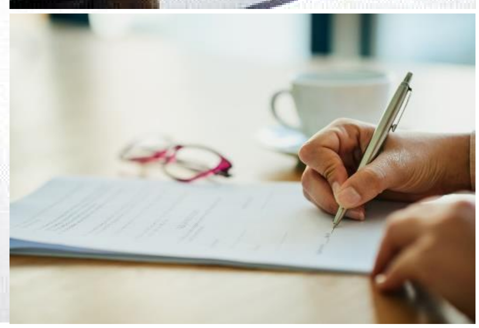
U.S. DEPARTMENT OF AGRICULTURE

Third National Survey of WIC Participants (NSWP-III)

BRIEF REPORT 8: CERTIFICATION ERROR RATES AND ESTIMATES OF IMPROPER PAYMENTS



This research was supported by the U.S. Department of Agriculture, Food and Nutrition Service. The findings and conclusions in this publication are those of the author(s) and should not be construed to represent any official USDA or U.S. Government determination or policy.

TABLE OF CONTENTS

LIST OF TABLES

ABSTRACT

Background: The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a key part of the nation's public health infrastructure, providing nutritious supplemental foods, nutrition education, breastfeeding support, and referrals to health and social service programs for low-income pregnant and postpartum women, infants, and children up to age 5 who are at nutritional risk. The National Survey of WIC Participants (NSWP) series is designed to provide national estimates of WIC participants, State agencies' (SAs) and local agencies' (LAs) characteristics, and improper payments resulting from participant certification errors in WIC. NSWP is conducted approximately every 10 years. This brief is part of a series of 10 briefs that describes findings from the NSWP-III study, which collected data in 2019.

Objective: This brief provides information on case error rates, certification error rates, and dollar error rates.[1]

Methods: Data were collected from the following sources during the summer and fall of 2019: an in-person, nationally representative survey that was administered to recently certified (within 8 weeks of certification) WIC participants (weighted *n* = 893,469; unweighted *n* = 1,697) and an in-person survey completed by nationally representative WIC applicants who formally applied and were denied certification (weighted *n* = 28,000; unweighted *n* = 86).

Findings:

- The overall case error rate was estimated at 2.5 percent.
- An examination of overall estimated case error rates by the type of error observed revealed that income eligibility (2.11 percent) accounted for the largest portion of error rates. Residence error (0.26 percent), categorical error (0.16 percent), and identity error (0.02 percent) also contributed to the overall case error rates.
- The pre-rebate overall dollar error amount estimate, based on income eligibility error, summed to a monthly amount of $899,918 and an estimated annualized dollar error amount of $11,122,791. Post-rebate, this amount dropped to a monthly amount of $597,045 and an annualized amount of $7,329,744.
- The estimated pre-rebate annualized dollar error rates due to income eligibility error were 1.70 percent, and the estimated post-rebate annualized dollar error rates due to income eligibility error were 1.12 percent.
- Error rate estimates due to income eligibility error have been higher in past years when compared to the 2.11 percent error rate estimated in 2019.
- The pre-rebate overpayments estimates were $15,647,154, and the post-rebate overpayments dollar amount was $8,097,654. The amount in underpayments for pre-rebate dollar amount estimates was $5,835,237; and the post-rebate underpayment estimates were $3,103,132.

[1] Case error refers to the number of WIC participants who were certified to receive WIC benefits but who were not eligible for these benefits. Dollar error refers to the dollar amount of WIC benefits issued to and redeemed by participants in error.

Conclusion: The findings illustrate that nearly all WIC participants are certified correctly, and that the percentage of participants certified in error may be steadily decreasing over time. Future research could continue to estimate the national error rate and could conduct studies with WIC SAs and LAs to identify new ways to reduce improper WIC payments.

INTRODUCTION

Background

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is a key part of the nation's public health infrastructure, providing nutritious supplemental foods, nutrition education, breastfeeding support, and referrals to health and social service programs for low-income pregnant and postpartum women, infants, and children up to age 5 who are at nutritional risk. The U.S. Department of Agriculture (USDA) Food and Nutrition Service (FNS) administers WIC by providing Federal grants to 89 State agencies (SAs), including the 50 States and the District of Columbia; 33 Indian Tribal Organizations (ITOs); and the 5 U.S. Territories of American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands. In 2019, the average monthly WIC participation was 6.4 million participants nationwide.[2]

The National Survey of WIC Participants (NSWP) series is designed to provide information on the characteristics of nationally representative samples of WIC participants, SAs, and LAs, and to produce estimates of improper payments resulting from participant certification errors in WIC. The first NSWP was conducted in 1998, and NSWP-II was conducted in 2009.[3,4]

Two key objectives of NSWP-III were to

- calculate a national estimate of annual improper payments[5] (case and dollar error rates and dollar error amount)[6] in WIC due to income eligibility error (one component of certification error) to assist in fulfilling USDA FNS's obligations under the Improper Payments Elimination and Recovery Improvement Act (IPERIA) of 2012 (P.L. 112-248); and
- provide nationally representative error rates and associated dollar error for all types of case error and for denied applicants.

Under IPERIA, USDA is required to identify and reduce improper payments, including overpayments and underpayments in programs, including WIC. The Office of Management and Budget (OMB) defines an improper payment as any payment that should not have been made, or that was made in an incorrect amount, under statutory, contractual, administrative, or other legally applicable requirements. It includes any payment that was made to an ineligible recipient or for an ineligible service, duplicate payments, payments for services not received, and payments that are for an incorrect amount.[7]

---

[2] U.S. Department of Agriculture, Food and Nutrition Service. (2019). *WIC Program: National level annual summary*. https://fns-prod.azureedge.net/sites/default/files/resource-files/wisummary-6.pdf

[3] U.S. Department of Agriculture, Food and Nutrition Service Office of Research and Analysis. (2001). *National survey of WIC participants: Final report*. Alexandria, VA.

[4] U.S. Department of Agriculture, Food and Nutrition Service Office of Research and Analysis. (2012). *National survey of WIC participants II: Technical report*. Alexandria, VA.

