The national Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides nutrition education, growth monitoring, breastfeeding promotion and support, and food to low-income pregnant or postpartum women, infants, and children aged <5 years. Several studies have linked WIC services with improved maternal and infant health outcomes (1–3). Most population-based studies have lacked information needed to identify eligible women who are not receiving WIC services and might be at risk for poor health outcomes. This report uses multistate, population-based 2007–2008 survey data from CDC’s Pregnancy Risk Assessment Monitoring System (PRAMS) and California’s Maternal and Infant Health Assessment (MIHA) to estimate how many women were eligible but not enrolled in WIC during pregnancy and to describe their characteristics and their prevalence of markers of risk for poor maternal or infant health outcomes (4–6). Approximately 17% of all women surveyed were eligible but not enrolled in WIC during pregnancy. The proportion of women eligible for WIC and WIC participation rates varied by state. WIC participants had higher prevalences of markers of risk for poor maternal or infant health outcomes than eligible nonparticipants, but both groups had higher prevalences of risk markers than ineligible women, suggesting that many eligible women and their children might benefit from WIC services. The results of this analysis can help identify the scope of WIC outreach needed to include more eligible nonparticipants in WIC and whom to target.

This study’s sample included 71,267 women who participated in CDC’s PRAMS survey in 26 states and New York City, and 6,435 women who participated in California’s MIHA during 2007 or 2008 (Table 1). The two separate surveillance systems, PRAMS and MIHA, conduct annual, population-based mail surveys of women with recent live births sampled from birth certificates, with telephone follow-up of nonrespondents. The surveys used in this study include many similar questions, use similar methods (7), and have response rates of at least 65%.

Women reporting WIC participation at any time during their most recent pregnancies were classified as WIC participants. WIC eligibility requires a household income ≤185% of the federal poverty level (FPL)* or participation in another program (e.g., Medicaid) with similar income criteria. WIC nonparticipants were considered eligible if they reported incomes ≤185% FPL in the survey or if the birth certificate indicated Medicaid payment for prenatal care or delivery. Nonparticipants in WIC or Medicaid with incomes >185% FPL were considered ineligible. Women with missing information on WIC enrollment, insurance, or income (n = 1,653) were excluded, yielding a final sample of 76,049 women, which is representative of a total of 4,023,136 live births to resident women in these states, approximately half of all births in the United States during 2007–2008.

WIC participants and eligible nonparticipants as a proportion of all women delivering a live infant and as a percentage of all eligible women delivering a live birth were examined overall, then in each state. In the overall sample, WIC participants, eligible nonparticipants, and ineligible women were then compared on social characteristics important for targeting programs (e.g., race/ethnicity and language) or for assessing potential need for WIC services, as indicated by well-documented markers of risk for adverse maternal or infant health outcomes (4–6) (Table 2). Markers of risk included 1) having less than a high school education or being aged <18 years, 2) having delivered four or more live infants, 3) being unmarried at time of delivery, 4) being poor (income ≤100% FPL), 5) having Medicaid or no health-care coverage before pregnancy, 6) having no prenatal care in the first or second trimester, 7) having an unintended pregnancy, 8) being either underweight or obese before pregnancy, 9) smoking before pregnancy, and 10) having a history of delivering an infant preterm (before 37 weeks completed gestation) or of low birth weight (<2,500 g) (4,5). Finally, the percentage of women in each group with one, two, three, or four or more of the risk markers was examined. Prenatal health-care coverage was not included in the sum of the risk markers because it was used to define the WIC groups (Table 2). All estimated counts, percentages, and 95% confidence intervals were weighted to represent all live births in the participating states using statistical survey procedures that account for complex sample design.

