	309,238	546,515	102,541	200,971	1,159,265
Mountain Plains	80,731	162,764	28,608	46,951	319,054
Western	270,633	705,947	101,948	175,024	1,253,551
Total	1,590,916	3,223,578	557,725	939,375	6,311,594

⁶⁶ Because of small sample sizes, estimates for Black-Only, Not Hispanic and Two or More Races or Other Race, Not Hispanic subgroups were combined. This category includes Black-only, non-Hispanic individuals and non-Hispanic individuals who self-identify as two or more races or self-identify as a race other than Black or White.

FNS Region	Infants	Children	Pregnant Women	Postpartum Women	Total
Coverage Rate					
Northeast	95.6	48.5*	52.2	82.2	59.2
Mid-Atlantic	99.0	47.4	53.8	83.5	59.1
Southeast	96.1	40.1*	51.9	80.1	53.9*
Midwest	100.0*	42.6	53.0	83.1	56.7
Southwest	96.5	39.7*	48.5	92.7*	54.6*
Mountain Plains	90.5	42.2	48.7	75.5*	53.6*
Western	99.7	55.1*	57.0*	88.0	65.0*
Total	98.4	44.8	52.3	84.7	57.4

Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this table reflect the realigned FNS Regions. The estimated coverage rate exceeded 100 percent for infants in the Midwest Region. However, the lower bound of the 95 percent confidence interval for these rates is below 100 percent. See chapter 6 in volume I for more information on measures of statistical uncertainty for the eligibility estimates. Regional eligibility estimates and participant data include individuals in ITOs who were eligible for WIC or receiving WIC. Estimates for Puerto Rico are included in the Mid-Atlantic regional totals. As a result, the Mid-Atlantic regional coverage rates were excluded from significance testing. When Puerto Rico was excluded from the Mid-Atlantic Region, the regional coverage rates were not statistically different from the national coverage rates at a 95 percent confidence level.

CY = calendar year; FNS = Food and Nutrition Service; ITO = Indian Tribal Organization

* indicates a statistically significant difference between the regional coverage rate and the national coverage rate at the 95 percent confidence level

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

Table 4.4. WIC Eligibility, Participants, and Coverage Rates by FNS Region and by Race and Hispanic Ethnicity Category: CY 2019

FNS Region	Hispanic/ Latino	White-Only, Not Hispanic	Black-Only, Not Hispanic	Two or More Races or Other Race, Not Hispanic	Total
Number Eligible					
Northeast	329,003	375,185	169,082	100,430	973,701
Mid-Atlantic	415,392	442,051	282,175	95,546	1,235,164
Southeast	547,658	959,700	770,578	158,243	2,436,179
Midwest	290,872	888,312	353,667	156,137	1,688,989
Southwest	1,031,167	599,943	334,452	159,249	2,124,811
Mountain Plains	141,694	327,876	61,503	64,490	595,564
Western	1,072,757	492,011	122,800	216,579	1,904,147
Total	3,828,544	4,085,078	2,094,257	950,675	10,958,553
Number Participating					
Northeast	221,197	173,877	114,125	68,470	577,670
Mid-Atlantic	303,205	201,050	179,021	46,946	730,222
Southeast	330,976	450,526	459,172	71,335	1,312,008
Midwest	187,332	431,416	234,251	103,882	956,881
Southwest	648,541	240,353	183,175	87,196	1,159,265
Mountain Plains	87,126	151,691	42,148	38,088	319,054
Western	799,516	209,062	77,575	152,889	1,239,042
Total	2,577,892	1,857,974	1,289,468	568,806	6,294,140

FNS Region	Hispanic/ Latino	White-Only, Not Hispanic	Black-Only, Not Hispanic	Two or More Races or Other Race, Not Hispanic	Total
Coverage Rate					
Northeast	67.2	46.3	67.5	68.2	59.3
Mid-Atlantic	73.0	45.5	63.4	49.1	59.1
Southeast	60.4	46.9	59.6	45.1	53.9
Midwest	64.4	48.6	66.2	66.5	56.7
Southwest	62.9	40.1	54.8	54.8	54.6
Mountain Plains	61.5	46.3	68.5	59.1	53.6
Western	74.5	42.5	63.2	70.6	65.1
Total	67.3	45.5	61.6	59.8	57.4

Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this table reflect the realigned FNS Regions. Estimates for U.S. territories other than Puerto Rico are not included in the calculation of the coverage rates in this table because information on race and ethnicity was not available for the other U.S. territories in the data. Estimates for Puerto Rico are included in regional totals.

CY = calendar year; FNS = Food and Nutrition Service

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a; unpublished internal WIC administrative data

Table 4.5. WIC Eligibility, Participants, and Coverage Rates by State and FNS Region: CY 2019

State	Number Eligible	Number Participating	Coverage Rate
Alabama	185,112	114,454	61.8*
Alaska	29,985	15,741	52.5
Arizona	252,442	140,747	55.8
Arkansas	133,103	65,366	49.1*
California	1,307,996	900,654	68.9*
Colorado	152,037	81,187	53.4*
Connecticut	82,203	45,200	55.0
Delaware	32,551	16,253	49.9*
District of Columbia	19,331	11,879	61.4
Florida	734,199	423,881	57.7
Georgia	410,673	202,160	49.2*
Hawaii	43,590	25,443	58.4
Idaho	66,696	30,543	45.8*
Illinois	375,608	179,152	47.7*
Indiana	233,905	138,090	59.0
Iowa	98,365	57,628	58.6
Kansas	87,221	47,896	54.9
Kentucky	164,479	93,322	56.7
Louisiana	205,123	100,202	48.9*
Maine	32,494	17,208	53.0
Maryland	179,443	121,792	67.9*

State	Number Eligible	Number Participating	Coverage Rate
Massachusetts	164,079	102,594	62.5*
Michigan	318,396	205,016	64.4*
Minnesota	147,889	99,394	67.2*
Mississippi	131,639	78,447	59.6
Missouri	200,241	105,160	52.5*
Montana	35,138	15,519	44.2*
Nebraska	57,262	33,872	59.2
Nevada	100,030	59,019	59.0
New Hampshire	23,360	12,060	51.6
New Jersey	231,367	134,485	58.1
New Mexico	92,567	40,220	43.5*
New York	629,999	371,533	59.0
North Carolina	366,161	208,072	56.8
North Dakota	18,472	11,206	60.7
Ohio	364,624	190,690	52.3*
Oklahoma	156,368	91,075	58.2
Oregon	116,029	80,018	69.0*
Pennsylvania	362,974	198,481	54.7
Puerto Rico	128,754	105,382	81.8
Rhode Island	26,108	17,852	68.4*
South Carolina	192,773	82,228	42.7*
South Dakota	30,677	16,396	53.4
Tennessee	251,143	109,444	43.6*
Texas	1,186,061	678,959	57.2
Utah	99,146	42,697	43.1*
Vermont	15,457	11,223	72.6*
Virginia	221,025	109,159	49.4*
Washington	239,820	127,624	53.2*
West Virginia	59,718	32,790	54.9
Wisconsin	150,202	86,911	57.9
Wyoming	14,516	7,819	53.9

State	Number Eligible	Number Participating	Coverage Rate
FNS Region			
Northeast	980,768	580,614	59.2
Mid-Atlantic	1,235,164	730,222	59.1
Southeast	2,436,179	1,312,008	53.9*
Midwest	1,688,989	956,881	56.7
Southwest	2,124,811	1,159,265	54.6*
Mountain Plains	595,564	319,054	53.6*
Western	1,929,618	1,253,551	65.0*
Total	10,991,092	6,311,594	57.4

Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this table reflect the realigned FNS Regions. State and regional eligibility estimates and participant data include individuals in ITOs who were eligible for WIC or receiving 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 56.5 percent, which is not statistically different from the national coverage rate at a 95 percent confidence level.

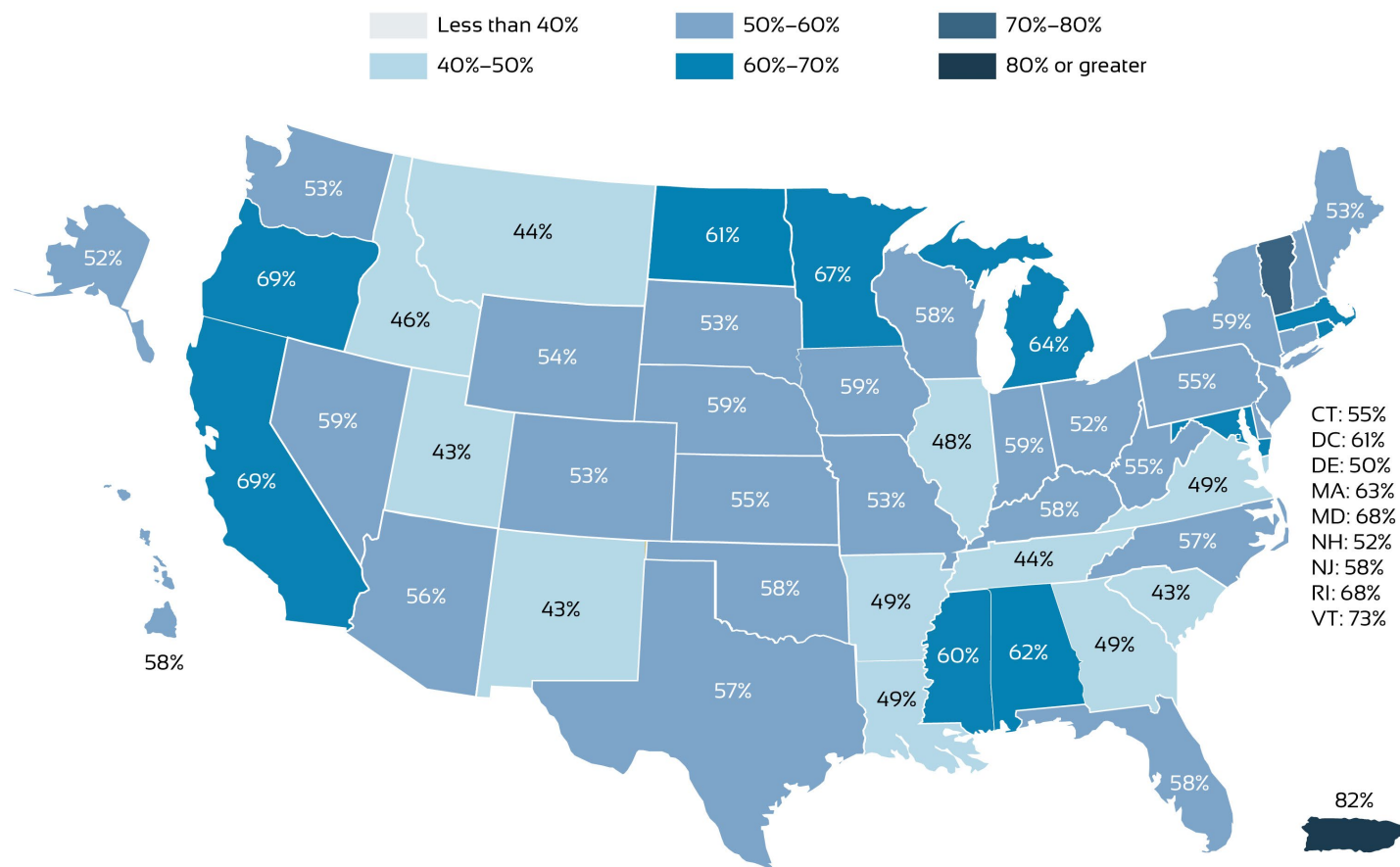
CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year; FNS = Food and Nutrition Service; ITO = Indian Tribal Organization

* 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 with the national coverage rate.

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

Figure 4.4. WIC Coverage Rate for Total Eligible Individuals by State: CY 2019

National Coverage Rate: 57.4 Percent



CY = calendar year

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

Table 4.6. WIC Coverage Rates by State and Region and Participant Category: CY 2019

State	Infants	1-Year-Old Children	2-Year-Old Children	3-Year-Old Children	4-Year-Old Children	All Children	Pregnant Women	Postpartum Women	Total
Alabama	100.0	65.6	51.4	37.9	25.3	44.6	72.4	89.9	61.8
Alaska	94.5	76.5	43.7	36.9	19.8	40.8	57.9	77.4	52.5
Arizona	95.7	71.8	48.6	43.7	20.3	44.9	41.5	80.1	55.8
Arkansas	95.3	55.3	34.9	30.5	16.4	33.6	52.8	75.5	49.1
California	100.0	76.3	62.0	59.9	39.2	58.5	61.0	93.4	68.9
Colorado	84.2	66.4	46.5	41.8	21.4	43.8	46.0	76.7	53.4
Connecticut	100.0	58.6	46.7	43.3	19.3	41.0	63.8	70.4	55.0
Delaware	98.4	53.3	39.1	35.7	18.1	36.5	51.2	71.7	49.9
District of Columbia	100.0	75.8	41.4	29.9	14.1	37.3	65.4	100.0	61.4
Florida	95.9	67.9	49.2	41.6	23.4	45.3	51.6	85.7	57.7
Georgia	92.0	51.8	40.4	34.6	15.9	35.0	49.8	75.0	49.2
Hawaii	100.0	78.3	40.6	34.5	16.9	42.5	69.4	96.2	58.4
Idaho	75.1	61.8	39.9	38.6	14.5	37.0	39.2	64.4	45.8
Illinois	100.0	41.9	37.2	32.8	20.4	32.7	46.3	83.6	47.7
Indiana	100.0	71.2	51.4	44.7	21.8	46.1	48.1	93.3	59.0
Iowa	96.0	73.6	53.0	43.3	22.0	47.4	46.8	89.3	58.6
Kansas	100.0	63.0	42.7	41.3	22.6	42.1	56.8	81.3	54.9
Kentucky	100.0	61.2	46.3	36.7	26.6	42.1	58.3	79.5	56.7
Louisiana	94.7	51.0	38.0	26.2	17.6	32.7	48.4	78.5	48.9
Maine	94.3	54.9	43.7	48.1	25.9	42.8	48.0	73.2	53.0
Maryland	100.0	80.2	63.5	51.2	27.2	54.0	65.3	96.4	67.9
Massachusetts	89.1	78.7	60.8	52.5	29.5	54.9	51.5	80.6	62.5
Michigan	100.0	74.8	58.9	52.9	26.9	53.0	62.8	75.5	64.4
Minnesota	100.0	78.5	53.8	55.4	36.1	55.1	59.8	95.1	67.2
Mississippi	100.0	60.1	46.1	43.2	28.0	44.4	51.4	87.9	59.6
Missouri	97.6	61.2	36.8	32.6	22.1	37.5	53.2	78.5	52.5
Montana	74.7	49.0	42.7	42.5	17.0	36.1	40.7	56.7	44.2

