



The Role of WIC in Public Health

As the nation's premier public health nutrition program, WIC is a cost-effective, sound investment—insuring the health of our children.

NWA'S MISSION
NWA inspires and empowers the WIC community to advocate for and promote quality nutrition services for all eligible mothers and young children, and assure effective management of WIC.

Overview

WIC is a preventive public health nutrition program that provides nutrition and breastfeeding education, nutritious foods, and improved access to regular health care and social services to low and moderate-income women and young children with, or at risk of developing, nutrition related health problems.

What is Public Health?

Public Health is the art and science dealing with the protection and improvement of community health by organized community effort and including preventive medicine and sanitary science.¹

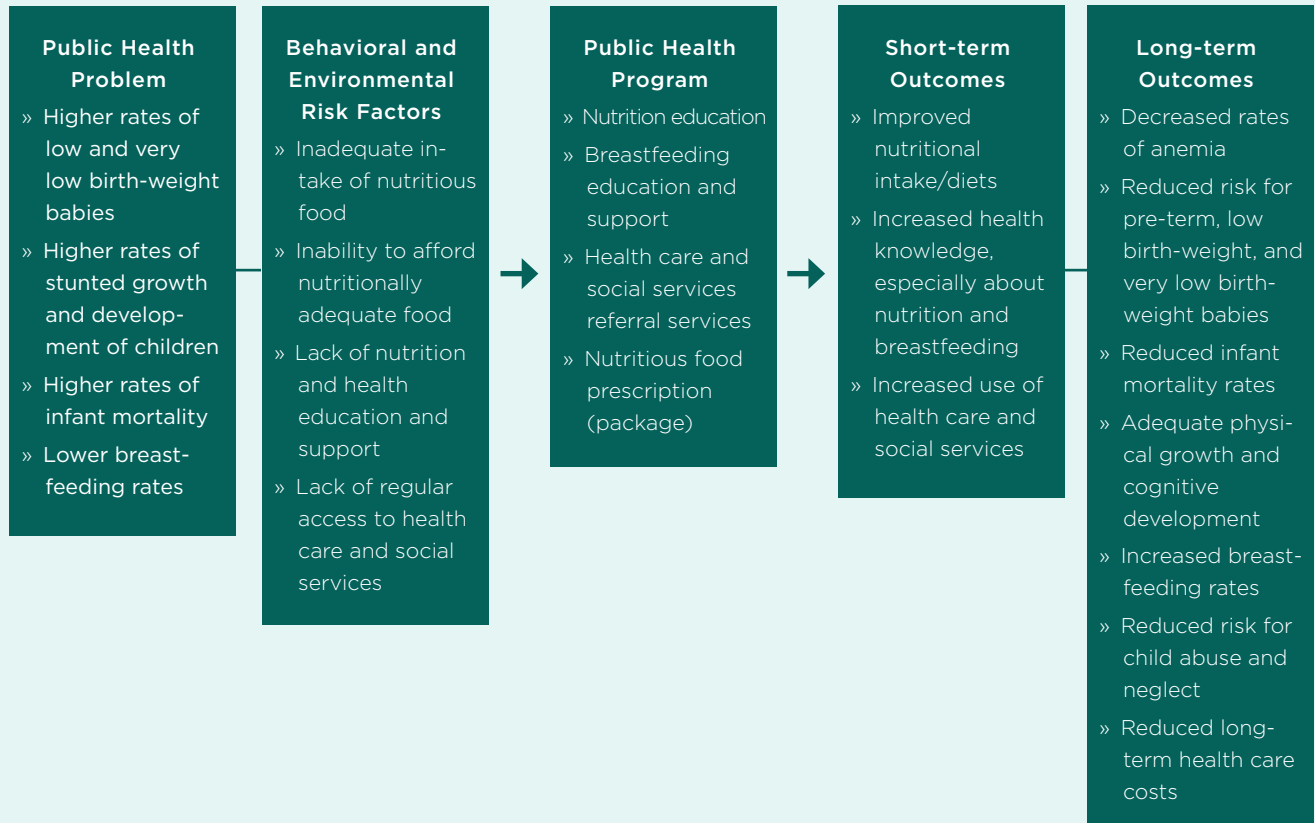
Public health aims to prevent health-related problems from developing or progressing in entire populations. Public health professionals study how the health of a population is affected by genetics, the environment and personal choice. They also develop and implement educational programs, service-based programs like vaccine administration, and policies for specific target populations based on the assessed health problems and risk factors of the target populations. Target populations can range in size from the number of students in a classroom to all residents of a country.²

It is Important for the American Population to Be Healthy

A healthy population...