[5] This study estimates certification error, which is one component of improper WIC payments. The study did not estimate vendor error, the other component of improper WIC payments.

[6] Case error refers to the number of WIC participants who were certified to receive WIC benefits but who were not eligible for these benefits. Dollar error refers to the dollar amount of WIC benefits issued to and redeemed by participants in error.

[7] Office of Management and Budget. (2018, June). *Appendix C to OMB Circular A-123, Requirements for Payment Integrity Improvement.* https://www.whitehouse.gov/wp-content/uploads/2018/06/M-18-20.pdf

Improper payments include overpayments—the issuance of benefits to individuals who were not actually eligible to receive those benefits, and underpayments—the denial of benefits to individuals who were erroneously determined to be ineligible. A payment must also be considered improper when an agency's review is unable to determine that the payment was proper, as a result of insufficient or absent documentation.

To meet these objectives, the Study Team collected data by administering an in-person survey to certified participants using the Certification Survey (CS) and to denied applicants using the Denied Applicant Survey (DAS). For national estimates, the number of completed responses for the CS and DAS met IPERIA ±2.0 percent and non-IPERIA ±3.5 percent precision requirements for the annual case and dollar error rates and the ±4.0 percent precision requirements for all other estimates.

Each sampled certified participant or denied applicant contacted for an in-person interview was asked to answer questions related to document identity, residency, certification category, income, and proof of participation in a program that confers adjunctive or automatic income eligibility. (If applicable, a parent or legal guardian was asked to answer questions on behalf of a sampled infant or child WIC participant.) The denied applicant sample included individuals who formally applied to WIC and were deemed ineligible and did not include individuals who only completed an online or telephone prescreening.

The NSWP-III findings in this brief are based on data collected from the CS and DAS, which were conducted during the summer and fall of 2019. When appropriate, findings are compared to findings from WIC Income Verification Study conducted in 1988,[8] the first NSWP study conducted in 1998, and NSWP-II conducted in 2009.[9,10]

Research Objective and Questions

One component of NSWP-III is to provide nationally representative case error rates and associated dollar error amounts and rates.[11] Specifically, the brief report addresses the following research questions:

Case Error Rates

- What is the annual case error rate due to income ineligibility for WIC overall and by certification category?

Dollar Error Amounts and Rates

- What are the monthly and annualized dollar error amounts and rates, both pre- and post-rebate for infant formula, and for the WIC population overall and by certification category?

[8] U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis and Evaluation. (1992). *WIC income verification study final report*. Alexandria, VA.

[9] U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis. (2001). *National survey of WIC participants: Final report.* Alexandria, VA.

[10] U.S. Department of Agriculture, Food and Nutrition Service, Office of Research and Analysis. (2012). *National survey of WIC participants II.* Alexandria, VA.

[11] Please visit the FNS website at https://www.fns.usda.gov/research-analysis to access the other NSWP-III brief reports and the prior NSWP studies.

Changes in Income Eligibility Error Rates from 1988 to 2019

- How do case and dollar error estimates compare to prior studies (FNS WIC Income Verification Study, NSWP-I, NSWP-II)?

Income Documentation

- What proportion of WIC participants (overall and by certification category) are certified without providing income documentation?

Report Organization

The following sections of this brief report detail the findings related to the research questions referenced above. The report concludes with a summary of key findings and discussion of the study limitations and recommendations for future research. The report also references appendices that include technical details of the survey methodology, a copy of the surveys, and analytic tables.

STUDY METHODOLOGY

Source of Data

The findings in this brief are based on data collected from two NSWP-III surveys during the summer and fall of 2019. Data were collected from certified WIC participants for the CS and denied applicants for the DAS using computer-assisted personal interviewing. Table 1 lists the surveys fielded and associated operational details.

Table 1. NSWP-III Survey Summary

Survey	Type of Data Collection	Mode of Data Collection	Estimated Length of Survey[a]	Data Collection Period	Number of Completes	Cooperation Rate[b]	Response Rate[c]
CS	National sample	In-person survey	42 minutes	June 23, 2019– Nov. 10, 2019	1,697	54.5%	34.3%
DAS	National sample	In-person survey	39 minutes	June 23, 2019– Nov. 10, 2019	86	36.6%	19.9%

Notes: [a] Estimated length of survey is based on estimates developed during pretesting of the survey instrument.
[b] Cooperation rate is the proportion of all cases interviewed of all eligible participants or denied applicants ever contacted.
[c] Response rates are the number of completed interviews with participants or denied applicants divided by the number of eligible participants or denied applicants in the sample.

Survey Content

The CS and DAS instruments were developed in collaboration with FNS and were reviewed by an independent panel that included experts in WIC policy and operations. In addition, each survey was pilot tested with nine current WIC participants and nine denied applicants to assess the ease of comprehension (e.g., confusing wording or layout, failure to grasp concepts) and length of time to complete. Each survey covered topics including identity and residency documentation, household size and composition, and employment and income sources. Copies of each of the survey are available in Appendix D.

Analysis

WEIGHTING

The CS data were weighted to represent the population of recently certified WIC participants, and the DAS data were weighted to represent the population of denied WIC applicants. As such, the weighted descriptive CS results are representative of all 893,469 recently certified WIC participants nationally and the weighted descriptive DAS results are nationally representative of all 28,000 denied WIC applicants (see Appendix D for more details). The Study Team used the population of WIC participants, grouped by certification category and FNS Region, to estimate the nationally representative weights. The population count was derived from the fiscal year 2019 Monthly Data State Level Participation by Category and Program Cost, Estimated from October 2018–September 2019, as of December 4, 2019.[12] For the DAS, the Study Team adjusted the weights to match the population counts of denied applicants. The Study Team used the estimated monthly average population of denied applicants, which was 28,000. Because no administrative data exist for the population of denied WIC applicants, this number was estimated based on information collected in 2009 from the NSWP-II study, which cited several difficulties obtaining records on denied applicants.

