



Systematic Underutilization of WIC in Athens-Clarke County

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EXECUTIVE SUMMARY

Context

This study examines the underutilization of the Special Supplemental Nutrition Plan for Women, Infants, and Children, commonly referred to as WIC. Each year, 53% of infants born in the United States participate in this program (USDA, 2015). Through WIC, low-income prenatal women, postpartum women, infants, and young children (<5 years of age) receive vouchers to redeem for pre-approved nutritious foods or formula. Along with these food vouchers, participants also receive nutrition education, breastfeeding support, and access to healthcare (National WIC Association, 2017). These benefits are provided through a critical time for mothers and their children, and research has shown significant positive impacts on maternal and child health (Bitler & Curry, 2005; Kowaleski-Jones & Duncan, 2002). Benefits of program participation include short-term improvement in access to nutrition and health outcomes such as reductions in anemia among pregnant women (Owen & Owen, 1997). Lifelong benefits include improvements in physical and behavioral health outcomes, education outcomes, and economic outcomes among participants (Devaney & Shore, 1992; Avruch & Cackley, 1995; Krause *et al.*, 2010).

Despite established evidence of program efficacy, there is a national trend of underutilization of WIC benefits among eligible target populations. The USDA's 2015 report showed that only 62% of the eligible population was utilizing WIC in the United States. Georgia's coverage rate was even lower—a mere 58% of WIC-eligible families were found to participate in the program (USDA, 2015).

Research Questions

Combining the knowledge of tremendous program impacts on improving maternal and child outcomes and the trend of WIC underutilization, we conducted an assessment of utilization in Athens-Clarke County. Using household-level survey data from the Athens Wellbeing Project (AWP), we developed two primary questions to examine WIC utilization in Athens-Clarke County:

1. What is the extent of underutilization of the WIC program in Athens-Clarke County?
2. What factors predict participation in the WIC program in Athens-Clarke County?

Key Findings

We found that among children less than five years of age, only 32% of those eligible are participating. Data on pregnant and postpartum women were not available, so the utilization rate calculated is specific to young children, thus is likely a conservative estimate. The utilization rate in Athens-Clarke County is significantly lower than the state (58%) and national average (53.6%), respectively (Oliveira & Frazao, 2015).

Further analysis showed that having a student in public school and household SNAP participation were positive predictors of WIC participation. Households who reported having a Clarke County public school student in the home were 8.9% more likely to participate in WIC than households who did not. Households who reported participating in the SNAP program were 13.3% more likely to participate in

WIC than households who did not. Families at 100% of the Federal Poverty Line and below were also most likely to participate in the program than families above this level, even though the income eligibility extends to 185% FPL. This finding is consistent with national analysis (USDA, 2015).

We also conducted a series of interviews with the current WIC Coordinator at the Athens Department of Public Health (DPH). In that interview, she explained that the DPH does indeed see trends of increased participation among families that are enrolled in the SNAP program, the Head Start program, and Medicaid. Lastly, these interviews confirmed that local families with young children (aged one to four) are less likely to participate than those with infants (children less than 12 months of age). Overall, these findings demonstrated the importance of connection to social networks and social programs.

Recommendations

From these findings, we recommend three policy actions for Athens-Clarke County social service providers, with a special focus on organizations already associated with the WIC program:

- 1. The Athens Department of Public Health should engage in exploratory research with WIC participating families who have young children (ages one through five) who stay in the program.**

An inexpensive way to do this is to conduct a series of focus groups where participants can be asked about behaviors and decisions around continual program participation. The Athens Department of Public Health can use the feedback to target new interventions that would attract and retain eligible families into the WIC program.

- 2. A strategic partnership should be formed between the Athens Department of Public Health and Clarke County School District.**

We recommend that the Clarke County School District form a partnership with the Department of Public Health to specifically focus on recruitment and retention of WIC-eligible families—especially those with young children. An example of increasing access to WIC through such a partnership might include integrating WIC coordinators or local program staff into public school enrollment processes. When a parent or guardian of an eligible WIC family registers their child in school for the year at an open house event, having the opportunity to enroll in WIC on site at the school would tremendously increase flexibility of program access. This strategy would also overcome structural barriers such as limited operating hours, lack of transportation, and inaccessible clinics.