- » Ensures a productive and globally competitive workforce.
- » Enhances national security by providing a strong pool of young people physically and mentally capable of serving in the military.
- » Reduces health care costs by preventing diseases and injuries that are expensive to treat.
- » Enables citizens to pursue their American Dreams without hindrance by poor health.

The WIC Public Health Model: Low-income Women, Infants, and Children



The WIC Public Health Model

The WIC Program model was developed and modified over the years to target behavioral and environmental risk factors that contribute to pre-term and low birth-weight pregnancies, stunted childhood growth and development, infant mortality, and low breastfeeding rates in the United States. For over 35 years, WIC has been effective in reducing the burden of these public health problems for millions of families and the general population.

WIC is an Important Piece of the Local Public Health System

WIC is housed within the state departments of health and operates inter-dependently with other public health programs. Providing referral services to health care and social services, WIC is a “gateway to the health care and social service systems,” which enables more comprehensive health promotion and disease prevention in the WIC population.³

WIC-Related Healthy People 2020 Objectives

HEALTHY GROWTH AND DEVELOPMENT	HEALTH CARE ACCESS	NUTRIENT INTAKE/DIET
Increase the proportion of children who are ready for school in all five domains of healthy development: physical development, social-emotional development, approaches to learning, language, and cognitive development.	Increase the proportion of women delivering a live birth who received preconception care services and practiced key recommended preconception health behaviors.	Increase the proportion of women of childbearing potential with intake of at least 400ug (micrograms—need the correct “u” symbol) of folic acid from fortified foods or dietary supplements.
Reduce low birth weight (LBW) and very low birth weight (VLBW).	Increase the proportion of pregnant women who receive early and adequate prenatal care.	Reduce the proportion of women of childbearing potential who have low red blood cell folate concentrations.
Reduce preterm births.	FOOD ACCESS AND SECURITY	Increase the contribution of fruits to the diets of the population aged 2 years and older.
Reduce the rate of fetal and infant deaths.	Eliminate very low food security among children.	Increase the variety and contribution of vegetables to the diets of the population aged 2 years and older.
WEIGHT MAINTENANCE	Reduce household food insecurity and in doing so reduce hunger.	Increase the contribution of whole grains to the diets of the population aged 2 years and older.
Increase proportion of adults who are at a healthy weight.	Increase the proportion of Americans who have access to a food retail outlet that sells a variety of foods that are encouraged by the <i>Dietary Guidelines for Americans</i> .	Reduce consumption of calories from solid fats and added sugars in the population aged 2 years and older.
Reduce the proportion of adults who are obese.	BREASTFEEDING	Reduce consumption of saturated fat in the population aged 2 years and older.
Reduce the proportion of children and adolescents who are considered obese.	Increase the proportion of infants who are breastfed.	Reduce the consumption of sodium in the population aged 2 years and older.
Increase the proportion of mothers who achieve recommended weight gain during pregnancies.	OTHER HEALTH BEHAVIOR	Increase consumption of calcium in the population aged 2 years and older.
Prevent inappropriate weight gain in youths and adults.	Increase abstinence from alcohol, cigarettes, and illicit drugs among pregnant women.	Reduce iron deficiency among young children and females of childbearing age.
		Reduce iron deficiency among pregnant females.

WIC is Important to Achieving National Public Health Goals

The Healthy People 2020 national initiative identifies approximately 600 science-based objectives to improve the health of Americans.⁴ WIC is instrumental in working towards two major Healthy People 2020 goals and nearly 30 health objectives.

- » Goal: Promote health and reduce chronic disease risk through the consumption of healthful diets and achievement and maintenance of healthy body weights.
- » Goal: Improve the health and well-being of women, infants, children, and families.