State	Infants	1-Year-Old Children	2-Year-Old Children	3-Year-Old Children	4-Year-Old Children	All Children	Pregnant Women	Postpartum Women	Total
Nebraska	83.5	79.7	50.8	44.8	39.4	52.9	40.0	74.8	59.2
Nevada	99.4	66.1	49.6	48.5	24.9	47.0	44.5	93.7	59.0
New Hampshire	91.9	55.0	52.0	44.1	21.3	41.9	51.8	75.8	51.6
New Jersey	94.7	64.4	52.7	42.8	29.0	46.5	47.0	89.6	58.1
New Mexico	74.4	53.3	34.4	31.2	17.8	33.8	39.6	64.6	43.5
New York	95.3	73.3	53.0	43.4	26.2	48.0	50.6	83.9	59.0
North Carolina	94.3	62.8	48.3	43.8	24.6	44.2	50.9	83.4	56.8
North Dakota	99.2	53.5	86.3	40.4	33.6	50.5	47.7	84.8	60.7
Ohio	†	49.4	36.5	32.1	21.1	34.2	53.7	74.7	52.3
Oklahoma	100.0	49.7	51.3	46.2	24.8	42.5	69.3	84.1	58.2
Oregon	100.0	78.2	73.3	55.6	31.0	59.1	61.0	92.8	69.0
Pennsylvania	97.5	64.7	47.4	42.3	20.9	43.1	48.0	76.7	54.7
Rhode Island	100.0	82.4	60.1	56.5	27.1	54.7	64.1	95.3	68.4
South Carolina	82.3	48.1	32.0	29.8	10.0	29.2	41.4	63.7	42.7
South Dakota	78.6	61.9	39.0	47.3	47.1	48.4	41.0	55.7	53.4
Tennessee	89.1	41.5	30.3	28.6	14.7	28.5	47.9	69.7	43.6
Texas	100.0	65.6	43.2	40.5	17.1	40.7	49.4	100.0	57.2
Utah	62.9	56.2	40.9	33.8	20.2	37.4	31.2	55.0	43.1
Vermont	100.0	91.9	76.7	89.8	24.1	63.6	65.0	99.7	72.6
Virginia	92.2	45.2	46.0	37.2	19.8	36.4	48.3	72.2	49.4
Washington	75.5	63.9	47.5	45.7	33.1	47.1	44.8	65.2	53.2
West Virginia	99.1	61.2	39.3	40.8	25.7	41.1	53.2	83.2	54.9
Wisconsin	100.0	73.9	44.5	49.4	21.9	45.8	50.8	87.2	57.9
Wyoming	84.6	75.3	48.0	40.9	17.7	44.2	45.5	75.8	53.9

State	Infants	1-Year-Old Children	2-Year-Old Children	3-Year-Old Children	4-Year-Old Children	All Children	Pregnant Women	Postpartum Women	Total
FNS Region									
Northeast	95.6	72.0	53.8	45.8	25.9	48.5	52.2	82.2	59.2
Mid-Atlantic	99.0	66.6	53.3	48.4	24.7	47.4	53.8	83.5	59.1
Southeast	96.1	59.2	44.0	38.0	20.9	40.1	51.9	80.1	53.9
Midwest	100.0	61.7	45.9	42.0	23.5	42.6	53.0	83.1	56.7
Southwest	96.5	62.0	43.0	38.6	18.2	39.7	48.5	92.7	54.6
Mountain Plains	90.5	63.7	43.1	39.0	24.4	42.2	48.7	75.5	53.6
Western	99.7	73.9	58.5	55.4	35.6	55.1	57.0	88.0	65.0
Total	98.4	64.9	48.5	43.7	24.5	44.8	52.3	84.7	57.4

Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this table reflect the realigned FNS Regions. Estimates for Puerto Rico and other U.S. territories are included in the total but are not shown separately because of small sample sizes. 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. The estimated coverage rate exceeded 100 percent for infants in Alabama, California, Connecticut, District of Columbia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Mississippi, Oklahoma, Oregon, Rhode Island, Texas, Vermont, and Wisconsin; for postpartum women in the District of Columbia and Texas; and for infants in the Midwest Region. However, the lower bound of the 95 percent confidence interval for these rates is below 100 percent. State and regional eligibility estimates and participant data include individuals in ITOs who were eligible for WIC.

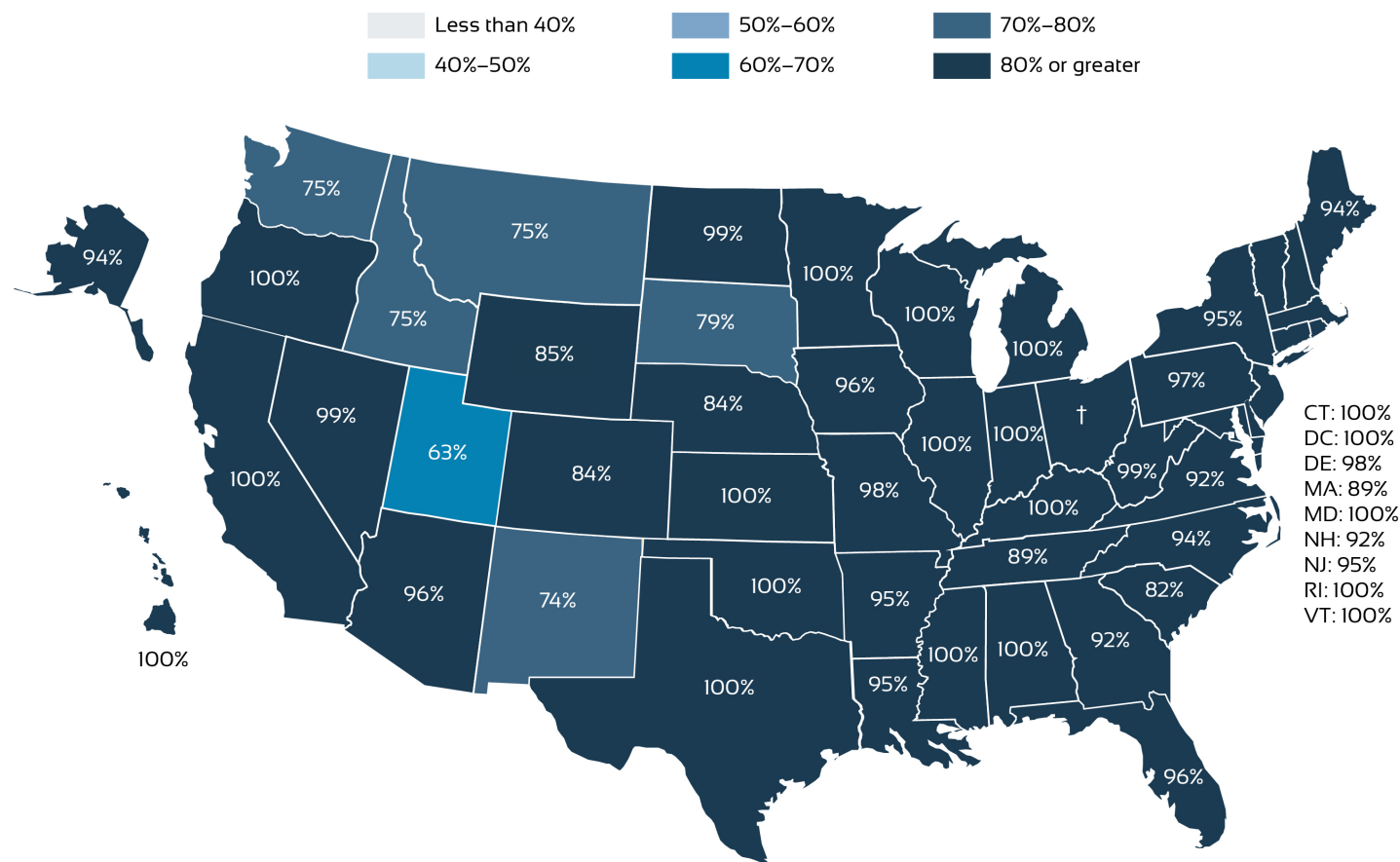
CY = calendar year; FNS = Food and Nutrition Service; ITO = Indian Tribal Organization

† indicates an unreliable coverage rate over 100 percent with the lower bound of a 95 percent confidence interval above 100 percent

Sources: IPUMS-USA, n.d.; U.S. Census Bureau, n.d.a, n.d.b; Kline et al., 2020; unpublished internal WIC administrative data

Figure 4.5. WIC Coverage Rate for Infants by State: CY 2019

National Coverage Rate for Infants: 98.4 Percent



Note: 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 rate exceeded 100 percent for infants in Alabama, California, Connecticut, District of Columbia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Mississippi, Oklahoma, Oregon, Rhode Island, Texas, Vermont, and Wisconsin. However, the lower bound of the 95 percent confidence interval for these rates is below 100 percent. See chapter 6 in volume I for more information on measures of statistical uncertainty for the eligibility estimates.

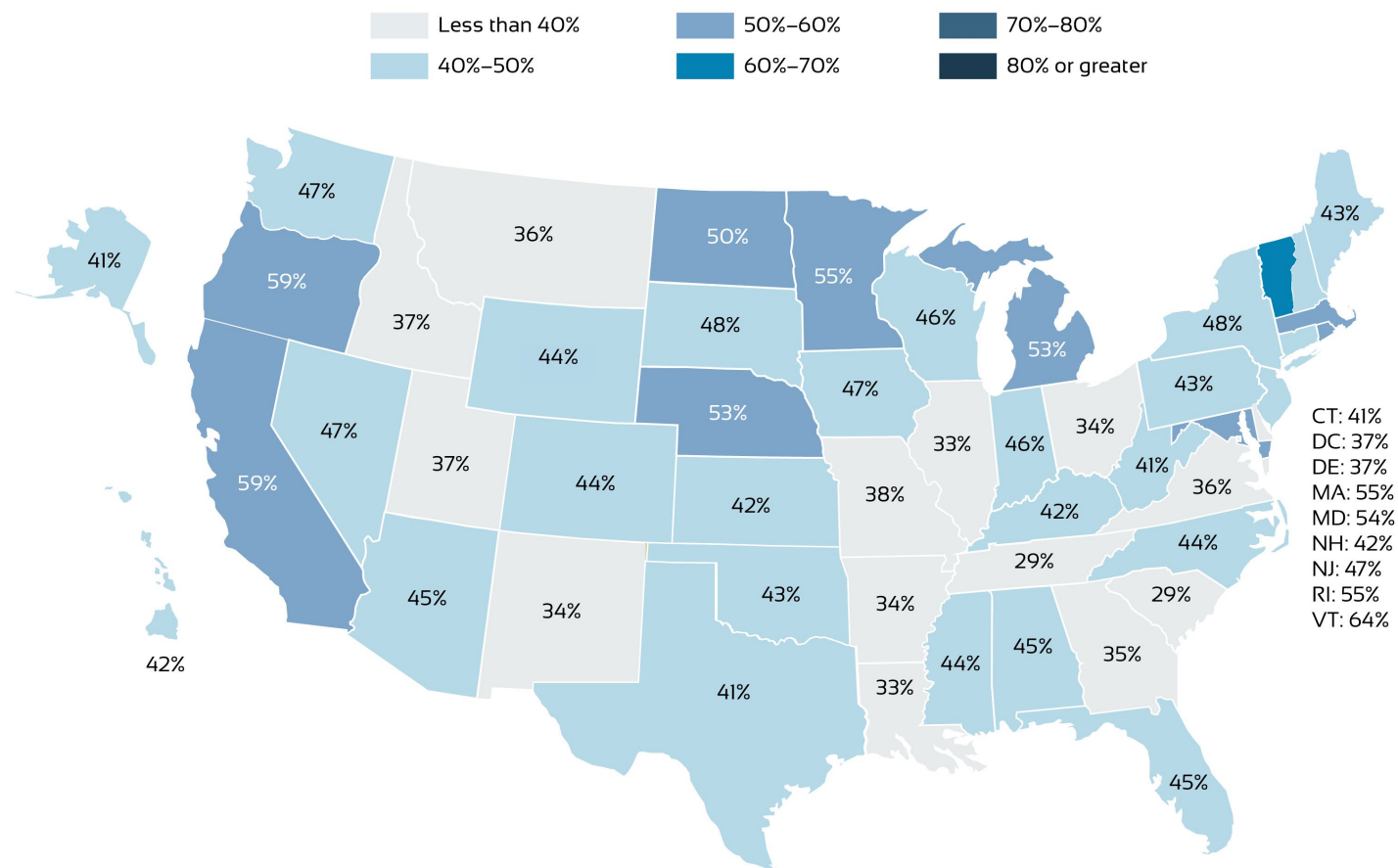
CY = calendar year

† indicates an unreliable coverage rate over 100 percent with the lower bound of a 95 percent confidence interval above 100 percent