SURVEY RESULTS

Survey results are presented as weighted percentages and means. To understand the differences among respondents, data were analyzed according to relevant subgroups, as shown below.

- Number of participants served by the entire SA per month (up to 10,000; 10,000 to 75,999; 75,000 or more)
- Number of participants served by the entire LA per month (up to 750; 750 to 1,999; 2,000 to 4,499; 4,500 or more)
- Relationship of the LA to the parent SA (State affiliated, Local government, Non-government)
- LA's urbanicity (completely rural, mostly rural, completely urban)
- Location based on the FNS Region (Mid-Atlantic, Midwest, Mountain Plains, Northeast, Southeast, Southwest, Western)
- WIC certification category (pregnant, breastfeeding postpartum, non-breastfeeding postpartum, infant, child)
- Race/ethnicity (Hispanic, Non-Hispanic white, Non-Hispanic African American, Non-Hispanic other)
- Size of the family/economic unit
- Whether the household has children[13]
- Home language (English, Spanish, other)
- Adjunctive income status

[12] U.S. Department of Agriculture, Food and Nutrition Service. (2020, July). *WIC data tables*. https://www.fns.usda.gov/pd/wic-program

[13] Households with child or infant participants and those with at least one member under 18 years of age listed in the household roster were categorized as households with children. Households with adult participants and no members under 18 years of age listed in the roster were categorized as households without children.

Tables with comparisons to the WIC Income Verification Study (conducted in 1988), NSWP-I (conducted in 1998), and NSWP-II (conducted in 2009) were prepared when feasible (i.e., when similar questions were asked of both studies) and can be found in Appendix I. Note that the NSWP-III sample was drawn and weighted to represent recently certified WIC participants (e.g., within 8 weeks of certification), which differs from NSWP-I and NSWP-II, which represented all current WIC participants. Thus, interpretation of the tables with comparisons to previous studies should focus on changes in error rates, not changes in the number of cases in error (or dollar error amounts). Also, please note that NSWP-II and NSWP-III also varied in the methods to verify adjunctive/automatic income eligibility status. NSWP-II followed up with SAs after data collection on special cases that did not provide program participation documentation; however, NSWP-III took a proactive approach and requested a flag for adjunctive/automatic income eligibility status and the specific qualifying program as part of the SA administrative data request needed for sampling purposes (see Appendix D for additional details).

NONRESPONSE BIAS ANALYSIS

OMB recommends nonresponse bias analysis any time the survey response rate is less than 80 percent. Such analysis addresses any bias introduced due to differences in respondent and nonrespondent characteristics. Since the CS and DAS response rates were low—mostly due to lack of cooperation from participants and denied applicants during the Study Team's mail (up to 4), telephone (up to 7), and in-person (up to 2) contact attempts—the Study Team conducted a nonresponse bias analysis. The CS achieved a 34.3 response rate, and the DAS achieved a 19.9 percent response rate, so the nonresponse bias analyses were employed to determine whether certain respondent characteristics significantly associated with nonresponse may have potentially introduced bias into the surveys. Conducting a nonresponse bias analysis requires that the characteristics examined be available for both respondents and nonrespondents.[14] Therefore, the Study Team reviewed the sampling frame, which came from administrative data provided by States, to identify variables that were available for all respondents sampled for the survey. FNS Region, certification category, and race/ethnicity were identified as statistically significant factors associated with a participant's likelihood of completing the CS. For the DAS, age of the participant was identified as the statistically significant factor associated with a participant's likelihood of completing the survey. These variables were then used to calculate adjustment factors to represent those who did not respond to the survey.

As per OMB guidelines, an item nonresponse analysis should be conducted if item response rate is less than 70 percent.[14] Item nonresponse bias analysis was not applicable to the CS and DAS because a response was required on all screens.

[14] Office of Management and Budget. (2006, September). *Office of Management and Budget: Standard guidelines for statistical surveys*. https://obamawhitehouse.archives.gov/sites/default/files/omb/inforeg/statpolicy/standards_stat_surveys.pdf.

MAIN FINDINGS

Income Eligibility Error

The key objective for the NSWP-III was to calculate a national estimate of annual improper payments (case and dollar error rates and dollar error amount) in WIC due to income eligibility error to assist in fulfilling USDA FNS's obligations under IPERIA. Income eligibility error cases were defined as cases that were not adjunctively or automatically income eligible and reported income greater than the SA-accepted income threshold (e.g., 185 percent of the Federal Poverty Guidelines). Income eligibility errors were determined by comparing the economic unit's income to the WIC income eligibility guidelines applicable in each State.

CASE ERROR RATES

Case error is one component of improper payment estimates. Case error refers to the number of WIC participants certified to receive WIC benefits but who were not eligible for WIC benefits. Data from the CS, combined with State administrative data on WIC participants, were used to estimate case error overall and for each of the five WIC certification categories (pregnant women, breastfeeding postpartum women, non-breastfeeding postpartum women, infants, and children). This section focuses on case error due to income eligibility error, while later sections discuss overall case error.

The overall annual case error rate for certified participants due to income ineligibility was estimated at 2.11 percent (Table 2). By certification category, the estimated error rate was highest among pregnant women (3.13 percent) and children (2.82 percent).

Table 2. Annualized Estimates of Case Error Rate Due to Income Ineligibility, by Certification Category

WIC Certification Category	Certified Participants		Case Error Count		Case Error Rate Weighted %
	Weighted *n*	Unweighted *n*	Weighted *n*	Unweighted *n*	
Overall	893,469	1,697	18,836	31	2.11
Pregnant	146,169	346	4,578	9	3.13
Breastfeeding Postpartum	99,815	337	1,243	5	1.25
Non-breastfeeding Postpartum	80,908	333	563	4	0.70
Infant	214,581	336	2,518	4	1.17
Child	351,996	345	9,935	9	2.82

Source: Appendix I, Objective I Table 1a; NSWP-III Certification Survey (Income Eligibility Section, pages 15–40).