- 3. Local pediatricians and other healthcare providers for pregnant women and young children should become conduits for WIC enrollment.**

Health service provision is an internal pathway to improving program enrollment and retention. The Athens Department of Public Health and Athens area hospitals should create partnerships to integrate WIC prescriptions for all OB-GYNs, midwives, and pediatricians in the healthcare system. Obstetricians and pediatricians could be some of the strongest advocates of WIC to prenatal and postpartum women, and their infants and children. Prescribing an eligible family WIC and following up at prenatal visits, postpartum checks, and well-checks for babies and young children could be a way to connect families to the program.

Methods to Mitigate Barriers to WIC Recruitment and Retention

Barrier	Recruitment	Retention	Policy Intervention
Knowledge on WIC eligibility	✓		Parent education at the point of social service
Underutilization of natural channels	✓		Increase institutional referral channels (insurers, schools, hospitals, Head Start, etc.)
WIC eligible families near the income cutoff enroll at lower rates	✓	✓	Frame the program in terms of health promotion (rather than a public benefits program) to reduce associated stigma
Obstacles to enrollment and recertification	✓	✓	Increase accessibility of WIC sites
Appointment time	✓	✓	Adopt flexible appointment scheduling (offer walk-in appointments, online booking, or reduce the number of necessary visits)
Necessary documents/forms	✓	✓	Implement timely reminders and plan-making prompts
Hours or location of WIC office	✓	✓	Create more flexible hours, and partner with institutions that parents visit more frequently
Transportation problems	✓	✓	Provide childcare and/or transportation support

* Adapted from *Using Behavioral Science to Improve the WIC Experience*, produced by Dani Grodsky, Antonia Violante, Anthony Barrows, and Wendi Gosliner

INTRODUCTION

In the fall of 2017, a series of policy analysis papers were produced as partial fulfillment of course requirements for the Health Policy Analysis course taught by Dr. Grace Bagwell Adams in the Department of Health Policy and Management, College of Public Health at the University of Georgia. Each of these papers utilized the Athens Wellbeing Project (AWP) household survey data collected in the fall of 2016 through the winter of 2017, in addition to secondary data sources from the U.S. Census Bureau and other state and national databases. The intent of these analyses is to inform policy making at the local level in the Athens-Clarke County Community. Four policy papers were produced from the graduate seminar, covering the following topics: access to mental health services, housing quality and asthma prevalence, the underutilization of food assistance for women and children, and creation of an index to measure wellbeing.

This study examines the underutilization of the Special Supplemental Nutrition Plan for Women, Infants, and Children, commonly referred to as WIC. This program was piloted in 1972, and by 1975 was authorized for implementation in all 50 states. This program is specifically designed for pregnant and nursing mothers, infants, and children under the age of five years. Eligibility for the program is contingent on both income and health status; families must fall below 185% of the Federal Poverty Level and must also exhibit nutrition risk. However, “nutrition risk” is so broadly defined, most low income mothers and young children fall into this category. During fiscal year 2013, WIC participation averaged 8.6 million participants per month (USDA, 2014). Half of all infants and approximately one quarter of children under the age of five years in the United States are WIC participants (Oliveira & Frazao, 2009). It is currently the U.S. Department of Agriculture’s third largest food assistance program.

Each year, 53% of infants born in the United States participate in this program (USDA, 2015). Through WIC, low-income prenatal women, postpartum women, infants, and young children (<5 years of age) receive vouchers to redeem for pre-approved, nutritious foods or formula. Along with these food vouchers, participants also receive nutrition education, breastfeeding support, and access to healthcare (National WIC Association, 2017). These benefits are provided through a critical time for mothers and their children, and research has shown significant positive impacts on maternal and child health (Bitler & Curry, 2005; Kowaleski-Jones & Duncan, 2002). Benefits of program participation include short-term improvement in access to nutrition and health outcomes such as reductions in anemia among pregnant women (Owen & Owen, 1997). Lifelong benefits include improvements in physical and behavioral health outcomes, education outcomes, and economic outcomes among participants (Devaney & Shore, 1992; Avruch & Cackley, 1995; Krause *et al.*, 2010).

