

PRAMS PERSPECTIVES

A Pregnancy Risk Assessment Monitoring System Quarterly Report V.1 No.1

Barriers to Adequate Prenatal Care in Utah

Background

Inadequate prenatal care (PNC) is a risk factor for low birth weight babies and other adverse pregnancy outcomes. Women who receive adequate PNC have a reduced risk for low birth weight infants, maternal and infant morbidity and mortality by identifying high-risk pregnancies early in gestation and providing risk reduction interventions. According to the U.S. Department of Health and Human Services, risk assessment at the first prenatal visit can identify as many as 80% of women at high risk of having a low birth weight infant¹. This risk reduction is particularly beneficial to medically and socio-economically high-risk women².

What is PRAMS?

Data in this newsletter were provided by the Utah Pregnancy Risk Assessment Monitoring System (PRAMS). PRAMS is an ongoing, population-based risk factor surveillance system designed to identify and monitor selected maternal experiences that occur before and during pregnancy and experiences of the child's early infancy. Each month, a sample of approximately 200 women, two to four months postpartum, is selected. The sample is stratified based upon race and birth weight so that inferences and comparisons about these groups can be determined. The results are weighted for sample design and non-response.

PRAMS is intended to help answer questions that birth certificate data alone cannot answer. Data will be used to provide important information that can guide policy and other efforts to improve care and outcomes for pregnant women and infants in Utah. Women were asked questions about prenatal care, breastfeeding, smoking and alcohol use, physical abuse, and early infant care.

The PRAMS data reported here represent all live births to Utah residents in 1999. A total of 2140 mothers were selected to participate in the project and 1540 mothers responded for a response rate of 72%. Survey results were weighted for non-response so that analyses could be generalized to the entire population of Utah women delivering live births.

Comprehensive PNC includes maternal risk assessment, risk reduction or treatment for medical conditions, and education. Prenatal care also provides an opportunity to address behavioral risks that contribute to adverse pregnancy outcomes, such as smoking, alcohol use, and poor nutrition³.

Research has shown that the barriers to receiving PNC are diverse and range from demographic to psychosocial. Studies have cited unwanted or unplanned pregnancies, no regular provider of medical care before pregnancy, lower education levels, multi-parity, lack of transportation, lack of childcare, inability to obtain an appointment, less than 20 years of age⁴, having Medicaid or no insurance, being unemployed, being unmarried⁵, fear of disclosure of the pregnancy⁶, the woman's perception of the importance of PNC⁷, and timing of recognition of the pregnancy as barriers to receiving early and adequate PNC.

Healthy People 2010 (HP2010) is a national health promotion and disease prevention agenda developed by the U.S. Department of Health and Human Services. Its goals serve to improve the health of all U.S. inhabitants by the year 2010. There are two HP2010 goals for PNC: for 90% of pregnant women to begin PNC in the first trimester of pregnancy, and for 90% of pregnant women to obtain early and adequate PNC. The U.S. baseline measures for these outcomes in 1998 were 83% for first trimester entry and 74% for early and adequate PNC⁸. In 1998 the rate of first trimester entry into PNC in Utah was 80%³ and the rate for early and adequate PNC was 63.5%.

The UnitedHealth Group State Health Ranking Report of 2000 ranked Utah 49th in the nation for adequacy of PNC⁹.

Ranks were based on National Center for Health Statistics 1998 data. Adequacy was determined using the modified Institute of Medicine (Kessner) index¹⁰, which defines adequate care as having the first PNC visit occur in the first trimester and having a cumulative number of PNC visits during the remainder of the pregnancy. For example, a woman with a pregnancy of 36 weeks or greater should be seen at least nine times in order to be classified as having received adequate PNC.

Methodology

For this report, adequacy of PNC was determined using the Adequacy of Prenatal Care Utilization (APNCU) Index developed by Milton Kotelchuck¹¹. THE APNCU Index characterizes PNC utilization based on two factors: the timing of initiation of PNC and the frequency of PNC visits once care has begun. The APNCU Index differs from the Kessner Index in that a woman can have second trimester entry into PNC, but still achieve adequate PNC if the number of visits is deemed sufficient after PNC entry. The APCNU Index was used, as it was believed to be a more accurate assessment of adequate PNC. Both the APCNU and the modified Kessner index demonstrate that over one-third of Utah women receive inadequate PNC.