Notes: The relative standard errors of the case error rates shown in this table were over 30% and thus, these finding should be interpreted with caution.

DOLLAR ERROR AMOUNTS (OVERPAYMENTS) AND RATES

Dollar error refers to the dollar amount of WIC benefits issued to and redeemed by participants in error. Dollar error rate of income eligibility error was calculated as the *sum of (redemption amount × income eligibility case error × final weight) divided by the sum of (redemption amount × final weights for all cases)*. The dollar amounts reported in this section represent only overpayments due to income eligibility error to participants, as overpayments for other types of case error and underpayments are discussed in a later section.

Dollar error amounts are also presented in relation to rebates, a mechanism that SAs use to contain the cost of infant formula and foods. States set up a competitive bidding process that awards contracts to infant formula or food manufacturers. This competitive bidding process allows manufacturers to compete for the contracts by offering rebates to the SAs on the infant formula and foods that WIC participants purchase.[15]

Dollar error amounts and rates were estimated pre-rebate and post-rebate (Table 3). Estimating certification and dollar error rates with adjustments for infant formula rebate and other (i.e., jarred infant food and infant cereal) rebates was necessary to generate more realistic improper payment estimates because SAs receive substantial rebates on infant formula prices from manufacturers. These rebate values should be subtracted from redeemed infant food cost value for each infant identified as having eligibility error to generate post-rebate dollar error estimates. The method used to adjust for infant formula and other infant food rebates closely mirrors the procedure used in NSWP-II (see Appendix D for additional details). The Study Team determined the certification and dollar error rates for rebates by using data from three sources: SA Survey, FNS WIC administrative data[16] (WIC Monthly Spreadsheet), and the 2018 Food Cost Report.[17]

The pre-rebate overall dollar error amount estimate based on income eligibility error summed to a monthly amount of $899,918 and an annual dollar error amount estimate of $11,122,791; the overall pre-rebate dollar error rate was estimated at 1.7 percent (Appendix I, Objective I Table 3a.1). Post-rebate, the overall dollar error amount estimate based on income eligibility dropped to a monthly amount of $597,045, and an annual amount estimate of $7,329,744; the overall post-rebate dollar error rate was approximately 1.1 percent (Appendix I, Objective I Table 3a.3).

Table 3. Estimates of Pre- and Post-Rebate Dollar Error Amounts and Dollar Error Rates for Income Eligibility Error

Dollar Error Amounts and Rates	Pre-Rebate		Post-Rebate	
	Error Rate (%)	Dollar Amount ($)	Error Rate (%)	Dollar Amount ($)
Monthly	1.71	899,918	1.13	597,045
Annualized	1.70	11,122,791	1.12	7,329,744

Notes: For the error rate, weighted *n* = 893,469 and unweighted *n* = 1,697. For dollar amount, weighted *n* = 18,836 and unweighted *n* = 31. Dollar error rates were calculated using aggregated values without variance estimation. Dollar error rate is

[15] Government Publishing Office. 2020. *Electronic Code of Federal Regulations 7 CFR Part 246.16a.* https://www.ecfr.gov/cgi-bin/text-idx?SID=a6828ac000f6e75ae4679d5beecb637c&mc=true&node=pt7.4.246&rgn=div5#se7.4.246_13

[16] Downloaded from https://www.fns.usda.gov/pd/wic-program as of September 2020.

[17] Kline, N., Meyers Mathieu, K., & Marr, J. (2020). *WIC participant and program characteristics 2018 food packages and costs report.* Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service. Project Officer: Grant Lovellette (Pre-release version).

defined as the sum of (redemption amount × income eligibility error × final weight) divided by the sum of (redemption amount × final weights for all cases). Rebates include rebates for infant formula combined with rebates for foods other than infant formula.
Sources: Appendix I, Objective I Tables 3a.1 and 3a.3. NSWP-III Certification Survey (Income Eligibility Section, pages 15-40); State agency redemption data.

Across certification categories (Table 4), the pre-rebate annualized dollar error amount estimates were lowest among non-breastfeeding postpartum women ($222,289, with a dollar error rate estimate of 0.7 percent) and highest among infants ($4,328,530, with a dollar error rate estimate of 1.17 percent) (Appendix I, Objective I Table 3a.2). For the post-rebate annualized dollar amounts, only the estimate for overall and for infants changed, since the rebate adjustments impacted items found only in the infant food package. The post-rebate annualized amount for infants was estimated at $535,483, with the other categorical estimates remaining the same as their pre-rebate estimates (Appendix I, Objective Table 3a.4).

Table 4. Estimates of Pre-Rebate Dollar Amounts and Error Rates for Income Eligibility Error, by Certification Category

WIC Certification Category	Dollar Error Amount of Income Eligibility Error		Dollar Error Rate of Income Eligibility Error	
	Monthly ($)	Annualized ($)	Monthly (%)	Annualized (%)
Overall	899,918	11,122,791	1.71	1.70
Pregnant	170,883	2,064,265	3.13	3.13
Breastfeeding Postpartum	46,954	586,454	1.25	1.25
Non-breastfeeding Postpartum	17,285	222,289	0.70	0.70
Infant	349,075	4,328,530	1.17	1.17
Child	315,721	3,921,253	2.82	2.82