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

Figure 4.6. WIC Coverage Rate for Children by State: CY 2019

National Coverage Rate for Children: 44.8 Percent



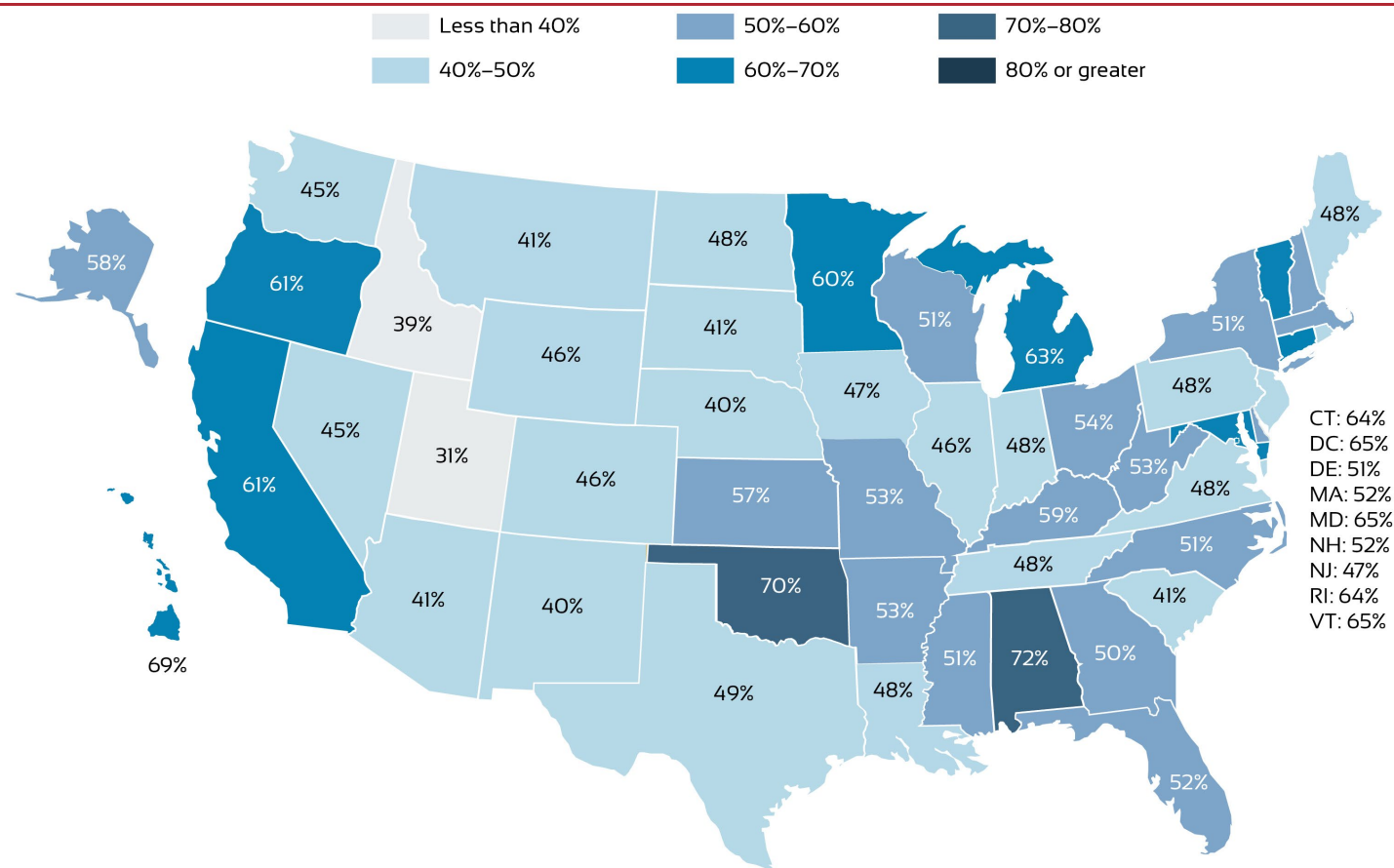
Note: Estimates for Puerto Rico and other U.S. territories are included in the total but are not shown separately because of small sample sizes.

CY = calendar year

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

Figure 4.7. WIC Coverage Rate for Pregnant Women by State: CY 2019

National Coverage Rate for Pregnant Women: 52.3 Percent



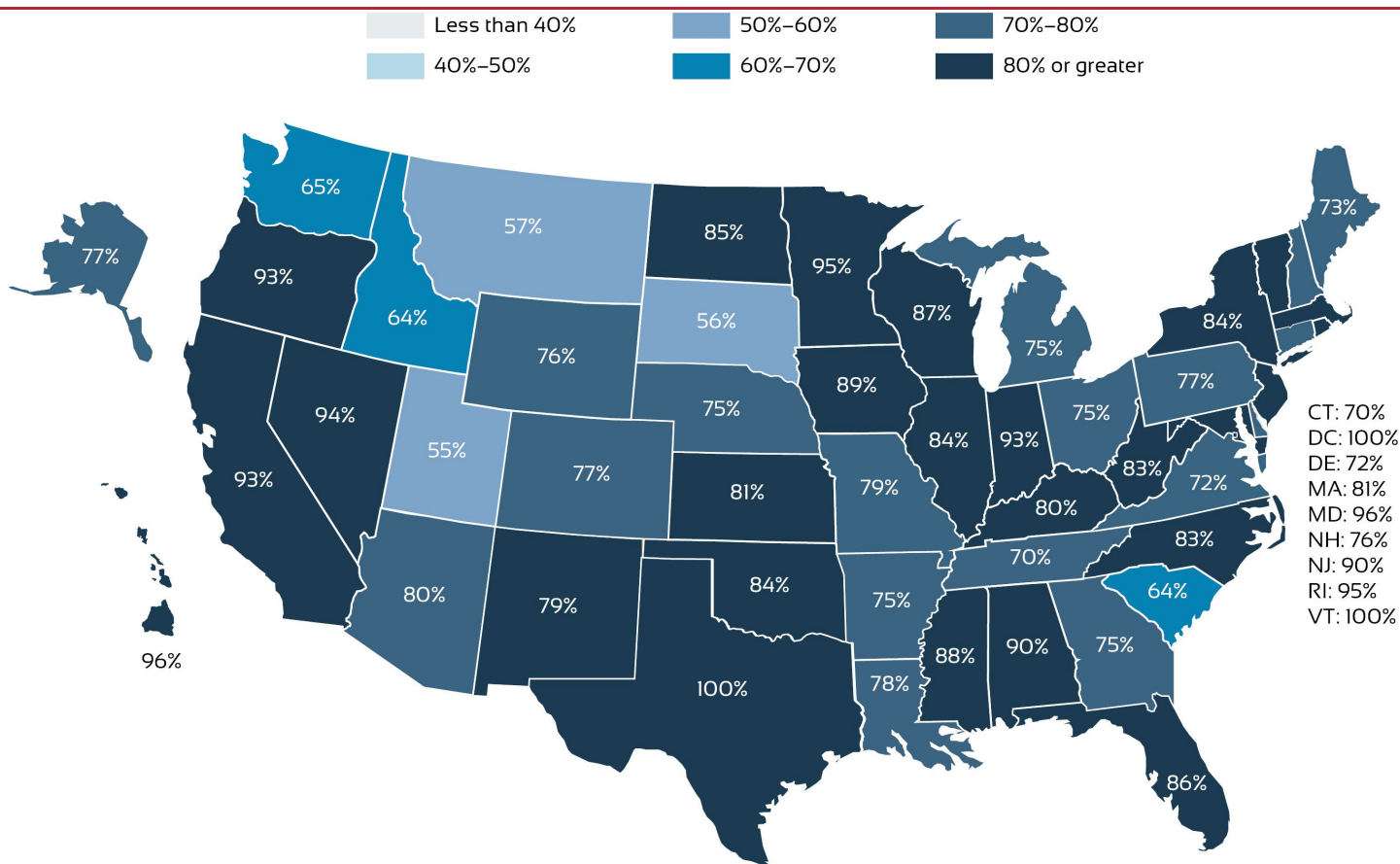
Note: Estimates for Puerto Rico and other U.S. territories are included in the total but are not shown separately because of small sample sizes.

CY = calendar year

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

Figure 4.8. WIC Coverage Rate for Postpartum Women by State: CY 2019

National Coverage Rate for Postpartum Women: 84.7 Percent



Note: 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 rate exceeded 100 percent for postpartum women in the District of Columbia and Texas. However, the lower bound of the 95 percent confidence interval for these rates is below 100 percent. See chapter 6 in volume I for more information on measures of statistical uncertainty for the eligibility estimates.

CY = calendar year

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

Table 4.7. State-Level WIC Coverage Rates by Race and Hispanic Ethnicity: CY 2019

State	Hispanic/ Latino	White-Only, Not Hispanic	Other Than White-Only, Not Hispanic ^a	Total
Alabama	93.8*	51.2*	66.3	61.8*
Alaska	46.4	36.4	67.8	52.5
Arizona	56.4*	47.8	65.1	55.8
Arkansas	58.2*	46.6	49.6*	49.1*
California	76.6*	36.8*	69.5	68.9*
Colorado	59.7*	44.7	57.2	53.4*
Connecticut	67.7	33.3*	61.5	55.0
Delaware	57.7	36.2	57.3	49.9*
District of Columbia	78.0	44.7	57.7	61.4
Florida	63.9	41.6*	66.9*	57.7
Georgia	52.5*	45.6	50.2*	49.2*
Hawaii	52.4*	39.7	65.0	58.4
Idaho	58.1	39.5*	66.7	45.8*
Illinois	54.3*	39.2*	50.3*	47.7*
Indiana	73.5	51.8*	69.5	59.0
Iowa	68.7	49.9	82.6*	58.6
Kansas	63.1	46.7	66.2	54.9
Kentucky	57.9	56.7*	56.3	56.7
Louisiana	50.1*	43.6	52.4*	48.9*
Maine	48.6	49.5	78.0	53.0
Maryland	84.0*	49.6	67.6	67.9*
Massachusetts	72.7*	50.3	64.3	62.5*
Michigan	75.4	57.0*	72.7*	64.4*
Minnesota	70.7	50.9*	89.3*	67.2*
Mississippi	82.8	49.4	64.6	59.6
Missouri	55.7	48.8	61.0	52.5*
Montana	76.0	37.6*	59.9	44.2*
Nebraska	71.0	51.1	59.5	59.2
Nevada	55.4*	59.4*	66.9	59.0
New Hampshire	57.8	46.2	100.0	51.6
New Jersey	70.0	40.9*	56.8	58.1
New Mexico	47.7*	27.4*	45.8*	43.5*
New York	64.6	45.0	68.6	59.0
North Carolina	60.6*	53.2*	58.0	56.8
North Dakota	60.3	49.3	76.7	60.7
Ohio	60.5	46.5	60.5	52.3*
Oklahoma	65.1	46.6	70.8	58.2
Oregon	80.9*	63.8*	64.8	69.0*

State	Hispanic/ Latino	White-Only, Not Hispanic	Other Than White-Only, Not Hispanic ^a	Total
Pennsylvania	61.1*	47.7	62.3	54.7
Rhode Island	88.9	47.7	66.6	68.4*
South Carolina	43.2*	34.9*	50.1*	42.7*
South Dakota	58.5	35.3*	83.1	53.4
Tennessee	44.9*	46.2	39.0*	43.6*
Texas	66.0	35.2*	52.0*	57.2
Utah	58.7	34.3*	53.6	43.1*
Vermont	†	69.4*	76.3	72.6*
Virginia	63.1	39.9*	51.5*	49.4*
Washington	68.3	39.3*	64.1	53.2*
West Virginia	85.1	53.1*	65.3	54.9
Wisconsin	83.9*	42.6	72.6	57.9
Wyoming	67.5	46.3	100.0	53.9
Total	67.3	45.5	61.0	57.4

Note: 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 calculation of the coverage rates in this table because information on race and ethnicity was not available for the other U.S. territories in the data. The estimated coverage rate exceeded 100 percent for individuals who were in the category Other than White-Only, Not Hispanic in New Hampshire and Wyoming. However, the lower bound of the 95 percent confidence interval for these rates is below 100 percent. See chapter 6 in volume I for more information on measures of statistical uncertainty for the eligibility estimates.

CY = calendar year

* indicates a statistically significant difference at the 95 percent confidence level between the coverage rate for a participant category's race and ethnicity and the national coverage rate for that category

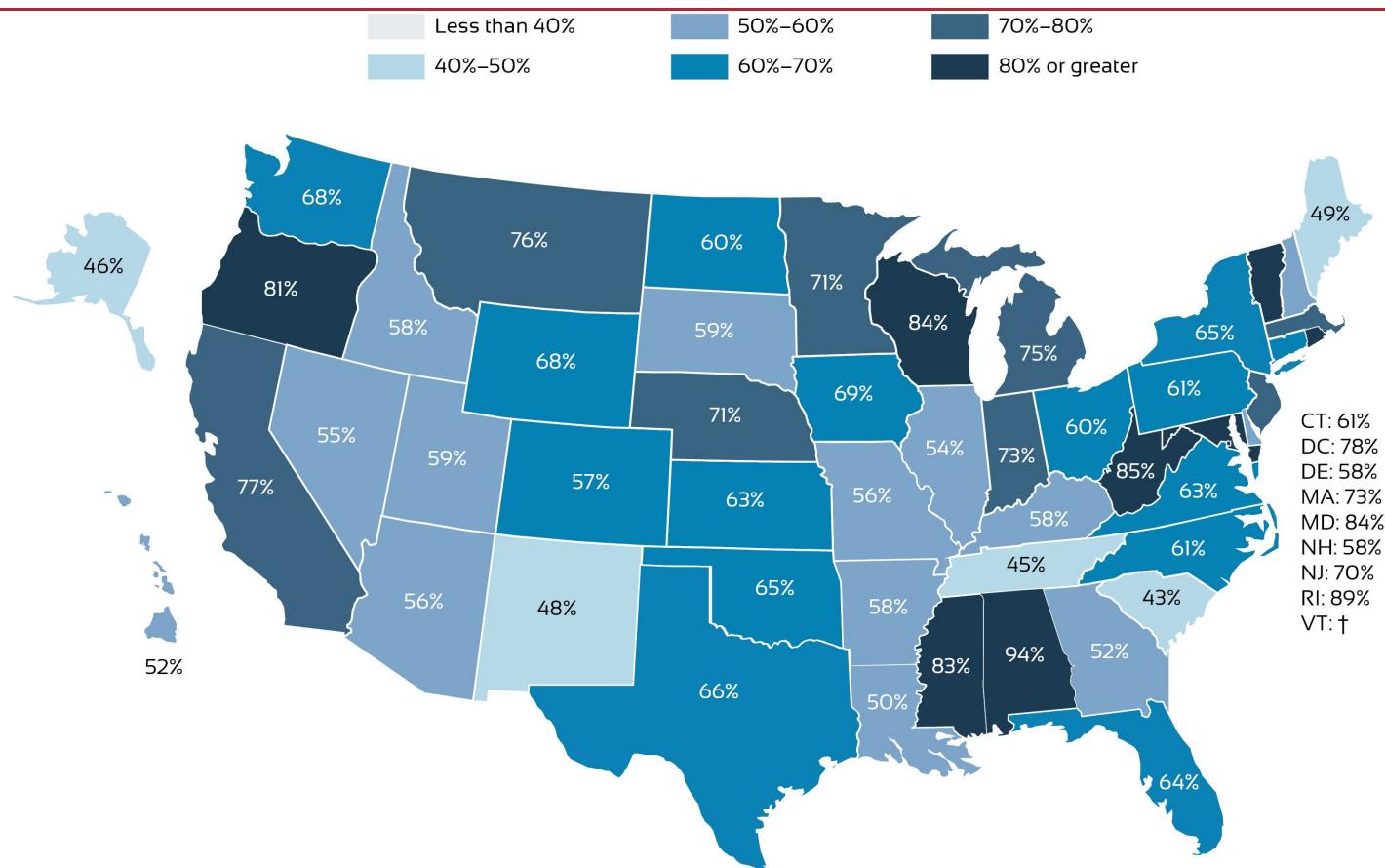
† indicates an unreliable coverage rate over 100 percent with the lower bound of a 95-percent confidence interval above 100 percent or an unreliable coverage rate with the lower bound of a 95-percent confidence interval below 0 percent and the upper bound above 100 percent

^a This category includes non-Hispanic individuals who self-identify as two or more races or self-identify as a race other than White. These categories were combined because of sample size concerns.