Among all women surveyed, 46% were WIC participants, approximately 17% were classified as eligible nonparticipants (Table 1), and 37% were classified as ineligible (Table 2). Variation by state was evident in the percentage of all women delivering a live infant who were enrolled in WIC during pregnancy, from a low of 28% in Utah to a high of 57% in Oklahoma, and in the percentage of all women classified as

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*FPL for a family of four was $20,650 in 2007 and $21,200 in 2008, and 185% of FPL was $38,203 in 2007 and $39,220 in 2008. Additional information on WIC eligibility requirements is available at http://www.fns.usda.gov/wic. Additional information on the FPL is available at http://aspe.hhs.gov/poverty/figures-fed-reg.cfm.
Overall, the risk characteristics of WIC participants and eligible nonparticipants differed from those of ineligible women (Table 2). WIC participants generally appeared to be at greater social and economic disadvantage, as measured by indicators of risk for delivering a preterm or low birth weight infant, than were eligible nonparticipants. WIC participants and eligible nonparticipants were more disadvantaged than ineligible women, as reflected by their low incomes and the proportion of women who had <12 years of education, were aged <18 years, had four or more live births, were unmarried, had Medicaid or no health-care coverage before pregnancy, or initiated prenatal care in the third trimester or not at all (Table 2). WIC participants and eligible nonparticipants also had higher prevalences of other health risks than ineligible women, as reflected, for example, by prepregnancy obesity, WIC-eligible but who were not enrolled, from a low of 11% in Rhode Island to a high of 31% in Utah (Table 1). The proportion of all eligible women enrolled in WIC was approximately 74% overall, varying from a low of 48% in Utah to a high of 83% in California (Table 1).

Nearly one fifth (19%) of WIC participants were non-Hispanic blacks and 39% were Hispanics, compared with 14% and 21% of eligible nonparticipants and 5% and 7% of ineligible women, respectively (Table 2). Conversely, WIC participants included a lower proportion of non-Hispanic white women (35%) than was found among eligible nonparticipants (57%), or among ineligible women (76%). Approximately 25% of WIC participants completed the survey in Spanish, compared with 12% of eligible nonparticipants and <2% of ineligible women.
smoking before pregnancy, and a previous low birth weight or preterm birth.

WIC participants and eligible nonparticipants appeared to be at risk for poor maternal or infant outcomes, based on markers of risk (Table 2). Approximately 91% of eligible nonparticipants had at least one risk marker, and 75% reported at least two markers, compared with 97% and 90% of WIC participants, respectively. Among eligible nonparticipants, 36% reported four or more risk markers, compared with 54% of WIC participants. WIC-ineligible women reported markedly fewer risk characteristics than women in the other two groups.

Reported by

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The results of this analysis indicate that, although WIC covered most eligible women overall and in many states during 2007–2008, an estimated 662,800 eligible women were not enrolled in WIC in the 27 states examined. The proportion of eligible women who were enrolled in WIC varied widely by state. Overall, the findings indicate that WIC is enrolling high-risk women and reveal that most eligible nonparticipants also have social and economic characteristics that repeatedly have been linked to adverse maternal or infant health outcomes. In addition, WIC participants and eligible nonparticipants have higher rates of other health risks, such as prepregnancy obesity and previous poor birth outcomes, than ineligible women. Three quarters of eligible nonparticipants had two or more markers of risk; more than one third had four or more. Although WIC's services cannot address all relevant risks, promoting and supporting more adequate nutrition might improve some health outcomes among vulnerable women and their children during the critical periods of pregnancy and infancy, with potentially lifelong benefits (8–10). Referrals by WIC to outside services, such as prenatal care and smoking cessation programs, also could benefit women, infants and children in the long run.

The findings in this report are subject to at least four limitations. First, the study relied on unverified self-reports of income and WIC participation. Second, PRAMS and MIHA measure average income over 1 year, which might underestimate WIC and WIC participation. Third, health-care coverage can change during pregnancy, affecting the ability to determine eligibility for WIC. Finally, although survey response rates were at least 65%, differences might exist between the respondents and nonrespondents. This concern was mitigated through nonresponse adjustments. This concern was mitigated through nonresponse adjustments.
weighting of the survey data, by which differing weights were assigned to demographic groups with significantly different response rates.

The large size of the WIC-eligible population reflects levels of poverty (<100% FPL) and near-poverty (101%–185% FPL) around the time of pregnancy, confirming previous findings that many women giving birth in the United States are poor or near-poor (7). Given current economic conditions, it is possible that many women and infants continue to be socio-economically vulnerable and hence in need of WIC services. These multistate findings suggest that expanded outreach to eligible nonparticipants should be considered. The information in this study can help identify the scope of WIC outreach needed and whom to target.

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