The APNCU Index has four categories: inadequate, intermediate, adequate, and adequate plus. For this report, these categories were collapsed into two levels: adequate or adequate plus PNC was reported as adequate; and inadequate or intermediate PNC was reported as inadequate. The APNCU Index was calculated from 1999 birth certificate data for PRAMS respondents.

PRAMS data from 1999 were analyzed using chi-squared tests to identify significant barriers to early and adequate PNC.

Prenatal Care in Utah

Overall, in 1999, 81.1% of women entered PNC in the first trimester, 17.7% entered care in the second or third trimester, and 0.2% said they did not receive PNC during their pregnancies. Of all Utah women, 83.2% said they received PNC as early in their pregnancy as they wanted, 16.3% indicated they did not receive care as early in their pregnancy as they wanted, and 0.5% indicated that they did not want PNC.

Figure 1 illustrates the adequacy of PNC in Utah. In 1999, 63% of women received adequate PNC, 12.5% received inadequate care due to late entry and 24.6% received inadequate PNC due to an insufficient number of visits despite appropriate entry time.

Figure 1. Adequacy of Prenatal Care in Utah, 1999 Utah PRAMS Data.

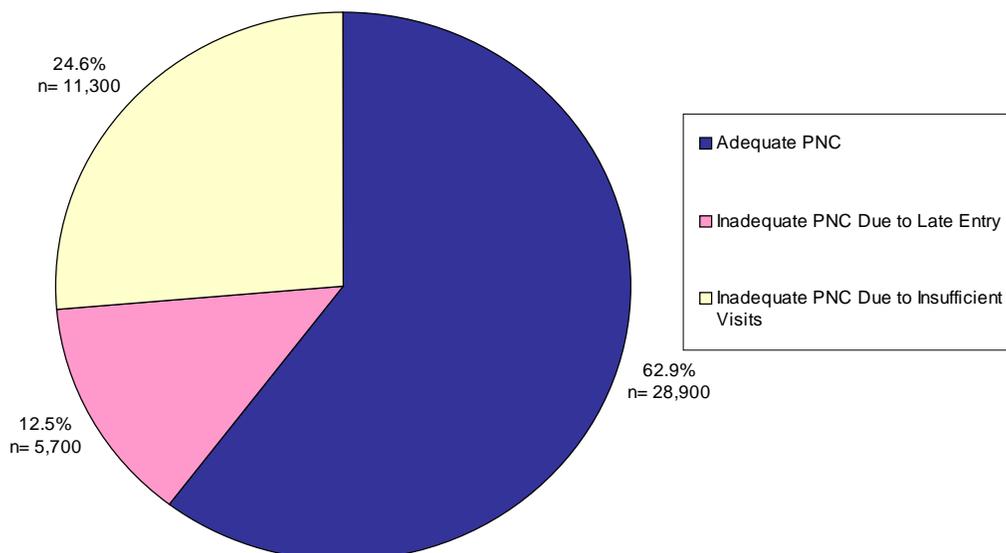
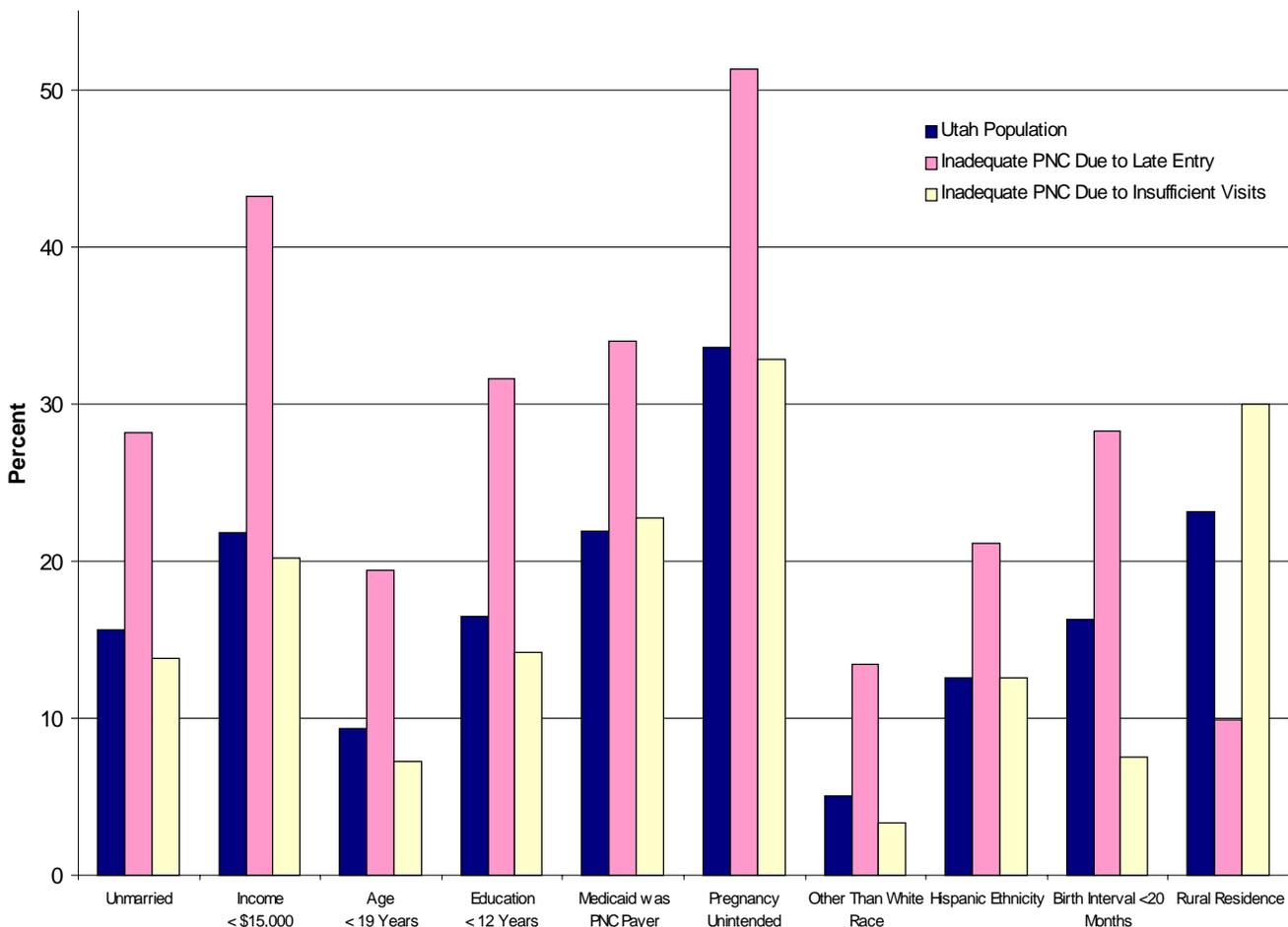