We examined WIC participation in Athens-Clarke County, quantifying the utilization rate and predicting the factors that significantly impact participation in the program. We find the county utilization rate to be significantly lower than the state and national average. We also find that the most significant predictor of WIC take-up is connection to other public programs and social services. From this research, we hope to contribute knowledge to the underutilization of this critical nutrition assistance program at the local level and recommend policy actions based on the findings.

MOTIVATION AND RESEARCH QUESTIONS

WIC provides vouchers to participants to purchase specific amounts of allowed foods, including items such as fresh fruits and vegetables, dairy, cereal, peanut butter, and formula for infants. Targeted

health outcomes of the program have historically included a reduction in premature births, low birth weight, and fetal mortality; and an increase in prenatal care, immunization rates, and diet quality (Metcoff *et al.*, 1985; Jackson, 2015). WIC also integrates breastfeeding promotion and support, including initiation of the peer-to-peer counseling initiative in 2004, which provides mothers with one-on-one counseling and support from women with breastfeeding experience who may have participated in the WIC program (Cueva *et al.*, 2017). Thus, WIC is not only a food assistance program; it is also a conduit to healthier lifestyle choices and access to healthcare services.

Despite established evidence of program efficacy, there is a national trend of underutilization of WIC benefits among eligible target populations. The USDA's 2015 report showed that only 53.6% of the eligible population was utilizing WIC in the United States. Georgia's coverage rate was comparably low—a mere 58% of WIC-eligible families were found to participate in the program (USDA, 2015).

Combining the knowledge of tremendous program impacts on improving maternal and child outcomes and the trend of WIC underutilization, we conducted an assessment of utilization in Athens-Clarke County. With national and state-level patterns in underutilization and trends in household-level survey data from the Athens Wellbeing Project (AWP) in mind, we developed two primary questions to examine WIC utilization in Athens-Clarke County:

1. What is the extent of underutilization of the WIC program in Athens-Clarke County?
2. What factors predict participation in the WIC program in Athens-Clarke County?

AWP DATA ANALYSIS

Household survey data from the Athens Wellbeing Project (AWP) was used in this cross-sectional study. The AWP is a collaboration among the Athens-Clarke County Unified Government, Clarke County School District, Athens Area Community Foundation, Family Connection-Communities in Schools, United Way of Northeast Georgia, the Athens Housing Authority, and the University of Georgia. A community-based household survey was designed to collect information about important public health issues in Athens-Clarke county, as well as provide key stakeholders with a snapshot of resource utilization relating to education, public safety, civic vitality, and housing.¹

Survey data were collected in the fall of 2016 through the winter of 2017 using a stratified random sample of all Athens-Clarke County residents, with the 16 Clarke County School District elementary school attendance zones representing individual strata. Four additional strata were created to represent low income and vulnerable populations, including seniors and homeless or transitional families, which might otherwise be under represented in the household sample. In total, 1,354 households completed the survey. The AWP household survey is representative of the total population at the county level. To account for variation in non-response, a sample weight was created to increase the level of representativeness of the survey.