Notes: For dollar error amount of income eligibility error, overall weighted *n* = 18,836, unweighted *n* = 31; pregnant weighted *n* = 4,578, unweighted *n* = 9; breastfeeding postpartum weighted *n* = 1,243, unweighted *n* = 5; non-breastfeeding postpartum weighted *n* = 563, unweighted *n* = 4; infant weighted *n* = 2,518, unweighted *n* = 4; child weighted *n* = 9,935, unweighted *n* = 9. For dollar error rate of income eligibility error, overall weighted *n* = 893,469, unweighted *n* = 1,697; pregnant weighted *n* = 146,169, unweighted *n* = 346; breastfeeding postpartum weighted *n* = 99,815, unweighted *n* = 337; non-breastfeeding postpartum weighted *n* = 80,908, unweighted *n* = 333; infant weighted *n* = 214,581, unweighted *n* = 336; child weighted *n* = 351,996, unweighted *n* = 580. Dollar error rates were calculated using aggregated values without variance estimation. Dollar error rate is defined as the sum of (redemption amount × income eligibility error × final weight) divided by the sum of (redemption amount × final weights for all cases). A multiplier is used to calculate the annualized dollar error rate. The monthly and annualized dollar error rates for certification categories are identical because the multiplier is based on certification category, whereas other subgroups will include a variety of multipliers from the different certification categories of the participants in that subgroup. Rebates include rebates for infant formula combined with rebates for foods other than infant formula. The relative standard errors of the case error rates for all certification categories were over 30% and thus, these findings should be interpreted with caution.
Source: Appendix I, Objective I Table 3a.2; NSWP-III Certification Survey (Income Eligibility Section, pages 15-40); State agency redemption data.

CHANGES IN INCOME ELIGIBILITY ERROR RATES FROM 1988 TO 2019

The income eligibility error rate has decreased over time (Table 5). In 2019, the error rate was estimated at 2.11 percent, significantly ($p < 0.05$) lower than in 1988 (5.70 percent) and 1998 (4.50 percent). There was no statistically significant difference between the error rate estimate from 2019 (2.11 percent) and 2009 (3.05 percent) ($p = 0.39$).

Table 5. Estimates of Income Eligibility Error Rates in 1988, 1998, 2009, and 2019

Year (Study)	Income Eligibility Error			
	Weighted *n*	Unweighted *n*	Error Rate (Weighted %)	95% CI (%)
1988 (WIC Income Verification Study)‡	214,000	—	5.70	(3.80, 7.60)
1998 (NSWP-I)£	349,000	—	4.50	(2.80, 6.20)
2009 (NSWP-II)	277,952	39	3.05	(1.42, 4.68)
2019 (NSWP-III)	18,836	31	2.11	(0.73, 3.49)

CI = Confidence interval.
— Data not available.
‡ The difference between the NSWP-III and WIC Income Verification Study income eligibility error rates is statistically significant ($p < 0.05$).
£ The difference between the NSWP-III and NSWP-I income eligibility error rates is statistically significant ($p < 0.05$).
Notes: The NSWP-III sample was drawn and weighted to represent recently certified WIC participants, while the samples for prior studies represented all current WIC participants. Therefore, any comparisons across studies should be focused on the change in error rates, not the change in the number of cases in error. Also, the relative standard error for the 2019 income eligibility error rate shown in this table was over 30% and thus, this finding should be interpreted with caution.
Source: Appendix I, Objective I Table 6a.1; NSWP-III Certification Survey (Income Eligibility Section, pages 15-40).

Similar trends were observed for the annualized dollar error rates (Table 6). Compared to 5.60 percent in 1988 and 4.62 percent in 1998, NSWP-II measured 3.72 percent pre-rebate and 2.98 percent post-rebate annualized dollar error rates in 2009, and NSWP-III demonstrated 1.70 percent pre-rebate and 1.12 percent post-rebate dollar error rate estimates in 2019.

Table 6. Estimates of Annualized Dollar Error and Dollar Error Rates from Income Eligibility Error in 1988, 1998, 2009, and 2019

Year (Study)	Dollar Error ($ Million)	95% CI of Dollar Error ($ Million)	Dollar Error Rate (%)
1988 (WIC Income Verification Study)	84	(56, 112)	5.60
1998 (NSWP-I)	120	(69, 172)	4.62
2009 (NSWP-II, pre-rebate)	233	(118, 349)	3.72
2009 (NSWP-II, post-rebate)	130	(70, 190)	2.98
2019 (NSWP-III, pre-rebate)	11	(5, 20)	1.70
2019 (NSWP-III, post-rebate)	7	(2, 14)	1.12

CI = Confidence interval.
Notes: The NSWP-II and NSWP-III studies calculated aggregate dollar error rates without variance estimations, so statistical comparisons cannot be made across studies. The NSWP-III respondents were sampled and weighted to represent recently certified WIC participants, whereas the samples for prior studies represented all current WIC participants. Therefore, any comparisons across studies should be focused on the change in dollar error rates, not the change in dollar error amounts.
Source: Appendix I, Objective I Table 6a.2.

Overall Case Error

Case error occurs when a participant certified for WIC benefits does not meet all WIC eligibility requirements. Four different types of case errors, including category, identity, residence, and income errors are examined in this report.

- Category errors can occur if a WIC agency has mistaken the birthdates or age computations of infants or children, or if the WIC agency possesses mistaken information about the start or end of pregnancy or breastfeeding status.
- Identity errors may occur when participants do not provide an SA-accepted identity proof to the LA.
- Residence errors may occur when participants do not provide an SA-accepted residence proof to the LA.
- Income eligibility error cases were defined as cases that were not adjunctively or automatically income eligible and reported income greater than the SA-accepted income threshold (e.g., 185 percent of the Federal Poverty Guidelines).

CASE ERROR RATES

The overall case error rate, including income eligibility error, was estimated at 2.53 percent; the remaining 97.47 percent of WIC participants were certified correctly. Case error was most prevalent among child participants (3.19 percent), followed by pregnant participants (3.13 percent), infant participants (2.25 percent), breastfeeding postpartum participants (1.25 percent), and non-breastfeeding postpartum participants (0.87 percent) (Table 7).

Table 7. Case Error Estimates, Overall and by Certification Category

Certification Status	Overall			Pregnant	Breastfeeding Postpartum	Non-breastfeeding Postpartum	Infant	Child
	Case Error Count	Case Error Count	Case Error Rate					
	(Weighted *n*)	(Unweighted *n*)	(Weighted %)	(Weighted %)				
Certified correctly	870,909	1,661		96.87	98.75	99.13	97.75	96.81
Certified in error	22,560	36	2.53	3.13	1.25	0.87	2.25	3.19
Weighted *n*		893,469		146,169	99,815	80,908	214,581	351,996
Unweighted *n*		1,697		346	337	333	336	345

Not applicable.