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a; unpublished internal WIC administrative data

Figure 4.9. WIC Coverage Rate for Hispanic/Latino Individuals by State: CY 2019

National Coverage Rate for Hispanic/Latino Individuals: 67.3 Percent



Note: Estimates for U.S. territories other than Puerto Rico are not included in the calculation of the coverage rates in this figure because information on race and ethnicity was not available for the other U.S. territories in the data. Estimates for Puerto Rico are included in the national coverage rate.

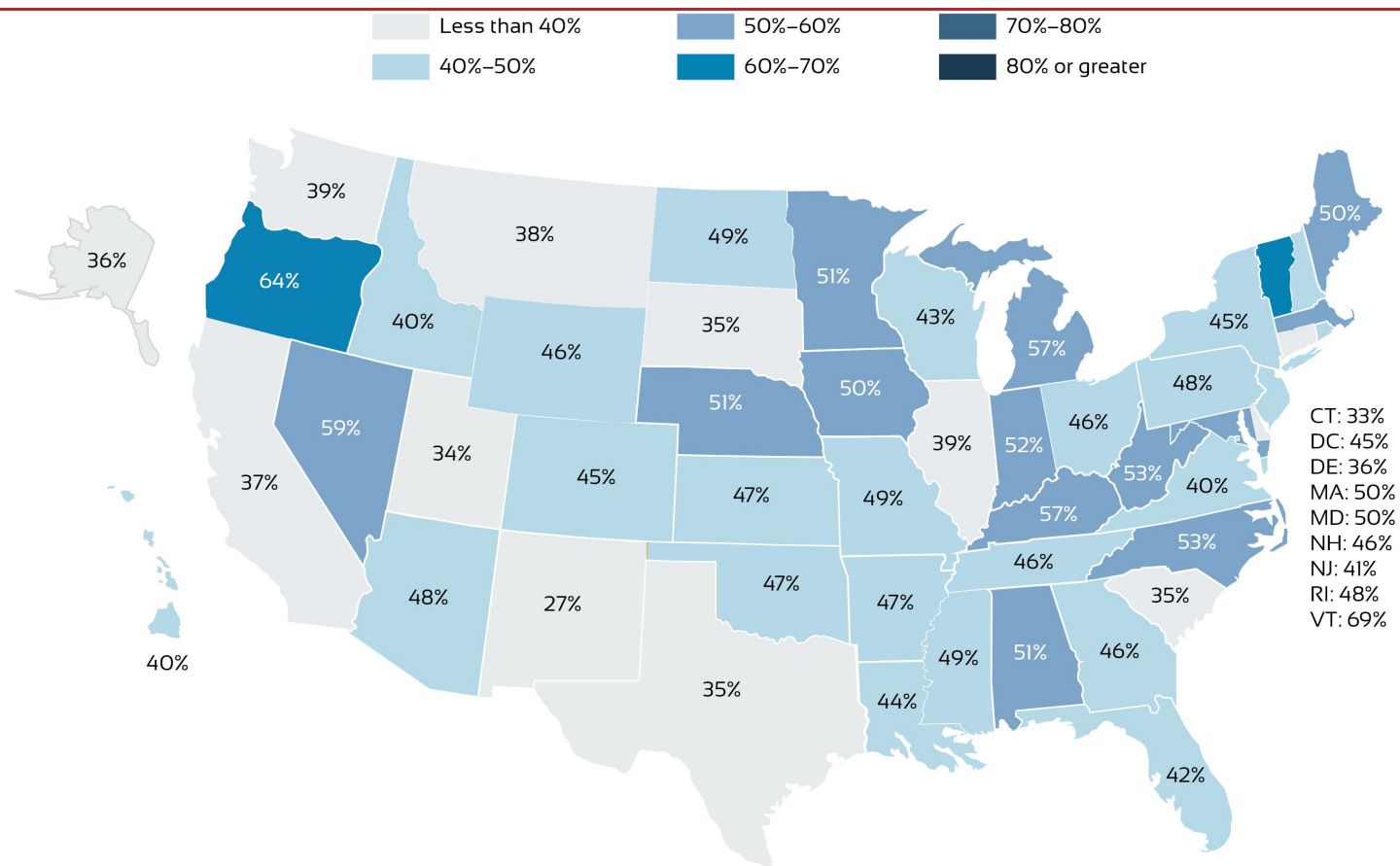
CY = calendar year

† indicates an unreliable coverage rate over 100 percent with the lower bound of a 95-percent confidence interval above 100 percent or an unreliable coverage rate with the lower bound of a 95-percent confidence interval below 0 percent and the upper bound above 100 percent

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a; unpublished internal WIC administrative data

Figure 4.10. WIC Coverage Rate for White-Only, Not Hispanic Individuals by State: CY 2019

National Coverage Rate for White-Only, Not Hispanic Individuals: 45.5 Percent



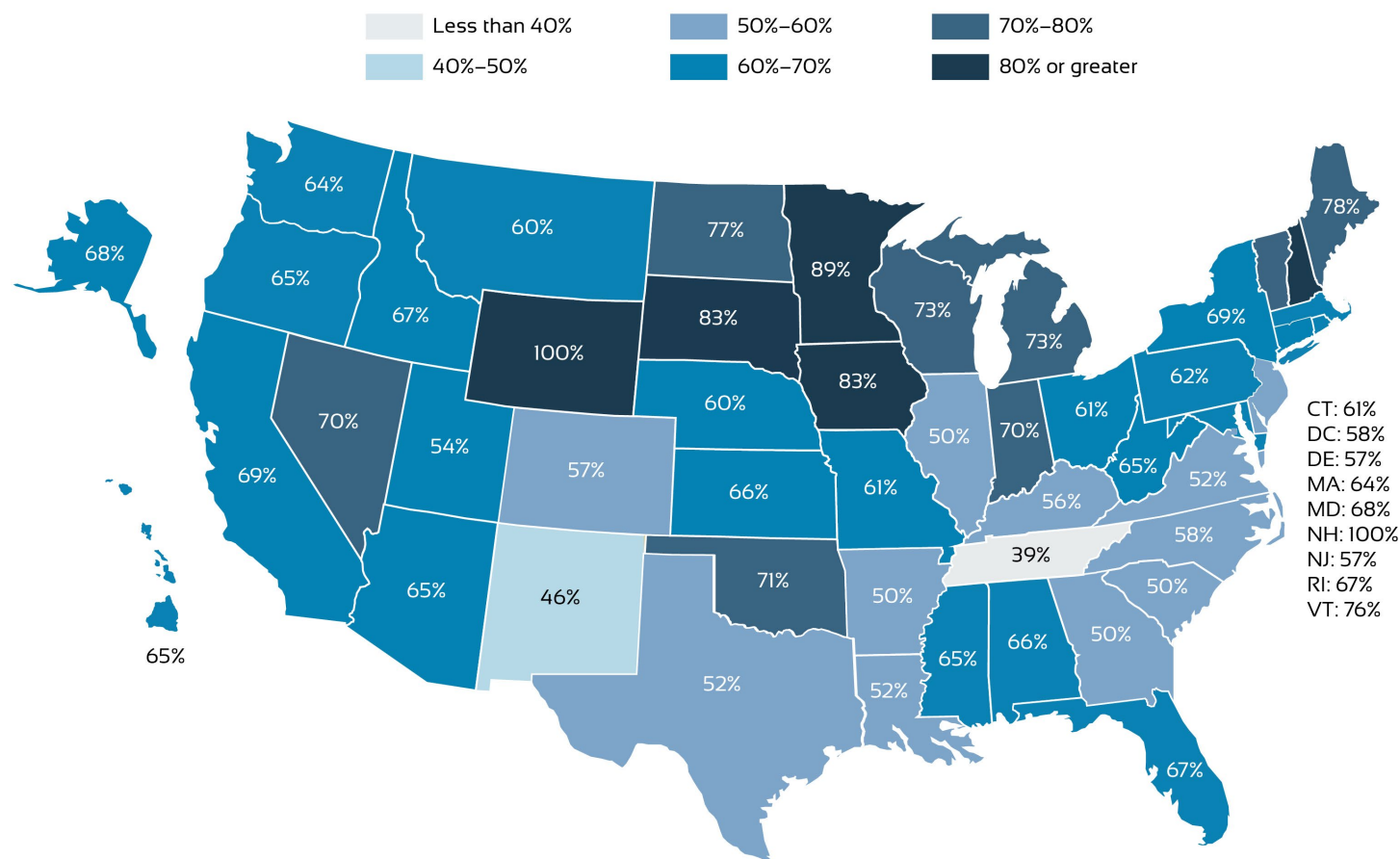
Note: Estimates for U.S. territories other than Puerto Rico are not included in the calculation of the coverage rates in this figure because information on race and ethnicity was not available for the other U.S. territories in the data. Estimates for Puerto Rico are included in the national coverage rate.

CY = calendar year

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a; unpublished internal WIC administrative data

Figure 4.11. WIC Coverage Rate for Other Than White-Only, Not Hispanic Individuals by State: CY 2019

National Coverage Rate for Other Than White-Only, Not Hispanic Individuals: 61.0 Percent



Note: Estimates for U.S. territories other than Puerto Rico are not included in the calculation of the coverage rates in this figure because information on race and ethnicity was not available for the other U.S. territories in the data. Estimates for Puerto Rico are included in the national coverage rate. The Black-Only, Not Hispanic and Two or More Races or Other Race, Not Hispanic categories were combined because of sample size concerns. This category includes Black-only, non-Hispanic individuals and non-Hispanic individuals who self-identify as two or more races or self-identify as a race other than Black or White. The estimated coverage rate exceeded 100 percent for individuals in New Hampshire and Wyoming in 2019. However, the lower bound of the 95 percent confidence interval for these rates is below 100 percent. See chapter 6 in volume I for more information on measures of statistical uncertainty for the eligibility estimates.

CY = calendar year

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a; unpublished internal WIC administrative data

C. Changes in WIC Coverage Rates: CY 2018–CY 2019

Overall, the national WIC coverage rate increased by 1 percentage point between 2018 and 2019 to 57 percent. The increase in coverage rates during this period occurred because the WIC caseload declined by a smaller percentage than the number of individuals eligible for WIC. The number of WIC participants declined by 6 percent⁶⁷ between 2018 and 2019, whereas the number of individuals eligible for WIC decreased by 8 percent (see table 4.8).

Coverage rates increased across all participant categories. The largest increase was for infants and postpartum women (3 percentage points; see figure 4.12). Coverage rates increased by 1 percentage point for pregnant women and children.⁶⁸

The change in coverage rates between 2018 and 2019 remained relatively consistent across all Regions except the Western Region (see table 4.9). The Western Region was the only Region with a statistically significant change in coverage rates between 2018 and 2019. In the Western Region, each participant category, except for children, saw an increase in coverage rates ranging from 5 percentage points for pregnant women to 9 percentage points for infants. The total coverage rate for the Western Region increased by 3 percentage points to 65 percent in 2019.

Table 4.8. Change in WIC Coverage Rate by Participant Category: CY 2018–CY 2019

Participant Category	2018	2019	Percent Change 2018–2019 ^a
Total Eligible			
Infants	1,778,074	1,617,143	-9.1*
Children	7,827,066	7,199,043	-8.0*
Pregnant women	1,172,560	1,066,052	-9.1*
Postpartum women	1,214,917	1,108,854	-8.7*
Breastfeeding women	806,186	742,473	-7.9*
Non-breastfeeding women	408,731	366,381	-10.4*
Total	11,992,617	10,991,092	-8.4*
Total Participants			
Infants	1,687,310	1,590,916	-5.7
Children	3,460,449	3,223,578	-6.8
Pregnant women	606,373	557,725	-8.0
Postpartum women	994,780	939,375	-5.6
Breastfeeding women	536,944	507,589	-5.5
Non-breastfeeding women	457,836	431,786	-5.7
Total	6,748,911	6,311,594	-6.5

⁶⁷ The unrounded percentage is 6.479 percent for children, which rounds to 6 percent.

⁶⁸ The unrounded difference in the coverage rate for pregnant women is 0.603, which rounds to 1 percentage point.

Participant Category	2018	2019	Percent Change 2018–2019 ^a
Coverage Rate			
Infants	94.9	98.4	3.5
Children	44.2	44.8	0.6
Pregnant women	51.7	52.3	0.6
Postpartum women	81.9	84.7	2.8
Breastfeeding women	66.6	68.4	1.8
Non-breastfeeding women	†	†	–
Total	56.3	57.4	1.1

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year

* indicates a statistically significant difference between the 2018 and 2019 estimates of individuals eligible for WIC and the 2018 and 2019 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 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.