WIC PROGRAM OUTCOMES

WHY IT'S IMPORTANT

Healthy Birth Outcomes

- » Prenatal WIC participation is associated with lower infant mortality rates.¹
- » It is now well-documented in research that WIC has done a good job of improving birth outcomes and the health of infants, including reducing low birth weight births below 2500g.^{2 3 4 5 6 7 8 9} WIC is particularly effective at improving birth outcomes in the moms with inadequate prenatal care and who are particularly high risk cases.^{10 11} Longer duration of participation in WIC yields better birth outcomes. WIC participation results in better birth outcomes therefore WIC participation also results in lower Medicaid costs.^{12 13 14}

Preterm births cost the U.S. over \$26 billion a year, with average first year medical costs for a premature/low birth-weight baby of \$49,033 compared to \$4,551 for a baby born without complications.¹⁵ For every dollar spent on a pregnant woman in WIC, up to \$4.21 is saved in Medicaid.¹⁶

Increased Breastfeeding Rates

- » With increasing breastfeeding education and support services over the years, the WIC breastfeeding initiation rate increased 21.8 percentage points to 63.1% between 1998 and 2010.¹⁷
- » WIC has been shown to positively influence a mother's decision to breastfeed.¹⁸ WIC's Loving Support Makes Breastfeeding Work campaign has also been successful in educating and raising awareness about breastfeeding.^{19 20} And, breastfeeding peer counselor support has been shown to be effective in improving breastfeeding initiation and duration rates in low-income women in WIC and in women overall.^{21 22 23 24}

Breastfeeding helps mothers feel close to their babies, and breast milk contains all the nutrients infants need to grow and develop. Breastfed infants tend to be healthier since they receive antibodies from the breast milk, protecting them against infection. Breastfeeding has been shown to reduce the risk for developing obesity later in childhood.^{25 26 27 28 29} It provides a protective effect against infectious diseases and sudden infant death syndrome in children.^{30 31} And, it improves cognitive development.³² It has been associated with a reduction in LDL cholesterol, blood pressure related disorders, type 2 diabetes, and cardiovascular dysfunction.³³ Additionally, if 90% of US mothers exclusively breastfed their infants to 6 months, the US would save \$13 billion per year in medical expenses and prevent over 900 deaths annually.³⁴

Adequate Growth and Development

- » Infants receiving WIC are less likely to be underweight, but are not at greater risk for overweight.³⁵
- » Four and five-year-olds whose mothers participated in WIC during pregnancy have better vocabulary test scores than children whose mothers had not received WIC benefits.³⁶

Infancy and early childhood are formative years for physical and cognitive development, setting a positive or negative health trajectory for the rest of life.

WIC PROGRAM OUTCOMES	WHY IT'S IMPORTANT
<p>Increased Consumption of Key Nutrients/Increased Nutrient Density of Diet</p> <ul style="list-style-type: none"> » WIC children have higher increased intakes of iron, potassium, and fiber.³⁷ » WIC nutrition education leads to an increased consumption of whole grains, fruits, and lower-fat milk.³⁸ » WIC participation has been documented as associated with improvement in Healthy Eating Index scores and subscores for vegetables, fruits and meats as well as decreasing intake of fat and added sugar.^{39 40} » After the introduction of the updated WIC food packages, WIC participants increased consumption of healthy foods, including whole grains, fruits, and vegetables, and decreased consumption of whole milk.⁴¹ 	<p>A healthy diet is associated with a positive health status and can reduce the risk for several chronic diseases including obesity, heart disease, type 2 diabetes, and some cancers. Consuming a healthy diet during early childhood contributes to adequate growth and development.</p>
<p>Decreased Prevalence of Anemia</p> <ul style="list-style-type: none"> » Low-income children enrolled in WIC have a lower prevalence of anemia than those who are not enrolled in WIC.⁴² 	<p>Anemia is a condition caused by lack of healthy red blood cells to carry oxygen around to tissues in the body. Not only does anemia disrupt the growth and health of body tissues because they are not getting enough oxygen, but symptoms that manifest as a result, including fatigue, dizziness, headaches and difficulty concentrating, interfere with living a productive and healthy life.⁴³</p>
<p>Improved Likelihood of Immunization</p> <ul style="list-style-type: none"> » Children who participate in WIC are more likely to be immunized than children who drop out of WIC.⁴⁴ 	<p>Vaccines protect children from well-known serious infections that can lead to further medical complications, poor health, and death. Vaccination of large portions of a population also hinders the spread of infectious diseases, and as a result, protects vulnerable members of the community who cannot get vaccinated for various reasons.</p>