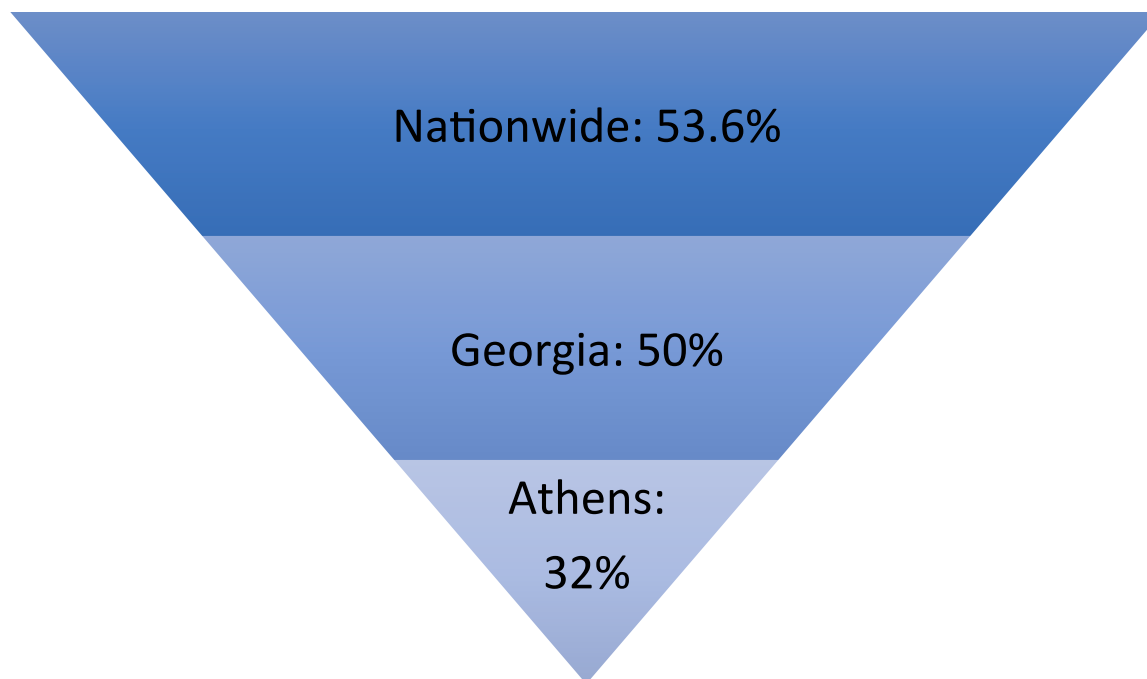
¹ The study protocol was approved by the University of Georgia Institutional Review Board and was deemed exempt from further review meeting non-research criteria (IRB Study ID #00003747).

QUESTION 1: WIC UTILIZATION IN ATHENS-CLARKE COUNTY

A combination of quantitative and qualitative data was used to answer the research questions for this study. Qualitative data included two semi-structured interviews conducted with the Athens-Clarke County WIC Coordinator at the Department of Public Health. Quantitative data came from multiple sources. Existing publically available secondary data sources were used in conjunction with household survey data from the Athens Wellbeing Project (AWP). Secondary data sources included population, household, and age demographic information from the U.S. Census Bureau's American Community Survey (2016). County-level indicators on household federal poverty status were collected from the Annie E. Casey Foundation's Kids Count Datacenter (2016).

Using these sources, we quantified the underutilization rate for Athens-Clarke County for children aged one to four years. Data on pregnant and postpartum women were not available, so the utilization rate calculated is specific to young children and thus is likely a conservative estimate of the actual rate. We found that among children less than five years of age, only 32% of those eligible are participating. Thus, the utilization rate in Athens-Clarke County is significantly lower than the state (58%) and national average (53.6%), respectively (Oliveira & Frazao, 2015).

Figure 1: WIC utilization rate among program-eligible young children (<5 years of age).



QUESTION 2: FACTORS PREDICTING WIC PROGRAM PARTICIPATION IN ATHENS-CLARKE COUNTY

To determine which factors predict WIC participation, we utilized household survey data from the Athens Wellbeing Project (AWP), limiting the sample to only those who would be eligible for WIC. We included only households who reported monthly income at or below 200% of the federal poverty line

and those who reported having a child in the home ages 0 to 5. Descriptive statistics of the subsample of low-income families with young children are included in Table 1. All predictors that were eventually included in the analysis are included in the Table 1.

**Table 1. Sample Summary Statistics:
Families <200%FPL & With Young Children (<5 years of age).**

Variable	Mean (%)
Household has a student in Clarke County School District	44%
SNAP Participant	40%
Household has at least one person with depression	33%
Black	38%
White	51%
Asian	4%
Latinx	12%
Employed	66%
Married	44%
Household has at least one child in childcare	40%
Household has a student in Clarke County School District	33%

We then estimated a logistic regression that predicted WIC participation. Variables in the model included race, ethnicity, family composition, whether the family had a child in the Clarke County School District, whether the family participated in the SNAP (food stamp) program, and whether the respondent indicated that someone in the household had depression. We found that having a student in public school and household SNAP participation were significant, positive predictors of WIC participation. Households who reported having a Clarke County public school student in the home were 8.9% more likely to participate in WIC than households who did not. Households who reported participating in the SNAP program were 13.3% more likely to participate in WIC than households who did not. Further, we found that having at least one person in the household with a diagnosed depressive disorder was a significant, negative predictor of WIC participation. Households who reported depression were 9.0% less likely to participate in WIC than households who did not. One additional finding of note is the income distribution observed among WIC participants. Families at 100% of the Federal Poverty Line and below were most likely to participate in the program. Although the income eligibility extends to 185% FPL, families above the 100% threshold are far less likely to participate. This finding is consistent with national analysis (USDA, 2015).

