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# Effects of the Women, Infants and Children (WIC) Program on Health Disparities

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## Overview

- Many studies show that women who use WIC during pregnancy have healthier infants.
  - Narrowing disparities in health at birth is important given evidence of long term effects.
  - Arguments that positive WIC effects are due to selection are implausible – WIC participants appear to be very negatively selected.
  - Less evidence is available regarding effects on young children or mechanisms, though available evidence suggests that WIC improves nutrient intakes in these groups and does not contribute to obesity.
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## What is WIC?

- WIC offers coupons that can be redeemed for specific foods by eligible women and children under 5 who are certified to be nutritionally “at risk”.
  - The monthly value of WIC benefits is about \$37.
  - In 2005, WIC served 8 million people per month at an annual cost of \$5.2 billion.
  - Income cutoff is 185% of poverty (about \$36,000), but women and children on Medicaid are automatically eligible.
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## WIC During Pregnancy and Health at Birth

- Currie (2003) reviews 28 studies that examine the effects of WIC on birth weight and other infant health outcomes using different samples, time periods, measures of participation. 24 find positive effects (updating a 1992 GAO survey of 17 studies).
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Only a few of these studies were experimental, but several have compelling designs:

- Comparisons of siblings in pairs where the mother participated during one pregnancy but not during another.
  - Limiting sample to low-income (Medicaid) women only.
  - Instrumental variables using state-level program characteristics as instruments.
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Positive Effects on Birth weight are notable given recent evidence of long term negative effects of low birth weight:

- Studies linking birth records to administrative data bases and focusing on sibling or twin comparisons have shown positive effects of birth weight on educational attainment in Norway, Canada, and the U.S.
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Recently some critics have argued that positive WIC effects may be due to selection. Is this plausible?

- Without an experimental design, it is impossible to rule out the hypothesis that WIC participants have positive unobserved characteristics that improve the outcomes of their infants relative to infants of eligible non-participants.
  - But direct investigation of the way WIC mothers are selected suggests that this is very unlikely.
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WIC participants are negatively selected in terms of almost all observables.

- Bitler and Currie (2004) show using data from PRAMS that relative to other eligibles, participants are more likely to be obese, more likely to smoke, less likely to have fathers listed on the birth certificate, more likely to be on public assistance, less likely to have a bathroom in the house, etc. etc.
  - Bitler, Currie, and Scholz (2003) show that the relatively higher income women made eligible by Medicaid expansions are unlikely to participate. Overall, only 67% of eligible pregnant and post-partum women participate, and poorer women are more likely to participate.
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But WIC participants have more positive outcomes than other eligible women:

- E.g. relative to other Medicaid mothers, the WIC mothers are only 73 percent as likely to have a low birth weight baby, and their infants are 86 percent as likely to spend time in an ICU.
  - Among teen Medicaid mothers, the comparable figures are 63 percent and 83 percent.
  - Negative selection makes it likely that these are *underestimates* of the true effects!
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## Much less information is available about the effects of WIC on young children

- Currie (2003) reviews six studies suggesting that WIC discourages breastfeeding by providing formula, though two studies suggest that counseling can increase breast feeding initiation.
  - Recent efforts to increase the value of the WIC package given to nursing mothers may also encourage breast feeding.
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## Children 1-4 are the fastest growing group of WIC participants.

- But only 38% of eligible children participate and participation falls off sharply at age 1 when children must be recertified.
  - Many studies show that WIC increases consumption of target nutrients and reduces anemia (see Currie, 2003 for a review).
  - Some of these studies have strong designs (e.g. following children before and after entry into the program).
  - Indeed the introduction of WIC may be responsible for a huge decline in the incidence of anemia among young children since the mid-70s.
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With the decline in the incidence of nutrient deficiencies, attention has shifted to obesity

- The CDC (1996) used data from NHANES III and found no significant relationship between WIC and overweight.
  - Bitler and Currie (2004) find that WIC participation at age 4 is associated with a lower risk of BMI > 85 p'tile using data from the 1996 and 2001 SIPP.
  - So no evidence that WIC causes overweight and it may help.
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## Questions have been raised about mechanisms

- The value of the package (aside from formula) is small
- It is mandatory that nutrition education be offered but it is not mandatory that it be consumed
- WIC is often bundled with other services (e.g. health clinics)

Three studies from the 80s show that WIC increases the consumption of target nutrients among pregnant women. Other studies show increases in target nutrient intake among children. Suggests that increases in nutrient intakes may in fact be responsible for positive effects.

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## Summary

- WIC is a relatively inexpensive program with a broad reach
  - It has been successful in improving the health of infants and children
  - Continued attention to promoting breast feeding (discouraging formula?), nutrition education, and improving food packages (e.g. recent mandates including more fresh fruits and vegetables) will make the program better.
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## Selected References

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