References

1. Khanani, I., Elam, J., Hearn, R., Jones, C., & Maseru, N. (2010). The impact of prenatal WIC participation on infant mortality and racial disparities. *American Journal of Public Health*, 100(S1), S402-S209.
2. Bitler MP & Currie J. Does WIC work? The effects of WIC on pregnancy and birth outcomes. *J Policy Anal Manage*. 2005 Winter; 24(1):73-91.
3. Cain M. African American and Non-Hispanic White Births in Enhanced Prenatal Care Programs and WIC. *Journal of Health Disparities Research and Practice*. 2007 Winter; 1(2):4:59-71.
4. Figlio D, et al. Does prenatal WIC participation improve birth outcomes? New evidence from Florida. *Journal of Public Economics*. 2009 Feb; 93(1-2): 235-245.
5. Gueorguieva R, Morse SB, Roth J. Length of Prenatal Participation in WIC and Risk of Delivering a Small for Gestational Age Infant: Florida, 1996-2004. *Matern Child Health J*. 2009 Jul; 13(4):479-88.
6. Hoynes H, et al. Can targeted transfers improve birth outcomes?: Evidence from the introduction of the WIC program. *Journal of Public Economics*. 2011 Aug; 95(7-8):813-827.
7. Kowaleski-Jones L, Duncan GJ. Effects of participation in the WIC program on birthweight: evidence from the National Longitudinal Survey of Youth. *Special Supplemental Nutrition Program for Women*.
8. Reichman NE, et al. Effects of Psychosocial Risk Factors and Prenatal Interventions on Birth Weight: Evidence From New Jersey's HealthStart Program. *Perspect Sex Reprod Health*. 2003 May-Jun; 35(3):130-7.
9. Richards R, et al. Maternal health behaviors and infant health outcomes among homeless mothers: U.S. Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) 2000-2007. *Prev Med*. 2011 Jan; 52(1):87-94.
10. El-Bastawissi AY, et al. Effect of the Washington Special Supplemental Nutrition Program for Women, Infants and Children (WIC) on Pregnancy Outcomes. *Matern Child Health J*. 2007 Nov; 11(6): 611-21.
11. Gai Y, Feng L. Effects of Federal Nutrition Program on Birth Outcomes. *Atlantic Economic Journal*. 2012; 40(1): 61-83.
12. Gueorguieva R, Morse SB, Roth J. Length of Prenatal Participation in WIC and Risk of Delivering a Small for Gestational Age Infant: Florida, 1996-2004. *Matern Child Health J*. 2009 Jul; 13(4):479-88.
13. Lazariu-Bauer V, et al. A Comparative Analysis of Effects of Early Versus Late Prenatal WIC Participation on Birth Weight: NYS, 1995. *Matern Child Health J*. 2004 Jun; 8(2):77-86.
14. Gregory PM, de Jesus ML. Racial differences in birth outcomes and costs in relation to prenatal WIC participation. *N J Med*. 2003 Mar; 100(3):29-36.
15. El-Bastawissi AY, et al. Effect of the Washington Special Supplemental Nutrition Program for Women, Infants and Children (WIC) on Pregnancy Outcomes. *Matern Child Health J*. 2007 Nov; 11(6): 611-21.
16. Gai Y, Feng L. Effects of Federal Nutrition Program on Birth Outcomes. *Atlantic Economic Journal*. 2012; 40(1): 61-83.
17. Thomson Reuters. The cost of Prematurity and complicated deliveries to U.S. employers. Report prepared for March of Dimes, October 29, 2008.
18. USDA Report: The savings in Medicaid costs for newborns and their mothers from prenatal participation in the WIC program. Addendum October 1991.
19. WIC participant and program characteristics 2010 Report. Retrieved January 5, 2012 from <http://www.fns.usda.gov/wic/resources/>
20. Meehan, K. et al. The association between an electric pump loan program and the timing of requests for formula by working mother in WIC. *J Hum Lact*. 2008 May; 24(2): 150-158.
21. Mitra AK, et al. Evaluation of a comprehensive loving support program among state Women, Infants, and Children (WIC) program breastfeeding coordinators. *Matern Child Health J*. 2004 Jun; 8(2):65-70.
22. Mitra AK, et al. The loving support breastfeeding campaign: awareness and practices of health care providers in Mississippi. *J Obstet Gynecol Neonatal Nurs*. 2003 Nov-Dec; 32(6): 753-60.