Table 2. Logit Model Results Predicting WIC Participation.

Variable	Marginal Effect	P-Value
Household has a student in Clarke County School District	8.9%*	.10
SNAP Participant	13.3%**	.02
Household has at least one person with depression	-9%***	.004

Note: * p<.1, ** p<.05, *** p<.01. All data weighted using probability weights. Models limited to families at or below 200% FPL.

After conducting quantitative analysis of secondary data and the AWP household survey, we conducted a series of interviews with the current WIC Coordinator at the Athens Clark County Department of Public Health (DPH). In that interview, the WIC Coordinator confirmed that the DPH does indeed see trends of increased participation among families that are already enrolled in the SNAP program and who are more connected to social services and public programs (Siepker, 2017). This explanation lends further insight to the finding that a family with a child in public school is more likely to participate in WIC. In addition, the WIC Coordinator said that families with children in the Head Start program and Medicaid participants are also more likely to participate in WIC, relative to WIC-eligible families who are not enrolled in those public programs. Lastly, these interviews confirmed that local families with young children (aged one to four) are less likely to participate than those with infants (children less than 12 months of age). Overall, these findings demonstrated the importance of connection to social networks and social programs. The more a family is connected to people and community programs, the higher the likelihood they will participate in WIC.

ECONOMIC IMPLICATIONS

There are direct and indirect economic benefits of WIC participation. Regarding indirect benefits, the average cost for a preterm baby's first year of life is \$49,000 compared to \$5,000 for a full term baby (Institutes of Medicine, 2006). WIC lowers these costs by reducing the risk for preterm birth by 25% (IOM, 2006). For every dollar spent on a pregnant woman in the WIC program, up to \$4.21 is saved in Medicaid for her and her newborn baby (American Academy of Pediatrics, 2017). Given that WIC returns over four dollars for every dollar invested in the program in Medicaid spending alone, increasing program participation should be a top priority for local service providers in our community.

The USDA states that the average dollar value of one year's worth of WIC vouchers for food and formula is \$558 in direct benefits (USDA, 2017). If we multiply that amount by the number of young children eligible for but not participating in WIC, we see that our direct unclaimed benefit is almost \$2 million per year for Athens-Clarke County in food assistance vouchers alone. These dollars represent real savings for local families and community providers that would not increase local public spending, given that WIC is a federal program providing state block grants each year to cover the cost of benefits. These estimates are conservative because they only take eligible young children into account and do not include pregnant and postpartum mothers.

POLICY RECOMMENDATIONS

Based on our research, there are two distinct (albeit related) policy problems that must be addressed: 1) **recruitment** of new WIC-eligible families into the program; and 2) **retention** of participating families through the duration of program eligibility.

BEST PRACTICES: CITY OF SAN JOSE, CALIFORNIA

The city of San Jose, California has worked to intervene on WIC underutilization and has suggested best practices to implement at the community level. They released a report in 2017, which presented an

approach to organizing policy responses for both recruitment and retention of WIC eligible families. Their recommendations have been adapted and presented in the table below.

Table 3. Methods to Mitigate Barriers to WIC Recruitment and Retention

Barrier	Recruitment	Retention	Policy Intervention
Knowledge on WIC eligibility	✓		Parent education at the point of social service
Underutilization of natural channels	✓		Increase institutional referral channels (insurers, schools, hospitals, Head Start, etc.)
WIC eligible families near the income cutoff enroll at lower rates	✓	✓	Frame the program in terms of health promotion (rather than a public benefits program) to reduce associated stigma
Obstacles to enrollment and recertification	✓	✓	Increase accessibility of WIC sites
Appointment time	✓	✓	Adopt flexible appointment scheduling (offer walk-in appointments, online booking, or reduce the number of necessary visits)
Necessary documents/forms	✓	✓	Implement timely reminders and plan-making prompts
Hours or location of WIC office	✓	✓	Create more flexible hours, and partner with institutions that parents visit more frequently
Transportation problems	✓	✓	Provide childcare and/or transportation support