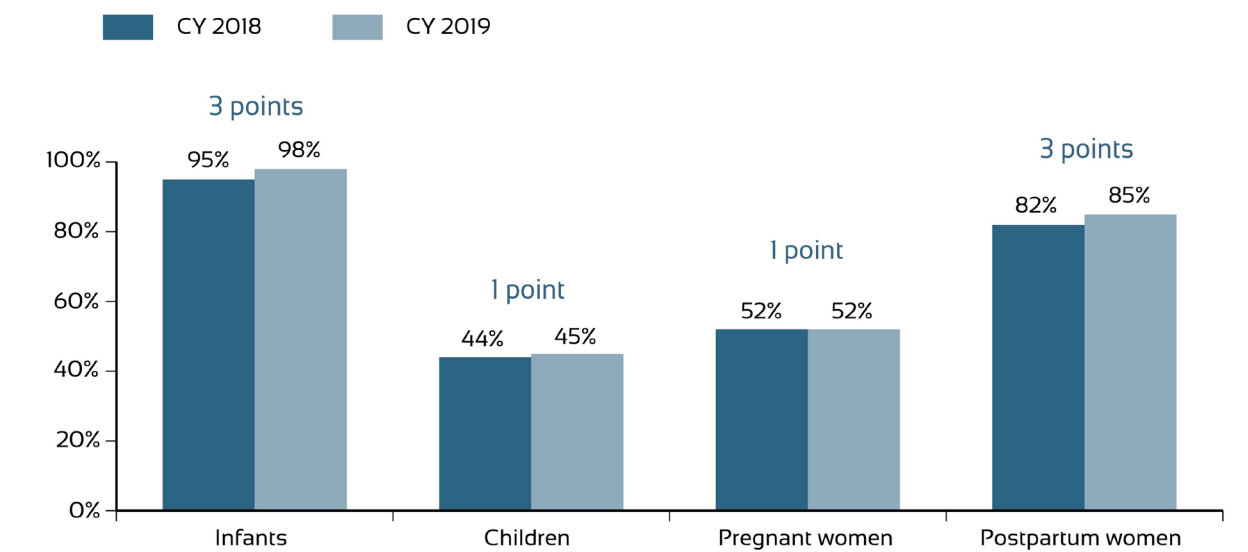
† indicates an unreliable coverage rate over 100 percent with the lower bound of a 95 percent confidence interval above 100 percent

– denotes a blank cell.

^a For the change in coverage rates, this column displays the difference between coverage rates in 2018 and 2019 rather than the percentage change.

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

Figure 4.12. Change in WIC Coverage Rate by Participant Category: CY 2018–2019



Note: Changes in the coverage rates shown in this figure are not statistically significant at the 95 percent confidence level. The unrounded difference in the coverage rate for pregnant women is 0.603, which rounds to 1 percentage point.

CY = calendar year

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

Table 4.9. WIC Coverage Rates by FNS Region and Participant Category: CY 2018–CY 2019

FNS Region	Infants	Children	Pregnant Women	Postpartum Women	Total
Coverage Rate 2018					
Northeast	94.5	48.9	52.1	83.5	59.5
Mid-Atlantic	95.0	45.8	53.6	77.9	57.0
Southeast	98.2	39.6	55.0	81.6	53.8
Midwest	100.0	42.3	50.8	78.6	55.6
Southwest	93.0	38.9	49.0	91.3	53.3
Mountain Plains	86.9	40.0	46.7	73.6	51.0
Western	90.8	53.4	51.7	81.4	61.7
Total	94.9	44.2	51.7	81.9	56.3
Coverage Rate 2019					
Northeast	95.6	48.5	52.2	82.2	59.2
Mid-Atlantic	99.0	47.4	53.8	83.5	59.1
Southeast	96.1	40.1	51.9	80.1	53.9
Midwest	100.0	42.6	53.0	83.1	56.7
Southwest	96.5	39.7	48.5	92.7	54.6
Mountain Plains	90.5	42.2	48.7	75.5	53.6
Western	99.7	55.1	57.0	88.0	65.0
Total	98.4	44.8	52.3	84.7	57.4
Change in Coverage Rate for 2018 versus 2019 (Percentage Point Difference)					
Northeast	1.2	-0.4	0.1	-1.3	-0.3
Mid-Atlantic	4.1	1.6	0.2	5.7	2.1
Southeast	-2.1	0.5	-3.1	-1.5	0.0
Midwest	4.5	0.3	2.3	4.5	1.0
Southwest	3.6	0.8	-0.4	1.4	1.2
Mountain Plains	3.6	2.2	2.0	1.9	2.5
Western	8.9*	1.8	5.2*	6.5*	3.2*
Total	3.5	0.6	0.6	2.8	1.1

Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this table reflect the realigned FNS Regions. The estimated coverage rate exceeded 100 percent for infants in the Midwest Region in 2018 and 2019. However, the lower bound of the 95 percent confidence interval for these rates is below 100 percent. See chapter 6 in volume I for more information on measures of statistical uncertainty for the eligibility estimates.

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year; FNS = Food and Nutrition Service

* indicates a statistically significant difference between the 2018 and 2019 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.

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

D. Trends in WIC Coverage Rates: CY 2005–CY 2019

The 2016–2019 estimates presented in this report differ methodologically from earlier estimates because of changes to the underlying data sources (see chapter 2 for more information). Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution. However, general trends in WIC coverage rates can be assessed. For example, the overall WIC coverage rate

generally increased from 2005 to 2011 before steadily declining through 2015 (see table 4.10 and figure 4.13). Rates fell between 2016 and 2017 but increased consistently between 2017 and 2019.

The relative order of coverage rates by participant category has remained consistent from 2005 to 2019 (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 1-year-old children were consistently highest (and higher than total coverage rates), followed by 2-year-old and 3-year-old children; 4-year-old children had the lowest coverage rates (see figure 4.14).

Figure 4.15 shows the overall coverage rates by Region from 2005 through 2019. 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 F in volume II of this report for trends in coverage rates by Region from 2005 through 2019 for each participant category.

Table 4.10. WIC Coverage Rates: CY 2005–CY 2019

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	13,024,455	7,593,981	58.3
2017	12,966,016	7,184,078	55.4
2018	11,992,617	6,748,911	56.3
2019	10,991,092	6,311,594	57.4

Note: Estimates for 2016–2019 differ methodologically from earlier estimates because of changes to the underlying data sources. Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The 2016–2018 estimates presented in this report were updated to incorporate the methods used to impute Medicaid eligibility among infants aged 0–3 months in the CPS-ASEC (see appendix E in volume II for more information).

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year

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

Table 4.11. WIC Coverage Rates by Participant Category: CY 2005–CY 2019

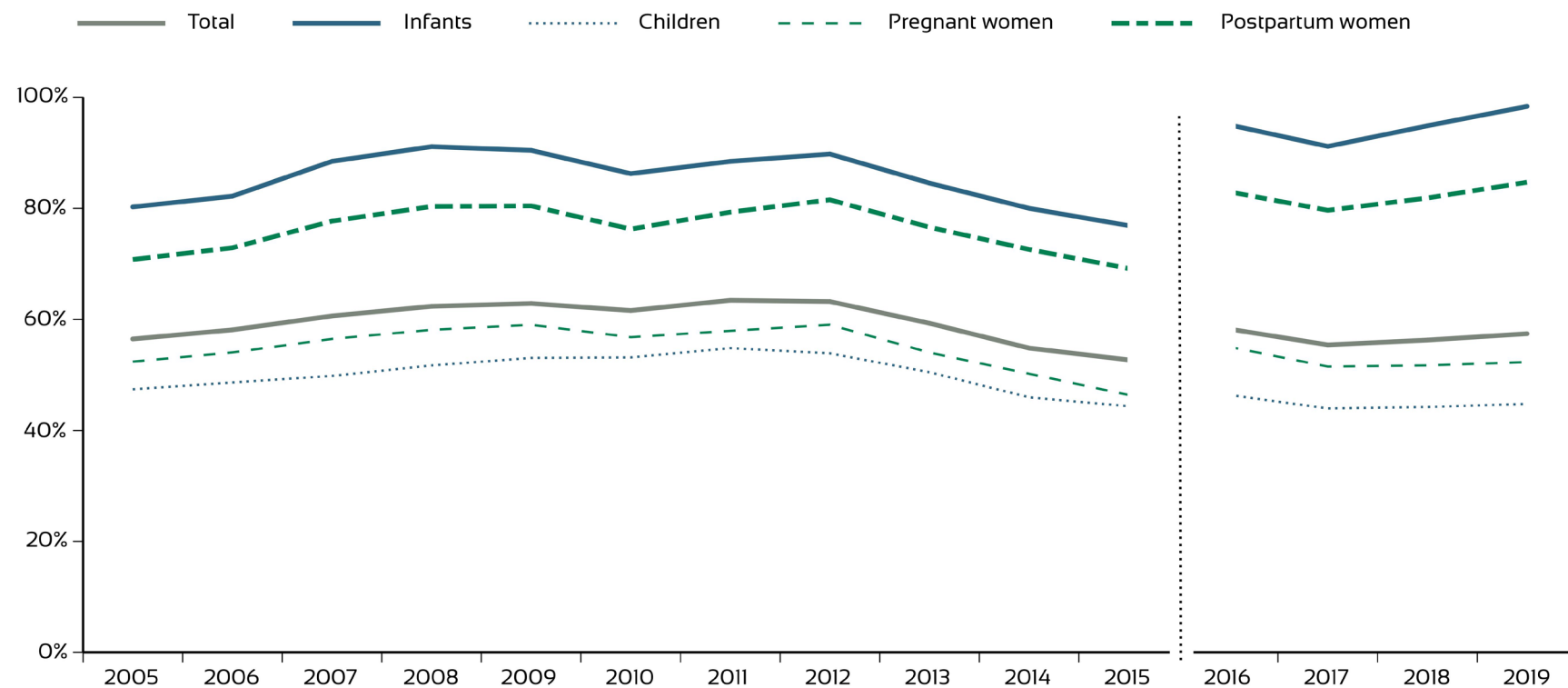
Year	Infants	1-Year-Old Children	2-Year-Old Children	3-Year-Old Children	4-Year-Old Children	All Children	Pregnant Women	Postpartum Breastfeeding Women	Postpartum Non-Breastfeeding Women	All Postpartum Women	Total
2005	80.3	62.0	49.0	45.1	32.0	47.4	52.4	61.4	81.3	70.8	56.5
2006	82.2	65.8	50.2	44.5	32.7	48.6	54.1	62.1	85.8	72.9	58.1
2007	88.5	67.9	51.3	44.7	33.9	49.8	56.5	64.1	95.3	77.7	60.6
2008	91.1	72.0	54.2	46.0	33.4	51.7	58.1	67.2	97.4	80.3	62.4
2009	90.5	75.4	54.0	46.5	35.2	53.1	59.0	68.4	95.8	80.5	62.9
2010	86.3	76.5	55.7	46.8	34.5	53.2	56.8	64.4	91.4	76.3	61.6
2011	88.5	73.6	59.5	50.7	35.1	54.8	57.9	65.1	99.4	79.3	63.5
2012	89.8	76.1	54.9	49.5	35.5	53.9	59.0	67.5	100.0	81.6	63.2
2013	84.6	70.0	51.6	48.0	32.6	50.5	54.0	63.3	97.2	76.6	59.3
2014	80.0	68.2	48.1	42.2	25.9	46.0	50.2	59.5	94.1	72.6	54.8
2015	76.9	62.8	47.0	41.8	26.3	44.4	46.4	57.4	88.9	69.2	52.7
2016	95.1	63.5	49.3	44.1	27.8	46.4	55.1	66.7	†	83.0	58.3
2017	91.2	60.7	45.1	42.2	26.7	44.0	51.5	64.7	†	79.7	55.4
2018	94.9	61.4	48.4	40.7	26.5	44.2	51.7	66.6	†	81.9	56.3
2019	98.4	64.9	48.5	43.7	24.5	44.8	52.3	68.4	†	84.7	57.4

Note: Coverage rate estimates for 2016–2019 differ methodologically from earlier estimates because of changes to the underlying data sources. Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The 2016–2018 estimates presented in this report were updated to incorporate the methods used to impute Medicaid eligibility among infants aged 0–3 months in the CPS-ASEC (see appendix E in volume II for more information). The estimated coverage rates for postpartum non-breastfeeding women exceeded 100 percent in 2012. 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. CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year

† indicates an unreliable coverage rate over 100 percent with the lower bound of a 95 percent confidence interval above 100 percent

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a, n.d.b; unpublished internal WIC administrative data

Figure 4.13. Trends in WIC Coverage Rates by Participant Category: CY 2005–CY 2019

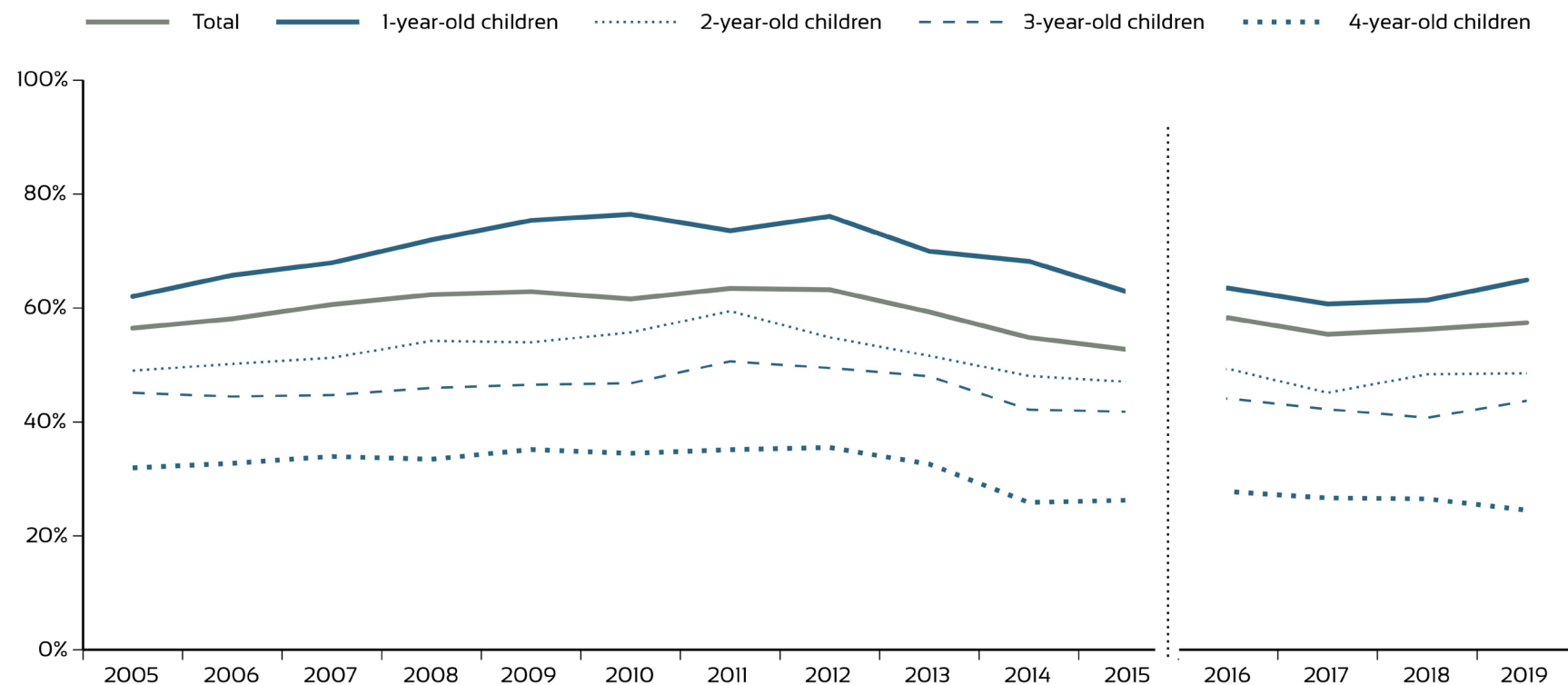


Note: Coverage rate estimates for 2016–2019 differ methodologically from earlier estimates because of changes to the underlying data sources. Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The 2016–2018 estimates presented in this report were updated to incorporate the methods used to impute Medicaid eligibility among infants aged 0–3 months in the CPS-ASEC (see appendix E in volume II for more information).