Notes: Case error includes cases found in error due to income error, identity error, residence error, and categorical error. Of all WIC participants, 97.47 percent (weighted) were certified as program eligible, and 2.53 percent (weighted) were certified in error. Data from NSWP-III Certification Survey were combined with data from the NSWP-III State Agency Survey to include the SA identity, residency, and income policies in the determination of error cases. The relative standard errors of the case error rates for the overall and all certification categories, with the exception of the child category, were over 30% and thus, these findings should be interpreted with caution.

Sources: Appendix I, Objective II Table 1a; NSWP-III Certification Survey; State Agency Survey.

Overall, error due to income eligibility was the highest (2.11 percent), followed by residence error (0.26 percent), categorical error (0.16 percent), and identity error (0.02 percent). There were no cases of expired certification error observed in the study (Table 8).[18]

Table 8. Estimates of Case Error Rates

Error Type	Case Error Count (Weighted *n*)	Case Error Count (Unweighted *n*)	Case Error Rate (Weighted %)
Income eligibility error	18,836	31	2.11
Categorical error	1,387	2	0.16
Identity error	139	1	0.02
Residence error	2,337	3	0.26
Expired certification error		0	

Not applicable.

Notes: Cases may be found in error for more than one reason. There were zero cases sampled for the CS that were found to have expired certification error. The case error rates for all error types shown in this table had a relative standard error over 30% and thus, these findings should be interpreted with caution.

Sources: Appendix I, Objective II Table 2a; NSWP-III Certification Survey; State agency WIC participant data.

The overall case error rate for reasons other than income eligibility was 0.43 percent. This error rate was highest among infant participants (1.09 percent), followed by child participants (0.37 percent) (Table 9).

Table 9. Estimates of Annual Case Error Rate Due to Reasons Other Than Income Ineligibility, Overall

Error Type	Case Error Count (Weighted *n*)	Case Error Count (Unweighted *n*)	Case Error Rate (Weighted %)
Overall	3,724	5	0.43
Categorical error	1,387	2	0.16
Identity error	139	1	0.02
Residence error	2,337	3	0.27

Notes: Cases may be found in error for more than one reason. Case counts by error type will not sum to the total number of cases certified in error; case error rates by error type will not sum to total error rate. Table does not include cases found in error due to income ineligibility. There were zero cases sampled for the CS that were found to have expired certification error. Weighted *n*s for certification category do not sum to the overall weighted *n* due to rounding. The case error rates for all error types shown in this table had a relative standard error over 30% and thus, these findings should be interpreted with caution.

Sources: Appendix I, Objective II Table 1b.1; NSWP-III Certification Survey; State agency WIC participant data.

DOLLAR ERROR AMOUNTS AND CERTIFICATION ERROR RATES

Certification error is a broader concept than case error. It includes income eligibility error (error due to household income higher than WIC eligibility requirement) and other errors, such as error from incorrectly denying or terminating participants. There are two main forms of certification error: provision of service to ineligible applicants and denial of service to eligible applicants.

The total certification error rate is the weighted, national estimate of cases with overpayments and underpayments, divided by the sum of national estimates of participants and denied applicants. The

[18] To measure expired certification errors, the Study Team used SA enrollee, issuance, and redemption data, identifying redemptions of instruments with a “date of first use” occurring after the certification end date recorded in the SA administrative database.

total pre-rebate dollar error estimate was $21,482,391—a dollar error rate of 3.20 percent of the total annualized WIC food costs (Table 10).[19] The post-rebate dollar error estimate was $11,200,786 with a dollar error rate of 1.67 percent.

Table 10. Overall Pre-Rebate and Post-Rebate Error Rates and Dollar Amounts, by Certification Category

WIC Certification Category	Pre-Rebate (Gross)		Post-Rebate (Net)	
	Error Rate (%)	Dollar Amount ($)	Error Rate (%)	Dollar Amount ($)
Total Certification Error	3.20	21,482,391	1.67	11,200,786
Pregnant	4.01	2,774,323	4.01	2,774,323
Breastfeeding Postpartum	1.80	861,637	1.80	861,637
Non-breastfeeding Postpartum	3.37	1,128,083	3.37	1,128,083
Infant	3.05	11,550,905	0.34	1,269,301
Child	3.62	5,167,443	3.62	5,167,443

Notes: For total certification error, weighted *n* = 921,469, unweighted *n* = 1,783; pregnant weighted *n* = 153,427, unweighted *n* = 360; breastfeeding postpartum weighted *n* = 101,374, unweighted *n* = 344; non-breastfeeding postpartum weighted *n* = 84,728, unweighted *n* = 340; infant weighted *n* = 220,353, unweighted *n* = 355; child weighted *n* = 361,586, unweighted *n* = 384. Dollar error rates were calculated using aggregated values without variance estimation. The overall dollar error rate is defined as the sum of (redemption amount × case error × final weight) divided by the sum of (redemption amount × final weights for all cases), where certification error is identity error, residence error, income error, categorical error, or denied error. Rebates include rebates for infant formula combined with rebates for foods other than infant formula.
Source: Appendix I, Objective II Table 3a.1. Confidence intervals are included in Appendix I, Objective II Table 3a.1.

For infants, the total pre-rebate dollar error estimate was $11,550,905 with a dollar error rate of approximately 3.05 percent of the total WIC food costs. The post-rebate dollar error estimate was $1,269,301, with a dollar error rate of approximately 0.34 percent. The other categories' dollar error amounts are unaffected by rebate adjustments that ranged from $861,637 and a dollar error rate of approximately 1.80 percent for breastfeeding postpartum participants to $2,774,323 with a dollar error rate of approximately 4.01 percent for pregnant participants.