Figure 2 compares the Utah birth population distribution to the inadequate PNC population distributions for selected risk factors. Women who received inadequate PNC due to insufficient visits closely resemble the Utah birth population, except with regard to birth interval and rural residence. Women with inadequate PNC due to late entry were strikingly different than the Utah birth population in that all selected risk factors except rural residence were more prevalent in this group. Women who received inadequate care due to late entry were 2.2 times more likely to deliver a low birth weight baby than were women who received inadequate care due to insufficient visits.

Figure 2. Percentage of Women With Selected Maternal Risk Factors in All Women, Women with Inadequate PNC Due to Late Entry, and Women with Inadequate PNC Due to Insufficient Visits, 1999 Utah PRAMS Data.



Inadequate Prenatal Care Due to Insufficient Visits

Overall, 11,300 women (24.6%) who delivered a live birth in Utah received inadequate care due to an insufficient number of PNC visits. These women did initiate PNC in the first trimester of pregnancy. As shown in Table 1, race and birth interval were significant barriers to inadequate PNC due to an insufficient number of visits.

- White women were more likely to receive an insufficient number of PNC visits (25.1%).
- Of women whose last delivery occurred between 21 and 36 months before the current delivery, 32.3% did not receive a sufficient number of PNC visits.

Table 1. Barriers to Sufficient Number of Prenatal Care Visits, 1999 Utah PRAMS Data.

| Maternal Characteristics | Percent of Women With Inadequate PNC Due to Insufficient Visits (95% Confidence Interval) | Population Estimate | P-Value |
|---|--|----------------------------|----------------|
| Total Birth Population | 24.6 + 2.8 | 11,300 | |
| Maternal Age | | | NS |
| < 19 | 18.6 + 8.1 | 800 | |
| 20 - 34 | 24.4 + 3.1 | 9,000 | |
| 35 + | 32.6 + 9.8 | 1,600 | |
| Education Level | | | NS |
| Less than High School | 21.9 + 7.5 | 1,700 | |
| Completed High School | 25.9 + 5.2 | 3,500 | |
| More than High School | 25.0 + 3.8 | 6,200 | |
| Race | | | <0.05 |
| White | 25.1 + 3.0 | 11,000 | |
| Other Than White | 16.2 + 4.3 | 400 | |
| Hispanic Ethnicity | | | NS |
| Hispanic | 25.0 + 9.3 | 1,400 | |
| Non-Hispanic | 24.5 + 2.9 | 9,900 | |
| Marital Status | | | NS |
| Married | 25.1 + 3.1 | 9,800 | |
| Unmarried | 22.0 + 7.1 | 1,600 | |
| Geographic Area | | | NS |
| Urban | 20.8 + 2.3 | 7,400 | |
| Rural | 28.3 + 8.8 | 3,000 | |
| Annual Household Income | | | NS |
| < \$15,000 | 23.0 + 6.2 | 2,300 | |
| \$15,000 - 35,000 | 25.5 + 5.1 | 3,900 | |
| \$35,000 - 50,000 | 23.9 + 5.9 | 2,500 | |
| > \$50,000 | 26.6 + 6.2 | 2,700 | |
| PNC Payer Type | | | NS |
| Private/Group Insurance | 23.6 + 3.3 | 7,300 | |
| Medicaid | 25.3 + 6.3 | 2,500 | |
| Indian Health Service, Other, or No Insurance | 28.4 + 10.4 | 1,400 | |
| Pregnancy Intention | | | NS |
| Intended | 24.5 + 3.5 | 7,500 | |
| Unintended | 23.4 + 5.0 | 3,600 | |
| Smoked Cigarettes in 3 Months Before Pregnancy | | | NS |
| Yes | 24.8 + 7.3 | 1,600 | |
| No | 24.4 + 3.1 | 9,600 | |
| Drank Alcohol in 3 Months Before Pregnancy | | | NS |
| Yes | 29.4 + 6.4 | 3,100 | |
| No | 23.4 + 3.2 | 8,300 | |
| Number of Previous Live Births | | | NS |
| None | 22.0 + 4.3 | 3,700 | |
| 1 - 4 | 26.3 + 3.8 | 7,200 | |
| 5 or more | 22.7 + 14.0 | 400 | |
| Pregnancy Recognition | | | NS |
| < 5 weeks | 26.9 + 4.3 | 6,100 | |
| 5 - 8 weeks | 24.0 + 4.7 | 4,000 | |
| 9+ weeks | 18.8 + 6.7 | 1,200 | |
| Birth Interval | | | <0.01 |
| < 20 months | 12.8 + 7.0 | 500 | |
| 21 - 36 months | 32.3 + 7.0 | 3,700 | |
| 37+ months | 26.2 + 6.5 | 2,800 | |

NS = Not Significant

Inadequate Prenatal Care Due to Late Entry

Overall, 5,700 women (12.5%) who delivered a live birth in Utah received inadequate care due to PNC initiation after the first trimester. As shown in Table 2, maternal age, level of education, race, marital status, geographic area, household income, PNC payer type, intention of the pregnancy, and smoking before pregnancy were significant barriers to inadequate care due to not entering PNC in the first trimester.

- Among women who were under 19 years of age, 30.9% received inadequate PNC due to late initiation, compared with 5.7% of women older than 35 years of age.
- Of Utah women with less than a high school education, 23.8% did not receive early and adequate PNC, compared with 9.3% of women with more than a high school education.
- Thirty-three percent of other than white women did not receive early and adequate PNC.
- Unmarried women (24.7%) were more likely to receive inadequate care due to late entry than were married women (10.2%).
- Women residing in Utah's urban areas (15.8%) were more likely to receive inadequate PNC due to late entry than women residing in rural areas (5.5%).
- Of women with an annual household income less than \$15,000, 24.1% did not receive adequate PNC due to late entry compared with 5.5% of women with an annual income greater than \$50,000.
- About 23% of Utah women whose PNC was paid by Medicaid received inadequate PNC due to late initiation, compared with 8.0% of women whose PNC was covered by private insurance.
- Women with unintended pregnancies (17.9%) were more likely to receive inadequate PNC due to late entry than women whose pregnancies were intended (8.5%).
- Of women who smoked cigarettes in the three months before the pregnancy, 21.1% did not receive adequate PNC due to late entry compared with 10.7% of women who did not smoke.