Adapted from *Using Behavioral Science to Improve the WIC Experience*, produced by Dani Grodsky, Antonia Violante, Anthony Barrows, and Wendi Gosliner

IMPLEMENTATION IN ATHENS-CLARKE COUNTY

From these findings, we recommend three policy actions for Athens-Clarke County social service providers, with a special focus on organizations already associated with the WIC program:

- 1. The Athens Department of Public Health should engage in exploratory research with WIC participating families who have young children (ages one through five) who stay in the program.**

An inexpensive way to do this is to conduct a series of focus groups where participants can be asked about behaviors and decisions around continual program participation. Focus groups typically involve five to eight participants and last less than an hour, and can offer insight into what changes can be implemented in WIC delivery. The Athens Department of Public Health can use the feedback to target new interventions that would attract and retain eligible families into the program.

2. A strategic partnership should be formed between the Athens Department of Public Health and Clarke County School District.

We recommend that the Clarke County School District form a strategic partnership with the Department of Public Health to specifically focus on recruitment and retention of WIC-eligible families—especially those with young children. An example of increasing access to WIC through such a partnership might include integrating WIC coordinators or local program staff into public school enrollment processes. When a parent or guardian of an eligible WIC family registers their child in school for the year at an open house event, having the opportunity to enroll in WIC on site at the school would tremendously increase flexibility of program access. This strategy would also overcome structural barriers such as limited operating hours, lack of transportation, and inaccessible clinics.

3. Local pediatricians and other healthcare providers for pregnant women and young children should become conduits for WIC enrollment.

Health service provision is an internal pathway to improving program enrollment and retention. The Athens Department of Public Health and Athens area hospitals should create partnerships to integrate WIC prescriptions for all OB-GYNs, midwives, and pediatricians in the healthcare system. Obstetricians and pediatricians could be some of the strongest advocates of WIC to prenatal and postpartum women, and their infants and children. Prescribing an eligible family WIC and following up at subsequent prenatal visits, postpartum checks, and well-checks for babies and young children could be a way to connect families to the program.

LIMITATIONS

There are several limitations to this analysis. First, this analysis stems from a cross-sectional survey. As survey responses were taken at a single point in time, relationships described in this analysis are associative and not causal. Second, survey responses were collected at the household level, not the individual level. Thus, we are unable to make inferences or determine relationships at the individual resident level. Third, these data are self-reported measures that introduce the potential for response bias in the sample.

CONCLUSIONS

1. Underutilization of the WIC Program, especially among young children (<5 years of age) is a community issue that needs to be addressed to improve maternal and child health in Athens-Clarke County. Only 32% of WIC-eligible young children are currently receiving the benefit.
2. Connection to other public programs (including Head Start, Medicaid, SNAP, and having a child in Clarke County School District) strongly predicts WIC participation.
3. The community is currently foregoing approximately \$2 million annually in direct food assistance benefits that could be assisting low-income infants, young children, and pre/postpartum women.
4. Local stakeholders and community leaders including the Department of Public Health, the Clarke County School District, and our hospital systems need to form strategic partnerships. These entities make up the inside channels that have the most direct access to potential and existing WIC clients and should play a critical role in increasing program take-up.

ATHENS WELLBEING PROJECT

The Athens Wellbeing Project (AWP) is made possible through the following community stakeholders: Athens Area Community Foundation (AACF), Clarke County School District, United Way of Northeast Georgia, University of Georgia, Athens Housing Authority, and the Athens-Clarke County Unified Government. For more on the AWP, please visit www.athenswellbeingproject.org.

Appendix 1: Full Results of AWP Analysis

Table 1. Full Logit Model Results Predicting WIC Participation.

Variable	Marginal Effect	P-Value
Household has a student in Clarke County School District	8.9%*	.10
SNAP Participant	13.3%**	.02
Household has at least one person with depression	-9%***	.004
Latinx	5.3%	.48
White	1.7%	.79
Employed	7.1%	.17

Note: * $p < .1$, ** $p < .05$, *** $p < .01$. All data weighted using probability weights. Models limited to families at or below 200% FPL.

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