Categorical Eligibility Error. The total for the pre-rebate error amount estimate was $690,996 and the post-rebate amount estimate was $511,263, resulting in an estimated dollar error rate of 0.11 percent for pre-rebate and 0.08 percent for post-rebate (Table 11). Error amounts and rates were highest among child participants ($504,710; 0.36 percent) while error amounts and rates were lowest among infants. The infant certification category pre-rebate dollar error estimate was $186,286 and the error rate was approximately 0.05 percent, while the post-rebate dollar error amount estimate was $6,554 and the error rate was less than 0.02 percent (Appendix I, Objective II Table 3a.1).

Identity Eligibility Error. The totals for both the pre-rebate and post-rebate dollar error estimates were $54,720 with a dollar error rate of approximately 0.01 percent of the total WIC food costs (Table 11). These findings were driven by the non-breastfeeding postpartum category since that was the only category with observed identity errors (0.17 percent) (Appendix I, Objective II Table 3a.1).

[19] The total pre-rebate dollar error estimate is a sum of underpayments and overpayments.

Table 11. Overall Pre-Rebate and Post-Rebate Error Rates and Dollar Amounts, by Error Type

Eligibility Error Type	Pre-Rebate (Gross)		Post-Rebate (Net)	
	Error Rate (%)	Dollar Amount ($)	Error Rate (%)	Dollar Amount ($)
Total Certification Error[1, 3]	3.20	21,482,391	1.67	11,200,786
Categorical	0.11	690,996	0.08	511,263
Identity	0.01	54,720	0.01	54,720
Residence	0.59	3,833,367	0.04	256,647
Income Eligibility	1.70	11,122,791	1.12	7,329,744
Denied applicant[2]	30.35	5,835,237	16.14	3,103,132

[1]There were zero cases sampled for the Certification Survey that were found to have expired certification error. Thus, this type of error is omitted from this table.

[2]The denied applicant findings should be interpreted with caution since the Study Team did not verify that the documentation provided during the interview was the same documentation on file at the LA.

[3]The relative standard errors of the error rates for categorical, identity, and residence were over 30%, and thus, these findings should be interpreted with caution.

Notes: For total certification error, weighted *n* = 921,469, unweighted *n* = 1,783; categorical eligibility error weighted *n* = 893,469, unweighted *n* = 1,697; identity eligibility error weighted *n* = 893,469, unweighted *n* = 1,697; residence eligibility error weighted *n* = 893,469, unweighted *n* = 1,697; income eligibility error weighted n = 893,469, unweighted n = 1,697; denied applicant eligibility error weighted *n* = 28,000, unweighted *n* = 86.Dollar error rates were calculated using aggregated values without variance estimation. The overall dollar error rate is defined as the sum of (redemption amount × case error × final weight) divided by the sum of (redemption amount × final weights for all cases), where certification error is identity error, residence error, income error, categorical error, or denied error. Rebates include rebates for infant formula combined with rebates for foods other than infant formula.

Source: Appendix I, Objective II Table 3a.1. Confidence intervals are included in Appendix I, Objective II Table 3a.1.

Residence Eligibility Error. The total for the pre-rebate dollar error estimate was $3,833,367 with a dollar error rate approximately 0.59 percent of the total WIC food costs. The overall post-rebate residency eligibility total dollar error estimate was $256,647 with a dollar error rate of 0.04 percent (Table 11). Only the non-breastfeeding postpartum and infant certification categories were determined to have residency error. For the non-breastfeeding postpartum category, the pre-rebate dollar error estimates were $54,720 and the dollar error rates were 0.17 percent. Within the infant category, the pre-rebate dollar amount estimate was $3,778,647 and the post-rebate amount estimate was $201,927, with dollar error rates of 1.02 percent for pre-rebate and 0.05 for post-rebate (Appendix I, Objective II Table 3a.1).

Denied Applicant Error. The DAS collected information about denied applicants' household income and composition for each member of the family/economic unit. The DAS also requested documentation that verified the applicant's identity, place of residence, and adjunctive or automatic income eligibility status. This information was used to evaluate whether the denial could be verified. Verified denials are cases that were denied by the LA and confirmed by the DAS to have not met at least one of the eligibility criteria (i.e., they did not provide sufficient documentation during the DAS to meet any of the eligibility criteria). A case was identified to be a nonverified denial if the case satisfied income, identity, residence, and categorical eligibility criteria during the DAS but was denied by the LA. These nonverified cases were used to estimate the denied applicant error amounts.

The pre-rebate estimate for denied applicant error amount was $5,835,237 and the post-rebate amount estimate was $3,103,132 of the total WIC food costs (Table 11). The dollar error rate was estimated at 30.35 percent for pre-rebate and 16.14 percent for post-rebate. The non-breastfeeding postpartum applicant category had the highest error amounts and rates. The dollar error estimates were $851,074 and the error rate was 56.39 percent. The breastfeeding postpartum certification category had the lowest error amounts ($275,183) while the child certification category had the lowest error rate (19.59 percent) (Appendix I, Objective II Table 3a.1).[20] For more details on the denied applicant findings, please see *Brief Report 9: Denied Applicants in WIC.*

Total Overpayments and Underpayments. As noted in the introduction improper payments comprise overpayments and underpayments. “Overpayments” refers to the issuance of benefits to individuals who were not actually eligible to receive those benefits, and “underpayments” refers to the denial of benefits to individuals who were erroneously determined to be ineligible. The pre-rebate overpayments estimates were $15,647,154 and the post-rebate dollar amount was estimated at $8,097,654. The amount in underpayments for pre-rebate dollar amount estimates was $5,835,237 and the post-rebate estimates were $3,103,132 (Table 12).

Table 12. Amounts of Overpayments and Underpayments

Improper Payment Estimates	Pre-Rebate Dollar Amount ($)	Post-Rebate Dollar Amount ($)
Overpayments	15,647,154	8,097,654
Underpayments	5,835,237	3,103,132
Gross erroneous payments [a]	21,482,391	11,200,786
Net erroneous payments	9,811,918	4,994,523

[a] The gross erroneous payments is the sum of overpayments and underpayments.

Sources: Appendix I, Objective II Table 3a.2; NSWP-III Certification Survey; State agency WIC participant data; State agency redemption data.