Table 2. Barriers to First Trimester Prenatal Care, 1999 Utah PRAMS Data.

| Maternal Characteristics | Percent of Women With Inadequate PNC Due to Late Entry (95% Confidence Interval) | Population Estimate | P-Value |
|-------------------------------|--|---------------------|---------|
| Total Birth Population | 12.5 + 2.4 | 5,700 | |
| Maternal Age | | | < 0.001 |
| < 19 | 30.9 + 11.5 | 1,300 | |
| 20 - 34 | 11.1 + 2.5 | 4,100 | |
| 35 + | 5.7 + 4.3 | 300 | |
| Education Level | | | <0.01 |
| Less than High School | 23.8 + 8.5 | 1,800 | |
| Completed High School | 11.9 + 4.3 | 1,600 | |
| More than High School | 9.3 + 2.6 | 2,300 | |
| Race | | | <0.01 |
| White | 11.2 + 2.4 | 4,900 | |
| Other Than White | 32.6 + 9.6 | 800 | |
| Hispanic Ethnicity | | | NS |
| Hispanic | 21.3 + 9.9 | 1,200 | |
| Non-Hispanic | 11.2 + 2.2 | 4,500 | |

Table 2 (cont.). Barriers to First Trimester Prenatal Care, 1999 Utah PRAMS Data.

| Maternal Characteristics | Percent of Women With Inadequate PNC Due to Late Entry (95% Confidence Interval) | Population Estimate | P-Value |
|---|---|----------------------------|----------------|
| Marital Status | | | <0.01 |
| Married | 10.2 + 1.2 | 4,000 | |
| Unmarried | 24.7 + 8.5 | 1,800 | |
| Geographic Area | | | <0.01 |
| Urban | 15.8 + 2.3 | 5,600 | |
| Rural | 5.5 + 4.0 | 600 | |
| Annual Household Income | | | <0.001 |
| < \$15,000 | 24.1 + 6.7 | 2,400 | |
| \$15,000 - 35,000 | 8.0 + 3.2 | 1,200 | |
| \$35,000 - 50,000 | 10.5 + 4.5 | 1,100 | |
| > \$50,000 | 5.5 + 3.8 | 600 | |
| PNC Payer Type | | | <0.001 |
| Private/Group Insurance | 8.0 + 2.3 | 2,500 | |
| Medicaid | 22.5 + 6.4 | 2,300 | |
| Indian Health Service, Other, or No Insurance | 18.6 + 9.8 | 900 | |
| Pregnancy Intention | | | <0.01 |
| Intended | 8.5 + 2.3 | 2,600 | |
| Unintended | 17.9 + 5.2 | 2,800 | |
| Smoked Cigarettes in 3 Months Before Pregnancy | | | <0.05 |
| Yes | 21.1 + 8.0 | 1,400 | |
| No | 10.7 + 2.4 | 4,200 | |
| Drank Alcohol in 3 Months Before Pregnancy | | | NS |
| Yes | 15.4 + 5.8 | 1,600 | |
| No | 11.2 + 2.6 | 4,000 | |
| Number of Previous Live Births | | | NS |
| None | 15.5 + 4.3 | 2,600 | |
| 1 - 4 | 10.7 + 2.9 | 2,900 | |
| 5 or more | 10.4 + 10.3 | 200 | |
| Pregnancy Recognition | | | NS |
| < 5 weeks | 10.2 + 3.1 | 2,300 | |
| 5 - 8 weeks | 11.4 + 4.1 | 1,900 | |
| 9+ weeks | 20.4 + 7.6 | 1,400 | |
| Birth Interval | | | NS |
| < 20 months | 17.7 + 9.1 | 800 | |
| 21 - 36 months | 9.6 + 4.9 | 1,100 | |
| 37+ months | 7.2 + 4.2 | 800 | |