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year

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

Figure 4.14. Trends in WIC Coverage Rates for Children by Year of Age: CY 2005–CY 2019

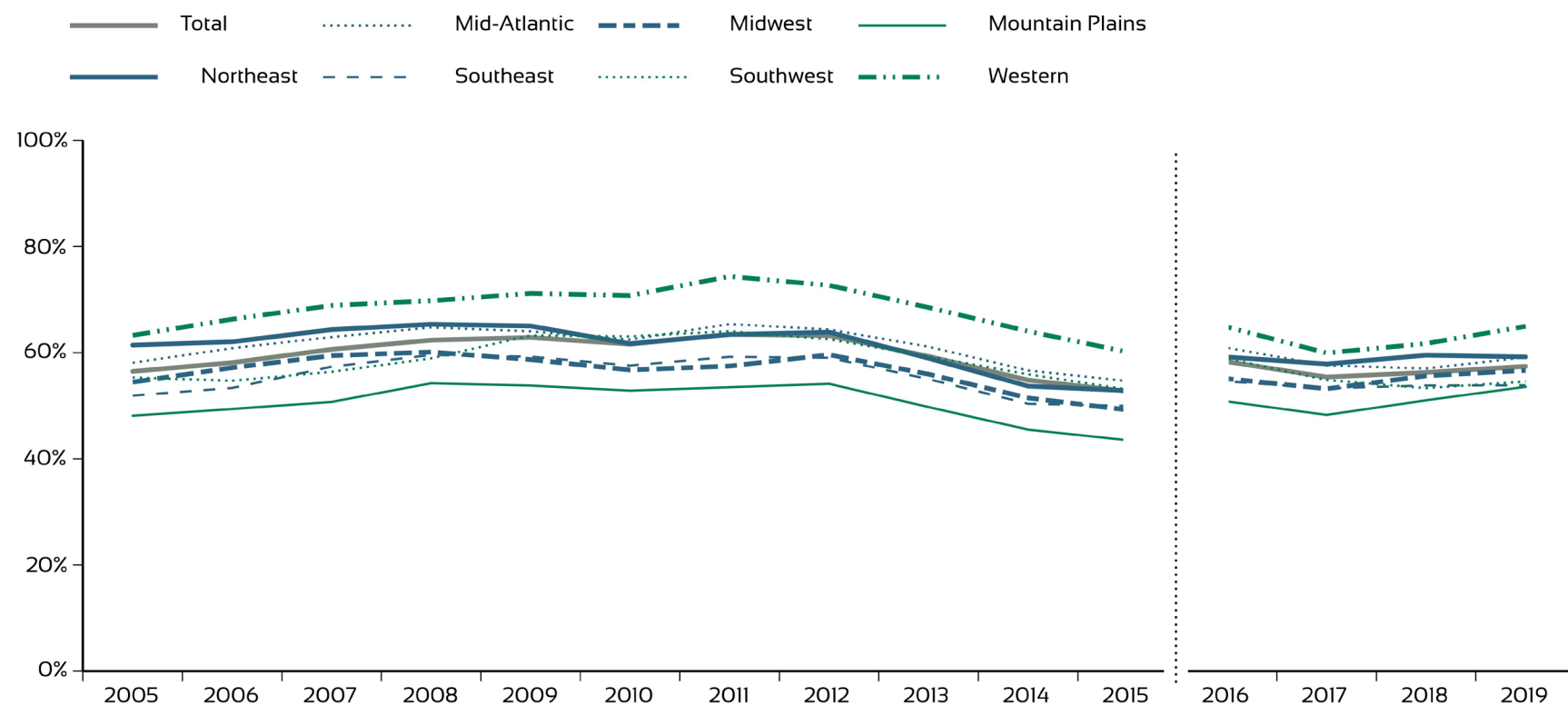


Note: Coverage rate estimates for 2016–2019 differ methodologically from earlier estimates because of changes to the underlying data sources. Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The 2016–2018 estimates presented in this report were updated to incorporate the methods used to impute Medicaid eligibility among infants aged 0–3 months in the CPS-ASEC (see appendix E in volume II for more information).

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a, n.d.b; unpublished internal WIC administrative data

Figure 4.15. Trends in WIC Coverage Rates by FNS Region: CY 2005–CY 2019



Note: On October 1, 2019, the FNS Regions were realigned. The 2019 coverage rates presented in this figure reflect the realigned FNS Regions. Coverage rate estimates for 2016–2019 differ methodologically from earlier estimates because of changes to the underlying data sources. Comparisons of the 2016 through 2019 estimates with prior estimates should be interpreted with caution (see chapter 2 in Farson Gray et al., 2021, for more information). The 2016–2018 estimates presented in this report were updated to incorporate the methods used to impute Medicaid eligibility among infants aged 0–3 months in the CPS-ASEC (see appendix E in volume II for more information). CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year; FNS = Food and Nutrition Service. Sources: IPUMS-USA, n.d.; U.S. Census Bureau, n.d.a, n.d.b; unpublished internal WIC administrative data

Chapter 5. WIC Participation Rates for CY 2019

This chapter presents participation rates for women, infants, and children in 2019. 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 2019. 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 income eligibility, or nutritional risk. Participation rates are useful for understanding the overall reach of WIC across the total population.

A. National-Level WIC Participation Rates

Forty-three percent of all infants and 20 percent of all children received WIC benefits (see table 5.1). Similar to WIC coverage rates, participation rates for children were highest for 1-year-old children (28 percent⁶⁹) and lowest for 4-year-old children (12 percent). Slightly more postpartum women (25 percent) than pregnant women (20 percent) received WIC benefits. The participation rate for postpartum breastfeeding women and postpartum non-breastfeeding women was 25 percent.⁷⁰

Table 5.1. WIC Participation Rates by Participant Category: CY 2019

Participant Category	Number Participating	Total Population	Participation Rate
Infants	1,590,916	3,736,739	42.6
Children	3,223,578	15,805,699	20.4
1-year-old children	1,101,352	3,866,196	28.5
2-year-old children	870,813	3,931,383	22.2
3-year-old children	778,762	3,963,295	19.6
4-year-old children	472,651	4,044,826	11.7
Pregnant women	557,725	2,787,546	20.0
Postpartum women	939,375	3,716,728	25.3
Breastfeeding women	507,589	2,020,722	25.1
Non-breastfeeding women	431,786	1,696,005	25.5
Total	6,311,594	26,046,712	24.2

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 is based on the distribution of children who were enrolled in WIC in 2018 according to WIC PC2018 data.

CY = calendar year

Sources: Kline et al., 2020; U.S. Census Bureau, n.d.a, n.d.b; unpublished internal WIC administrative data

B. Regional- and State-Level WIC Participation Rates

Participation rates varied among Regions and States.⁷¹ The Western Region had the highest participation rate (27 percent), and the Mountain Plains Region had the lowest (20 percent) in comparison with the national average of 24 percent (see table 5.2). Among States, rates ranged from a low of 13 percent in

⁶⁹ The unrounded percentage is 28.487 percent for children, which rounds to 28 percent.

⁷⁰ The unrounded percentage is 25.459 percent for postpartum non-breastfeeding women, which rounds to 25 percent.

⁷¹ On October 1, 2019, the FNS Regions were realigned. The 2019 estimates presented in this report reflect the realigned FNS Regions.

Utah to a high of 32 percent in Mississippi. Most States (27) had participation rates between 20 percent and 25 percent. Puerto Rico had a higher participation rate (68 percent) than any State.

Table 5.2. WIC Participation Rates by State and FNS Region: CY 2019

State	Number Participating	Total Population	Participation Rate
Alabama	114,454	393,078	29.1*
Alaska	15,741	66,916	23.5
Arizona	140,747	562,509	25.0*
Arkansas	65,366	249,743	26.2*
California	900,654	3,114,526	28.9*
Colorado	81,187	438,450	18.5*
Connecticut	45,200	239,123	18.9*
Delaware	16,253	73,002	22.3*
District of Columbia	11,879	61,917	19.2*
Florida	423,881	1,510,967	28.1*
Georgia	202,160	875,871	23.1*
Hawaii	25,443	109,740	23.2
Idaho	30,543	153,315	19.9*
Illinois	179,152	988,071	18.1*
Indiana	138,090	554,017	24.9*
Iowa	57,628	259,136	22.2*
Kansas	47,896	243,622	19.7*
Kentucky	93,322	361,852	25.8*
Louisiana	100,202	402,701	24.9*
Maine	17,208	83,234	20.7*
Maryland	121,792	481,090	25.3*
Massachusetts	102,594	474,475	21.6*
Michigan	205,016	751,902	27.3*
Minnesota	99,394	464,412	21.4*
Mississippi	78,447	246,942	31.8*
Missouri	105,160	488,479	21.5*
Montana	15,519	80,267	19.3*
Nebraska	33,872	172,805	19.6*
Nevada	59,019	243,655	24.2
New Hampshire	12,060	83,926	14.4*
New Jersey	134,485	677,794	19.8*
New Mexico	40,220	156,975	25.6*
New York	371,533	1,493,834	24.9*
North Carolina	208,072	810,868	25.7*
North Dakota	11,206	71,029	15.8*
Ohio	190,690	917,872	20.8*
Oklahoma	91,075	333,716	27.3*
Oregon	80,018	298,851	26.8*

State	Number Participating	Total Population	Participation Rate
Pennsylvania	198,481	924,485	21.5*
Puerto Rico	105,382	154,445	68.2
Rhode Island	17,852	71,693	24.9
South Carolina	82,228	389,720	21.1*
South Dakota	16,396	80,681	20.3*
Tennessee	109,444	545,598	20.1*
Texas	678,959	2,606,500	26.0*
Utah	42,697	328,447	13.0*
Vermont	11,223	38,600	29.1*
Virginia	109,159	670,095	16.3*
Washington	127,624	598,103	21.3*
West Virginia	32,790	122,715	26.7*
Wisconsin	86,911	436,993	19.9*
Wyoming	7,819	46,090	17.0*
FNS Region			
Northeast	580,614	2,493,963	23.3*
Mid-Atlantic	730,222	3,165,543	23.1*
Southeast	1,312,008	5,134,895	25.6*
Midwest	956,881	4,372,403	21.9*
Southwest	1,159,265	4,640,592	25.0*
Mountain Plains	319,054	1,621,423	19.7*
Western	1,253,551	4,617,892	27.1*
Total	6,311,594	26,046,712	24.2

Note: On October 1, 2019, the FNS Regions were realigned. The 2019 estimates presented in this table reflect the realigned FNS Regions. 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. State and regional estimates and participant data include individuals in ITOs.

CPS-ASEC = Current Population Survey Annual Social and Economic Supplement; CY = calendar year; FNS = Food and Nutrition Service; ITO = Indian Tribal Organization

* 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 with the national participation rate.

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

Chapter 6. Measures of Precision for the Estimates of Eligibility

Coverage and participation rate estimates were calculated, in part, using data from several large-scale, complex, nationally representative surveys, including the CPS-ASEC (U.S. Census Bureau, n.d.a) and the ACS (IPUMS-USA, n.d.). Several sources of error can cause sample estimates to differ from the true population values. These sources of error are commonly classified into two major categories: sampling errors and non-sampling errors.

To compensate for sampling errors, weights were constructed and prepared following data collection to inflate the respondents' data to represent the entire universe. To measure sampling errors, standard errors were produced for the 2019 national-, regional-, and State-level estimates of eligibility for WIC.⁷² Section A describes the method used to produce the standard errors for the national-level estimates presented in this report. Section B presents the standard errors for the national-level estimates, and section C presents the standard errors for the regional- and State-level estimates presented in this report. The standard errors for the regional- and State-level estimates were derived using the replicate weight methodology described in appendix E of Trippe et al. (2019).

Non-sampling errors occur in cases when there is a complete enumeration of a target population. Sources of error include 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 data. 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.

A. Method for Producing Standard Errors for National-Level Estimates

Because of the COVID-19 pandemic, the 2020 CPS-ASEC faced difficult interviewing conditions, resulting in a substantial increase in the nonresponse rate for the survey (Rothbaum & Bee, 2021). The characteristics of nonrespondents were nonrandom. Nonresponse in the 2020 CPS-ASEC was more strongly associated with median income and educational attainment than in prior years. As a result, respondents had relatively higher income and were more educated than nonrespondents. To address the potential impact of the nonresponse rate, the U.S. Census Bureau instituted additional nonresponse weighting procedures and released an alternate set of weights for the CPS-ASEC microdata file in 2021. The alternate weights used a process known as “entropy balancing” to adjust for nonrandom nonresponse in the March 2020 survey (see Rothbaum & Bee, 2021, for more information). The 2019 estimates presented in this report use the alternate weights developed by the U.S. Census Bureau.