23. Anderson AK, et al. A randomized trial assessing the efficacy of peer counseling on exclusive breastfeeding in a predominantly Latina low-income community. *Arch Pediatr Adolesc Med*. 2005 Sep; 159(9): 836-41.
24. Gross SM, Resnick AK, Cross-Barnet C, Nanda JP, Augustyn M, Paige DM. The Differential Impact of WIC Peer Counseling Programs on Breastfeeding Initiation across the State of Maryland. *J Hum Lact*. 2009 Aug; 25(4): 435-43.
25. Mickens AD, et al. Peer support and breastfeeding intentions among black WIC participants. *J Hum Lact*. 2009 May; 25(2): 157-62.
26. Yun S, et al. Evaluation of the Missouri WIC (Special Supplemental Nutrition Program for Women, Infants and Children) Breastfeeding Peer Counselling Programme. *Public Health Nutr*. 2010 Feb; 13(2): 229-37.
27. Davis JN, et al. Effects of breastfeeding (BF) and low sugar-sweetened beverage (SSB) intake on obesity prevalence in Hispanic toddlers. *Am J Clin Nutr*. Jan 2012; 95(1): 3-8.
28. Herrick H, et al. Does Breastfeeding Reduce the Risk of Child Overweight in North Carolina? *SCHS Studies*, A publication of State Center of Health Statistics. 2010 Oct; no. 164.
29. Metzger MW & McDade TW. Breastfeeding as obesity prevention in the United States: A sibling difference model. *Am J Hum Biol*. 2009 Aug; 22(3): 291-296.
30. Procter SB & Holcomb CA. Breastfeeding Duration and Childhood Overweight Among Low-Income Children in Kansas, 1998-2002. *American Journal of Public Health*: 2008 January; 98 (1):106-110.
31. Stolzer JM. Breastfeeding and Obesity: A Meta Analysis. *Open Journal of Preventive Medicine*. 2011 Oct; 1(3): 88-93.
32. Duijts L, et al. Breastfeeding protects against infectious diseases during infancy in industrialized countries. A systematic review. 2009 Jul; 5(3): 199-210.
33. Hauck FR, et al. Breastfeeding and Reduced Risk of Sudden Infant Death Syndrome: A Meta-analysis. *Pediatrics*. 2011 June; 128(1): 103-110.
34. Kramer MS, et al. Breastfeeding and Child Cognitive Development: New Evidence From a Large Randomized Trial. *Arch Gen Psychiatry*. 2008; 65(5):578-584.
35. Stolzer JM. Breastfeeding and Obesity: A Meta Analysis. *Open Journal of Preventive Medicine*. 2011 Oct; 1(3): 88-93.
36. Bartick M, Reinhold A. The Burden of Suboptimal Breastfeeding in the United States: A Pediatric Cost Analysis. *Pediatrics*. 2010 April; 125 (5): e1048-e1056.
37. Black, M., Cutts, D., Frank, D.A, et al. (2004). WIC impact on infant growth, health, and food security: Results of a multiyear surveillance study. *Pediatrics*, 114(1), 169-176.
38. Hicks, L., Langham, R., & Takenaka, J. (1985). Cognitive measure stability in siblings following early nutritional supplementation. *Public Health Reports*, 100, 656-662.
39. Yen, S. (2010). The effects of SNAP and WIC Programs on nutrient intakes of children. *Food Policy*, 35(6), 576-583.
40. Ritche, L., Whaley, S., Spector, P., Gomez, J., & Crawford, P. (2010). Favorable impact of nutrition education on California WIC families. *Journal of Nutrition Education and Behavior*, 42(3), S2-S10.
41. Dundas ML & Cook K. Impact of the Special Supplemental Nutrition Program for Women, Infants and Children on the Healthy Eating Behaviors of Preschool Children in Eastern Idaho. *Topics in Clinical Nutrition*. 2004 Oct- Dec; 19(4):273-279.
42. Siega-Riz AM, et al. Food Consumption Patterns of Infants and Toddlers: Where Are We Now? *J Am Diet Assoc*. 2010; 110:S38-S51.
43. Whaley, S, et al. Revised WIC Food Package Improves Diets of WIC Families. *J Nutr Educ Behav*. 2012 May; 44(3): 204-209.
44. Sherry, B., Mei, Z., & Yip, R. (2001). Continuation of the decline in prevalence of anemia in low-income infants and children in five states. *Pediatrics*, 107(4), 677-682.
45. National Institutes of Health. Anemia. Retrieved January 6, 2012 from <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001586/>
46. Cortese, M.M., Diaz, P.S., Samala, U., Mennone, J.Z. et al. (2004). Underimmunization in Chicago children who dropped off WIC. *Am J Prev Med*, 26(1), 29-33.