[20] The Study Team faced specific limitations in determining verified and nonverified denials. The Study Team assumed that the sample did not include individuals who completed an online or telephone prescreening, since the administrative request sent to SAs included a request for formal denials but not prescreened applicants. Second, while interviewers asked the denied applicant to provide the same documentation during the interview that they provided during the WIC certification appointment, the applicant might not have provided the same documentation. The Study Team did not have a mechanism to verify that the same documentation was provided. In light of these limitations, the denial error findings should be interpreted with care.

Income and Residency Documentation

WIC applicants can be determined income eligible based on their (or certain family members[21]) participation in other programs. Supplemental Nutrition Assistance Program (SNAP), Medicaid, and Temporary Assistance for Needy Families (TANF) are programs that confer adjunctive income eligibility for WIC, and all SAs are required to accept these programs per §246.7(d)(2)(vi)(1) of the WIC regulations.

SAs have the option to establish automatic income eligibility for WIC based on participation in other State-administered programs, provided those programs have income eligibility guidelines at or below the SA's WIC income guidelines.[22] Programs that may qualify a person for WIC through automatic income eligibility include, but are not limited to, the Food Distribution Program on Indian Reservations, Children's Health Insurance Program, Supplemental Security Income, Low Income Home Energy Assistance Program, and the National School Lunch Program and School Breakfast Program.

Overall, the majority of non-adjunctively/automatically income eligible WIC participants (53.30 percent) did provide income documentation during the CS interview while the remaining 46.69 did not provide documentation (Appendix I, Objective I Table 5a.1). The income for the respondents who did not provide income documentation was validated against the income provided in the SA administrative data.[23] The data provided by the SAs were the best alternative option when the respondent was unable to provide documentation during the interview, since income documentation is required for certification.

More than two-thirds (68.08 percent) of all adjunctively or automatically income eligible WIC participants provided proof-of-program-participation documentation. Among WIC participants who were interviewed for the CS within 30 days of the certification date, 82.47 percent provided proof-of-program-participation and income documentation during the CS (Appendix I, Objective I Table 5a.1).

In addition, the majority (99.74 percent) of WIC participants provided residency documentation during the CS, and nearly all WIC participants (99.81 percent) who were interviewed for the CS within 30 days of their certification date provided residency documentation during the CS (Appendix I, Objective II Table 2b). The remaining 0.26 and 0.19 percent of participants, respectively, did not provide residency documentation.

---

[21] Please note that adjunctive income eligibility through a family member only applies for TANF, a family that has a pregnant family member, or an infant on Medicaid per WIC regulations 246.7(d)(2)(vi)(2).

[22] U.S. Department of Agriculture, Food and Nutrition Service. (2020). *WIC eligibility requirements.* https://www.fns.usda.gov/wic/wic-eligibility-requirements

[23] For more information, please refer to NSWP-III section "Certification Error Case Counts and Rates" of Appendix D. Technical Appendix: Certification and Denied Applicant Survey.

CONCLUSION

Examination of error in WIC is a critical component to ensuring the ongoing success of the program. In 2019, nearly all WIC participants (97.47 percent) in this study met the income, identity, residency, and categorical requirements and were certified correctly. Thus, the overall certification error rate estimated was 2.53 percent. The main reason for certification error was due to individuals not meeting the income requirements. However, the income eligibility error rate findings show promising trends, with the estimated rates decreasing from 5.70 percent in 1988 to 2.11 percent in 2019. Future research could continue to estimate the national error rate and conduct studies with WIC SAs and LAs to identify new ways to reduce improper payments in WIC.

As with all research studies, limitations of the design and methodology are possible. The surveys were designed and tested to elicit accurate responses. Nevertheless, some response error is possible. Respondents may have unknowingly reported incorrect information. In addition, while interviewers asked the respondents to provide the same documentation during the interview as they did during the WIC certification appointment, the respondent might not have provided the same documentation. Lastly, while the completed surveys met the IPERIA precision requirements for error rates reported for IPERIA purposes, some of the error rates found in this study had relative standard errors over 30%, indicating these estimates should be interpreted with caution.

Prepared by Capital Consulting Corporation (CCC) and 2M Research Services for the USDA Food and Nutrition Service (Project Officer: Karen Castellanos-Brown)

Suggested citation:

Magness, A., Chakravorty, A., Williams, K., Ruggiere, P., Papa, F., Okyere, D., Santos, K., Nisar, H., Bajowski, F., & Singer, B. (2021). *Certification Error Rates and Estimates of Improper Payments in WIC: Brief Report #8.* Prepared by Capital Consulting Corporation and 2M Research Services. Contract No. AG-3198-K-15-0077. Alexandria, VA: U.S. Department of Agriculture, Food and Nutrition Service, Office of Policy Support, Project Officer: Karen Castellanos-Brown. Available online at: https://www.fns.usda.gov/research-and-analysis.

Acknowledgments:

The Study Team would like to thank the WIC State and local agency staff, and WIC participants and applicants who participated in the study. We greatly appreciate the guidance provided throughout the entire project by our partners at the U.S. Department of Agriculture, Food and Nutrition Service, with special assistance from Karen Castellanos-Brown, Courtney Paolicelli, Conor McGovern, Kelley Scanlon, Jennifer Teters, Lisa Southworth, Marta Kealey, Jessica Owen Day, and Karen Meade.

We also greatly appreciate the feedback and support from our Expert Panel Members: Carol Eyermann, Donna Hines, Mindy Jossefides, Julie Reeder, and Jackson Sekhobo. The Study Team also would like to thank our partners at Abt Associates for their support with this effort. We also appreciate Mary Ann Latter, Alicia Garza, Moyo Kimathi, Amy Wieczorek-Basl, Yuhan Huang, Shu Li and the rest of the data collection and analysis staff who contributed to this study. MacKenzie Regier, Cindy Romero, Gail Clark, and Joshua Townley provided invaluable quality assurance support throughout the study.