⁷² Estimates of WIC eligibility for U.S. territories other than Puerto Rico are based on U.S. Census Bureau estimates of the population by age (U.S. Census Bureau, n.d.b), not on samples. These estimates were not subject to sampling variability.

The 2020 CPS-ASEC replicate weights (used to produce the standard errors presented in this report), however, were not adjusted for the alternate nonrandom nonresponse weighting procedures. This set of replicate weights does not reflect the effect of the additional weighting on standard errors. In consultation with U.S. Census Bureau staff, the study team developed a procedure to adjust the standard error estimates for the effect of the additional nonresponse weighting.

The procedures for calculating national-level standard error estimates involved calculating bootstrap variance estimates for a set of survey items using the entropy balance weights under the assumption of a simple random sample. The study team then calculated estimated design effects using the original March supplement weight and the original CPS-ASEC replicate weights. Design effects were calculated for survey items by race and ethnicity and by age for the WIC-eligible and total populations. The design effects were averaged over categories within each of the four groups:

- ▶ Race and ethnicity groups for the total population
- ▶ Age groups for the total population
- ▶ Race and ethnicity groups for the population eligible for WIC
- ▶ Age groups for the population eligible for WIC

The averaged design effects were multiplied by the simple bootstrap variance estimates to yield adjusted variance estimates accounting for the complexity of the CPS sample design and the additional nonresponse weighting. The square-roots of the adjusted variance estimates produced the national-level standard error estimates presented in this report.

A detailed description of the procedure for calculating the design effects and national standard error estimates is described in the steps below:

1. Calculate a variance estimate for each survey item using the simple bootstrap based on the entropy balance weights (EBW_PU_PERSON). Denote these variance estimates by $\tilde{V}_M(\hat{y}_k), k=1, 2, \dots, K$.
2. Calculate a variance estimate for each survey item using the simple bootstrap method applied to the March supplement weights (MARSUPWT). Denote these variance estimates by $\tilde{V}_M(\hat{y}_k), k=1, 2, \dots, K$.
3. Calculate a variance estimate for each survey item using the existing March supplement replicate weights:

$$\hat{V}_{RW}(\hat{y}_k) = \frac{4}{160} \sum_{r=1}^{160} (\hat{y}_{kr} - \hat{y}_{k0})^2$$

In this equation, $\hat{y}_{kr}$ is the estimate for survey item k calculated using replicate r weights, and is $\hat{y}_{k0}$ the estimate calculated using the full-sample (replicate 0) weights.⁷³

⁷³ The variance estimate formula is on page G-15 of *Technical Documentation, 2020 Annual Social and Economic Supplements* (U.S. Census Bureau, n.d.a).

4. Calculate the estimated design effect for each survey item as the step 3 variance estimate divided by step 2 variance estimate:

$$f_{DE,k}^{(1)} = \frac{\hat{V}_{RW}(\hat{y}_k)}{\hat{V}_M(\hat{y}_k)}$$

5. Average the design effect estimates over survey items within race and ethnicity and age groups to get a final design effect adjustment factor:

$$f_{DE}^{(1)} = \frac{\sum_{k=1}^K f_{DE,k}^{(1)}}{K}$$

6. For each survey item, multiply the final design effect adjustment factor by the variance calculated in step 1 to get an adjusted variance estimate for each survey item:

$$f_{DE}^{(1)} \cdot \hat{V}_E(\hat{y}_k)$$

The square root of the result in step 6 is the standard error estimate for survey item k .

B. Standard Errors and Coefficients of Variation for National-Level Estimates

Table 6.1 presents the national-level estimates of WIC eligibility by participant category and race and Hispanic ethnicity and the standard errors and coefficients of variation. The coefficient of variation is the ratio of the standard error to the eligibility estimate. Because the coefficient of variation is expressed in percentage terms, it facilitates easier comparison of precision across estimates. (The usage of the estimates is discussed at the end of section C.)

Table 6.1. Standard Errors and Coefficients of Variation for Estimated Number of Individuals Eligible for WIC by Participant Category and Race and Hispanic Ethnicity: CY 2019

Participant Category	Hispanic/Latino	White-Only, Not Hispanic	Black-Only, Not Hispanic	Two or More Races or Other Race, Not Hispanic	Total
Number Eligible					
Infants	527,351	614,844	324,257	127,238	1,593,689
Children	2,456,189	2,641,799	1,343,012	651,802	7,092,802
Pregnant women	348,316	403,419	215,074	83,763	1,050,573
Postpartum women	370,191	423,087	211,914	87,543	1,092,735
Total	3,702,046	4,083,149	2,094,257	950,347	10,829,799
Standard Error					
Infants	25,561	34,789	26,288	16,835	52,013
Children	48,590	64,123	43,008	33,505	97,706
Pregnant women	16,883	22,826	17,437	11,083	34,283
Postpartum women	17,943	23,939	17,180	11,583	35,542
Total	77,180	103,690	76,166	52,761	154,852

Participant Category	Hispanic/Latino	White-Only, Not Hispanic	Black-Only, Not Hispanic	Two or More Races or Other Race, Not Hispanic	Total
Coefficient of Variation (Percent)					
Infants	4.8	5.7	8.1	13.2	3.3
Children	2.0	2.4	3.2	5.1	1.4
Pregnant women	4.8	5.7	8.1	13.2	3.3
Postpartum women	4.8	5.7	8.1	13.2	3.3
Total	2.1	2.5	3.6	5.6	1.4

Note: 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 the totals.

CY = calendar year; FNS = Food and Nutrition Service

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a; unpublished internal WIC administrative data

C. Standard Errors and Coefficients of Variation for Regional- and State-Level Estimates

Tables 6.2 and 6.3 present the standard errors as well as the coefficients of variation for the 2019 regional- and State-level estimates, respectively. The coefficients of variation for the 2019 national eligibility estimates were higher for infants, pregnant women, and postpartum women (3.2 percent for each) than children (1.4 percent), reflecting the larger sample size for children (see table 6.2).

Table 6.2. Standard Errors and Coefficients of Variation for Estimated Number of Individuals Eligible for WIC by FNS Region and Participant Category: CY 2019

Region	Infants	Children	Pregnant Women	Postpartum Women	Total
Number Eligible					
Northeast	142,211	637,874	93,739	99,876	973,701
Mid-Atlantic	161,078	728,501	106,199	110,632	1,106,409
Southeast	371,996	1,573,946	245,351	244,886	2,436,179
Midwest	241,338	1,126,580	158,946	162,125	1,688,989
Southwest	320,297	1,376,484	211,227	216,802	2,124,811
Mountain Plains	89,213	385,468	58,711	62,172	595,564
Western	267,555	1,263,951	176,399	196,242	1,904,147
Total	1,593,689	7,092,802	1,050,573	1,092,735	10,829,799
Standard Error					
Northeast	6,474	21,905	4,270	4,516	25,088
Mid-Atlantic	7,073	18,221	4,663	4,863	22,666
Southeast	13,715	32,980	9,046	9,022	43,937
Midwest	9,461	31,687	6,234	6,340	37,973
Southwest	12,056	32,565	7,950	8,157	43,213
Mountain Plains	4,938	12,599	3,253	3,443	16,643
Western	10,143	42,620	6,687	7,383	49,626
Total	50,965	95,739	33,593	34,826	151,734

Region	Infants	Children	Pregnant Women	Postpartum Women	Total
Coefficient of Variation (Percent)					
Northeast	4.6	3.4	4.6	4.5	2.6
Mid-Atlantic	4.4	2.5	4.4	4.4	2.0
Southeast	3.7	2.1	3.7	3.7	1.8
Midwest	3.9	2.8	3.9	3.9	2.2
Southwest	3.8	2.4	3.8	3.8	2.0
Mountain Plains	5.5	3.3	5.5	5.5	2.8
Western	3.8	3.4	3.8	3.8	2.6
Total	3.2	1.4	3.2	3.2	1.4

Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this table reflect the realigned FNS Regions. 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.

CY = calendar year; FNS = Food and Nutrition Service

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

At the State level, the coefficients of variation were notably higher than at the national level (see table 6.3). For States, the coefficient of variation ranged from 1.9 percent in Texas to 14.7 percent in North Dakota. 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, ranging from 1.8 in the Southeast to 2.8 in the Mountain Plains.

Table 6.3. Standard Errors and Coefficients of Variation for Estimated Number of Individuals Eligible for WIC by State and FNS Region: CY 2019

State	Number Eligible	Standard Error	Coefficient of Variation (Percent)
Alabama	185,112	6,905	3.7
Alaska	29,985	3,362	11.2
Arizona	252,442	9,106	3.6
Arkansas	133,103	4,961	3.7
California	1,307,996	30,960	2.4
Colorado	152,037	5,546	3.6
Connecticut	82,203	4,160	5.1
Delaware	32,551	2,571	7.9
District of Columbia	19,331	1,495	7.7
Florida	734,199	15,372	2.1
Georgia	410,673	9,957	2.4
Hawaii	43,590	5,452	12.5
Idaho	66,696	3,945	5.9
Illinois	375,608	10,095	2.7
Indiana	233,905	7,773	3.3
Iowa	98,365	4,793	4.9
Kansas	87,221	4,158	4.8
Kentucky	164,479	5,807	3.5
Louisiana	205,123	6,137	3.0

State	Number Eligible	Standard Error	Coefficient of Variation (Percent)
Maine	32,494	2,587	8.0
Maryland	179,443	6,818	3.8
Massachusetts	164,079	5,561	3.4
Michigan	318,396	10,185	3.2
Minnesota	147,889	8,675	5.9
Mississippi	131,639	4,573	3.5
Missouri	200,241	6,374	3.2
Montana	35,138	2,888	8.2
Nebraska	57,262	3,519	6.1
Nevada	100,030	4,678	4.7
New Hampshire	23,360	2,437	10.4
New Jersey	231,367	7,269	3.1
New Mexico	92,567	4,027	4.4
New York	629,999	17,966	2.9
North Carolina	366,161	10,044	2.7
North Dakota	18,472	2,721	14.7
Ohio	364,624	10,927	3.0
Oklahoma	156,368	7,409	4.7
Oregon	116,029	5,192	4.5
Pennsylvania	362,974	9,381	2.6
Rhode Island	26,108	2,186	8.4
South Carolina	192,773	6,737	3.5
South Dakota	30,677	3,087	10.1
Tennessee	251,143	7,387	2.9
Texas	1,186,061	22,943	1.9
Utah	99,146	4,813	4.9
Vermont	15,457	1,387	9.0
Virginia	221,025	8,284	3.7
Washington	239,820	9,098	3.8
West Virginia	59,718	2,653	4.4
Wisconsin	150,202	6,369	4.2
Wyoming	14,516	1,507	10.4

State	Number Eligible	Standard Error	Coefficient of Variation (Percent)
FNS Region			
Northeast	973,701	25,088	2.6
Mid-Atlantic	1,106,409	22,666	2.0
Southeast	2,436,179	43,937	1.8
Midwest	1,688,989	37,973	2.2
Southwest	2,124,811	43,213	2.0
Mountain Plains	595,564	16,643	2.8
Western	1,904,147	49,626	2.6
Total	10,829,799	151,734	1.4

Note: On October 1, 2019, the FNS Regions were realigned. The estimates presented in this table reflect the realigned FNS Regions. 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.

CY = calendar year; FNS = Food and Nutrition Service; ITO = Indian Tribal Organization

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

The coefficients of variation were even larger for the estimated coverage rates for participant categories by State (see table 6.4). For example, the coefficients of variation for infant coverage rates ranged from 4.1 percent (California) to 25.6 percent (the District of Columbia). Similarly, the coefficients of variation for White-only, non-Hispanic individuals ranged from 3.6 percent (Florida) to 76.6 percent (the District of Columbia; see table 6.5). Therefore, it is 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 the actual number of individuals eligible for WIC in 2019 (overall, by participant category, Region, or State) is at a minimum equal to the estimate minus 1.96 times the standard error and 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 6.2). The point estimate for individuals eligible for WIC in the Northeast in an average month of 2019 is 973,701. The standard error of that estimate is 25,088. There is a 95 percent likelihood the true number falls within the range from (973,701 minus $(1.96 \times 25,088)$) to (973,701 plus $(1.96 \times 25,088)$), or from 924,529 to 1,022,873.

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 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.⁷⁴

⁷⁴ 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 Alabama (see table 4.6 in chapter 4). The point estimate for the coverage rate in Alabama is 61.8 percent. The standard error of that estimate (2.3 percent) is calculated from the coefficient of variation (0.618×0.037); see table 6.3. There is a 95 percent likelihood the true coverage rate falls within the following range:

$$\begin{aligned} &61.8 \pm (1.96 * 2.3) \\ &= 61.8 \pm 4.5 \\ &95\% \text{ confidence interval} = (57.3, 66.3) \end{aligned}$$

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 the true value—the true coverage rate—falls within the estimated bounds determined by the MOE. In the Alabama example, the 95 percent confidence interval around the coverage rate is 61.8 percent minus or plus the MOE, which is 4.5. Thus, there is a 95 percent likelihood the true coverage rate for Alabama falls between 61.8 minus or plus 4.5, or between 57.3 and 66.3 percent. Volume II of this report includes tables showing MOEs for all State-level coverage rates (see table B.10 for State-level coverage rates by participant categories and table B.11 for State-level coverage rates by race and Hispanic ethnicity categories).

D. Statistical Significance Testing for Report Tables and Figures

The tables and figures in this report present several types of statistical comparisons: racial and ethnic groups by participant category versus national estimates, State and regional estimates versus national estimates, and 2019 estimates versus 2018 estimates. Statistical significance testing is conducted using z-tests. This methodology proceeds with the following steps:

1. Calculate the difference between the two estimates being compared.
2. Calculate the standard error of the difference as the square root of the sum of the estimate variances minus two times the covariance of the two estimates.
3. Divide the step 1 difference by the step 2 standard error and calculate the *p*-value of the result.
4. If the *p*-value is less than .05, the difference is said to be statistically significant at the 95 percent confidence level.

Table 6.4. Coefficients of Variation of WIC Coverage Rates by State and Participant Category: CY 2019

State	Infants	1-Year-Old Children	2-Year-Old Children	3-Year-Old Children	4-Year-Old Children	All Children	Pregnant Women	Postpartum Women	Total
Alabama	9.5	7.7	8.5	7.5	10.5	3.7	9.5	9.5	3.7
Alaska	18.9	18.1	16.7	16.9	37.3	12.9	18.9	18.9	11.2
Arizona	8.0	7.2	6.6	5.5	13.3	4.1	8.0	8.0	3.6
Arkansas	8.8	8.4	8.0	9.4	9.2	3.5	8.8	8.8	3.7
California	4.1	3.9	3.6	3.8	9.4	2.9	4.1	4.1	2.4
Colorado	9.2	7.8	7.8	6.9	10.3	3.6	9.2	9.2	3.6
Connecticut	12.0	9.4	12.6	11.7	16.9	6.0	12.0	12.0	5.1
Delaware	20.2	19.3	18.9	14.4	21.9	7.5	20.2	20.1	7.9
District of Columbia	25.6	32.0	23.6	19.0	23.5	8.7	25.6	25.5	7.7
Florida	5.1	4.8	4.9	4.6	6.4	2.1	5.1	5.1	2.1
Georgia	5.6	6.6	5.5	5.1	6.7	2.6	5.6	5.6	2.4
Hawaii	14.2	14.9	12.9	13.3	67.9	16.1	14.2	14.2	12.5
Idaho	13.8	12.5	11.4	12.7	11.0	5.6	13.8	13.8	5.9
Illinois	7.1	5.6	5.4	5.5	7.7	2.6	7.1	7.1	2.7
Indiana	7.4	6.5	6.6	7.0	9.3	3.8	7.4	7.4	3.3
Iowa	11.4	11.3	11.0	10.1	11.2	4.9	11.4	11.4	4.9
Kansas	10.8	9.9	10.5	10.0	14.1	5.4	10.8	10.8	4.8
Kentucky	8.1	8.4	7.7	7.4	11.4	4.1	8.1	8.1	3.5
Louisiana	6.9	8.2	6.6	7.3	10.0	3.4	6.9	6.9	3.0
Maine	18.7	18.6	18.8	15.7	16.9	8.5	18.7	18.7	8.0
Maryland	8.6	9.0	8.2	7.8	8.9	3.9	8.6	8.5	3.8
Massachusetts	8.9	8.4	7.8	9.0	12.7	4.9	8.9	8.8	3.4
Michigan	6.5	6.2	5.2	6.5	10.2	3.5	6.5	6.5	3.2
Minnesota	11.0	9.0	8.3	10.3	21.6	7.3	11.0	10.9	5.9
Mississippi	8.5	9.1	7.7	9.5	11.1	4.1	8.5	8.5	3.5
Missouri	7.9	6.5	6.5	7.0	8.9	3.4	7.9	7.9	3.2
Montana	19.2	17.3	14.1	18.0	18.6	8.0	19.3	19.2	8.2
Nebraska	15.0	14.8	13.2	12.0	15.2	6.2	15.0	15.0	6.1
Nevada	10.7	10.2	9.7	9.9	12.3	4.5	10.7	10.7	4.7

State	Infants	1-Year-Old Children	2-Year-Old Children	3-Year-Old Children	4-Year-Old Children	All Children	Pregnant Women	Postpartum Women	Total
New Hampshire	24.8	18.5	18.6	19.5	16.4	9.4	24.8	24.8	10.4
New Jersey	8.1	7.5	7.5	7.7	8.5	3.7	8.1	8.1	3.1
New Mexico	11.8	13.9	10.3	8.7	14.6	4.6	11.8	11.8	4.4
New York	5.5	4.6	4.6	4.9	11.8	3.6	5.5	5.4	2.9
North Carolina	6.0	6.0	5.4	5.4	10.2	3.3	6.0	6.0	2.7
North Dakota	20.8	23.2	18.3	22.2	66.9	17.8	20.8	20.8	14.7
Ohio	6.9	5.8	5.2	5.8	10.1	3.4	6.9	6.8	3.0
Oklahoma	8.6	8.3	7.5	7.8	20.3	6.1	8.6	8.6	4.7
Oregon	10.7	10.3	11.1	7.3	15.4	5.2	10.7	10.7	4.5
Pennsylvania	7.2	7.0	5.8	6.8	8.0	2.9	7.2	7.2	2.6
Rhode Island	20.8	22.6	23.1	18.8	21.6	9.3	20.8	20.8	8.4
South Carolina	7.8	6.4	6.5	7.8	8.6	3.6	7.8	7.8	3.5
South Dakota	18.2	18.7	17.0	17.4	39.3	12.1	18.2	18.2	10.1
Tennessee	7.4	6.2	6.3	6.6	8.8	3.5	7.4	7.4	2.9
Texas	4.1	3.9	4.0	3.8	5.6	2.1	4.1	4.1	1.9
Utah	10.1	10.5	10.4	11.0	12.2	4.8	10.1	10.1	4.9
Vermont	24.6	22.4	23.8	24.7	21.7	11.3	24.6	24.6	9.0
Virginia	7.8	6.8	7.1	7.0	11.6	4.3	7.8	7.8	3.7
Washington	7.5	7.9	6.8	6.3	14.4	4.6	7.5	7.4	3.8
West Virginia	13.0	12.0	10.4	11.4	14.3	4.9	12.9	13.0	4.4
Wisconsin	12.7	10.6	8.4	9.4	12.1	4.7	12.7	12.6	4.2
Wyoming	19.3	22.8	17.9	25.6	25.7	11.0	19.3	19.3	10.4
Total	3.2	2.8	2.8	2.8	2.6	1.4	3.2	3.2	1.4

Note: 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.

CY = calendar year

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a; unpublished internal WIC administrative data

Table 6.5. Coefficients of Variation of WIC Coverage Rates by State and by Race and Hispanic Ethnicity: CY 2019

State	Hispanic/Latino	White-Only, Not Hispanic	Other Than White-Only, Not Hispanic ^a	Total
Alabama	12.3	5.4	6.0	3.7
Alaska	27.2	14.1	18.4	11.2
Arizona	3.8	5.9	13.7	3.6
Arkansas	7.5	5.3	6.9	3.7
California	2.4	3.9	11.4	2.4
Colorado	5.3	6.3	12.1	3.7
Connecticut	6.4	9.0	14.4	5.1
Delaware	13.1	16.5	10.7	7.9
District of Columbia	21.0	76.6	8.9	7.7
Florida	3.2	3.6	4.6	2.1
Georgia	5.0	4.4	4.6	2.4
Hawaii	11.8	14.8	19.4	12.5
Idaho	10.7	7.6	26.5	5.9
Illinois	4.2	4.4	5.6	2.7
Indiana	7.2	4.2	8.4	3.3
Iowa	10.0	6.4	10.0	4.9
Kansas	7.7	5.6	17.0	4.8
Kentucky	9.8	4.1	11.7	3.5
Louisiana	9.0	5.2	4.8	3.0
Maine	56.3	8.7	20.8	8.0
Maryland	6.4	7.0	6.2	3.8
Massachusetts	4.6	5.9	9.0	3.4
Michigan	6.9	4.5	6.3	3.2
Minnesota	9.5	5.7	13.0	5.9
Mississippi	18.1	5.9	5.1	3.5
Missouri	11.3	3.9	7.9	3.2
Montana	38.5	8.9	20.7	8.2
Nebraska	13.9	8.1	15.6	6.2
Nevada	5.9	10.3	10.1	4.7
New Hampshire	30.4	9.8	31.6	10.4
New Jersey	4.9	6.2	7.6	3.2
New Mexico	5.1	11.5	14.8	4.4
New York	3.1	3.8	7.5	2.9
North Carolina	4.6	4.4	5.9	2.8
North Dakota	32.8	15.3	32.3	14.7
Ohio	7.8	3.8	6.7	3.0
Oklahoma	5.2	4.9	12.3	4.8

State	Hispanic/Latino	White-Only, Not Hispanic	Other Than White-Only, Not Hispanic ^a	Total
Oregon	7.1	5.7	19.2	4.5
Pennsylvania	4.5	4.6	5.9	2.6
Rhode Island	14.7	12.8	13.3	8.4
South Carolina	7.5	5.2	5.7	3.5
South Dakota	49.9	11.3	18.5	10.1
Tennessee	7.6	4.2	5.7	3.0
Texas	2.5	3.8	5.9	2.0
Utah	9.2	6.7	15.1	4.9
Vermont	167.3	9.8	28.2	9.0
Virginia	6.7	5.6	6.7	3.8
Washington	4.7	5.1	14.6	3.8
West Virginia	30.4	5.4	18.4	4.5
Wisconsin	10.7	5.4	10.0	4.3
Wyoming	31.3	11.1	26.2	10.4
Total	2.1	2.6	3.2	1.4

Note: 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.

CY = calendar year

^a This category includes non-Hispanic individuals who self-identify as two or more races or self-identify as a race other than White. These categories were combined because of sample size concerns.

Sources: IPUMS-USA, n.d.; Kline et al., 2020; U.S. Census Bureau, n.d.a; unpublished internal WIC administrative data

References

- Cronquist, K. (2021). *Characteristics of Supplemental Nutrition Assistance Program households: Fiscal Year 2019* (FNS Report No. SNAP-20-CHAR). <https://fns-prod.azureedge.net/sites/default/files/resource-files/Characteristics2019.pdf>
- Department of Health and Human Services (HHS). (2018). *2018 poverty guidelines*. <https://aspe.hhs.gov/2018-poverty-guidelines>
- Department of Health and Human Services (HHS). (2019). *2019 poverty guidelines*. <https://aspe.hhs.gov/2019-poverty-guidelines>
- Edwards, R., & Smith, S. M. (2020). *Job market remains tight in 2019, as the unemployment rate falls to its lowest level since 1969*. <https://www.bls.gov/opub/mlr/2020/article/job-market-remains-tight-in-2019-as-the-unemployment-rate-falls-to-its-lowest-level-since-1969.htm>
- Farson Gray, K., Trippe, C., Tadler, C., Perry, C., Johnson, P., & Betson, D. (2019). *National- and State-level estimates of WIC eligibility and WIC program reach in 2017*. U.S. Department of Agriculture, Food and Nutrition Service. <https://www.fns.usda.gov/wic/national-and-state-level-estimates-wic-eligibility-and-wic-program-reach-2017>
- Farson Gray, K., Meyers Mathieu, K., Johnson, P., & Giannarelli, L. (2021). *National- and State-level estimates of WIC eligibility and WIC program reach in 2018 with updated estimates for 2016 and 2017*. U.S. Department of Agriculture, Food and Nutrition Service. <https://www.fns.usda.gov/wic/national-and-state-level-estimates-wic-eligibility-and-wic-program-reach-2018-updated>
- Heberlein, M., Brooks, T., Artiga, S., & Stephens, J. (2013). *Getting into gear for 2014: Shifting new Medicaid eligibility and enrollment policies into drive*. <https://www.kff.org/medicaid/report/getting-into-gear-for-2014-shifting-new-medicaid-eligibility-and-enrollment-policies-into-drive/>
- IPUMS-USA (Integrated Public Use Microdata Series-USA). (n.d.). *U.S. Census data for social, economic, and health research* [2019 American Community Survey and Puerto Rico Economic Indicators datasets]. <https://usa.ipums.org/usa/>
- Kaiser Family Foundation (2019). *Analysis of recent declines in Medicaid and CHIP enrollment*. <https://www.kff.org/medicaid/fact-sheet/analysis-of-recent-declines-in-medicaid-and-chip-enrollment/>
- Kline, N., Thorn, B., Bellows, D., Wroblewska, K., & Wilcox-Cook, E. (2020). *WIC participant and program characteristics 2018*. U.S. Department of Agriculture, Food and Nutrition Service. <https://www.fns.usda.gov/wic/wic-participant-and-program-characteristics-2018>
- National Center for Health Statistics (n.d.). *National Vital Statistics Reports*. <https://www.cdc.gov/nchs/products/nvsr.htm>

- Rothbaum, J., & Bee, A. (2021). *Coronavirus infects surveys, too: Survey nonresponse bias and the Coronavirus pandemic* (SESH Worker Paper 2020-10). U.S. Census Bureau.
<https://www.census.gov/library/working-papers/2020/demo/SEHSD-WP2020-10.html>
- Special Supplemental Nutrition Program for Women, Infants, and Children, 7 C.F.R. § 246 (2014).
- 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*. <https://www.fns.usda.gov/wic/national-and-state-level-estimates-wic-eligibility-and-wic-program-reach-2016>
- U.S. Census Bureau. (2019). *CPS-ASEC redesign and processing changes*. <https://www.census.gov/newsroom/blogs/research-matters/2019/09/cps-asec.html>
- U.S. Census Bureau. (2020a). *Annual estimates of the resident population by single year of age and sex for Puerto Rico Commonwealth* [July 2019 dataset]. <https://www2.census.gov/programs-surveys/popest/tables/2010-2019/state/detail/>
- U.S. Census Bureau. (2020b). *National population estimates* [2017, 2018, 2019, 2020 datasets]. <https://www2.census.gov/programs-surveys/popest/tables/2010-2019/national/asrh/>
- U.S. Census Bureau. (2020c). *State population estimates* [2019 dataset]. <https://www2.census.gov/programs-surveys/popest/tables/2010-2019/state/asrh/>
- U.S. Census Bureau. (n.d.a). *Current Population Survey Annual Social and Economic Supplement* [March 2020 dataset and technical documentation]. <https://www.census.gov/data/datasets/time-series/demo/cps/cps-asec.html>
- U.S. Census Bureau. (n.d.b). *International programs, International Data Base* [2019 international population estimates dataset]. <https://www.census.gov/programs-surveys/international-programs/data.html>
- U.S. Census Bureau. (n.d.c). *Survey of Income and Program Participation datasets* [2004, 2008, 2014 datasets]. <https://www.census.gov/programs-surveys/sipp/data/datasets.html>
- Ver Ploeg, M., & Betson, D. M. (Eds.). (2003). *Estimating eligibility and participation for the WIC program: Final report*. The National Academies Press.