NS = Not Significant

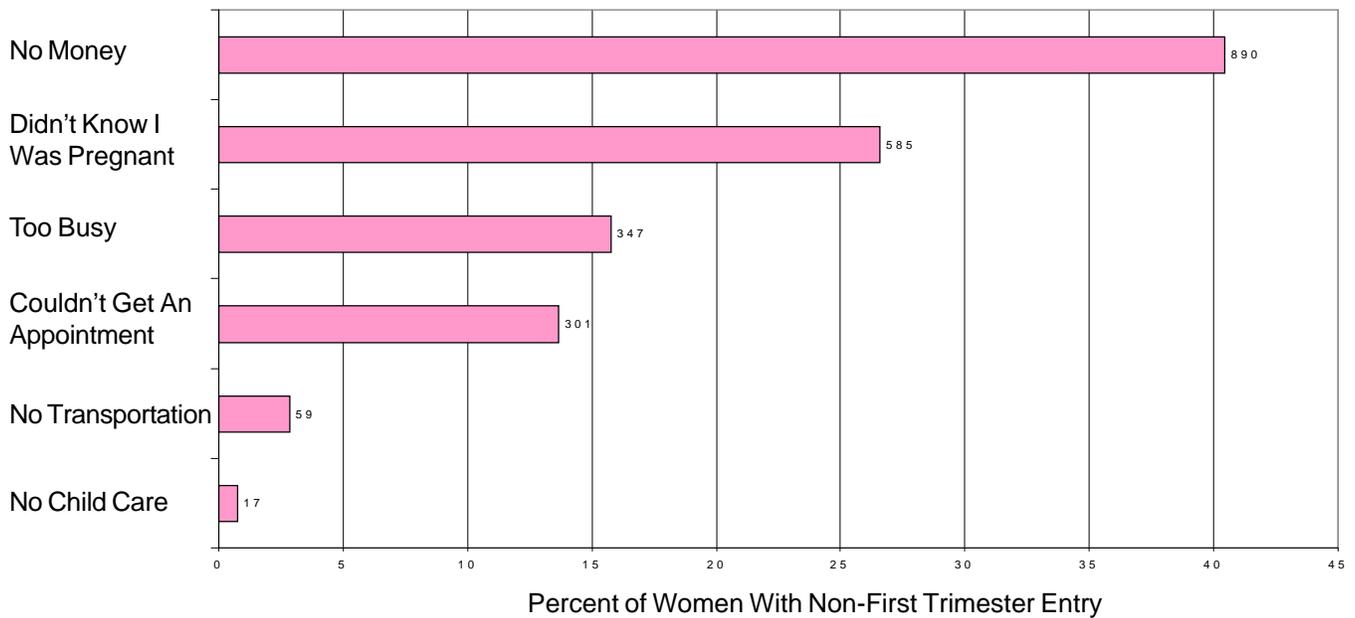
Self-Reported Barriers to Early Prenatal Care

To assess barriers to early PNC, PRAMS respondents were asked the question "Did you get PNC as early in your pregnancy as you wanted?" Those who responded negatively to this question were further asked to select items from a list of barriers to getting care as early as they wanted.

Of women noted to have inadequate PNC due to late entry, 38.9%, about 2,200 Utah women, said they did not receive PNC as early in their pregnancy as they wanted. Conversely, 61.1% of women who did not receive adequate PNC due to late entry said they received PNC as early as they wanted. It appears that many Utah women were not aware that first trimester PNC is important. Figure 3 illustrates self-reported PNC barriers for women with inadequate PNC due to late entry.

The largest barrier to early PNC reported by Utah women with late entry was lack of money. Not knowing of the pregnancy and being too busy to get PNC were also barriers to first trimester PNC.

Figure 3. Self Reported Barriers to Early Prenatal Care Among Women With Inadequate Prenatal Care due to Late Entry, 1999 Utah PRAMS Data.



Summary/Recommendations

There is definite need for improvement in the entry and adequacy of PNC in Utah. At 82% for first trimester entry into PNC and 63.9% for early and adequate PNC, Utah falls short of the Healthy People 2000 goal of 90% for both categories.

This study found that there are two aspects of the problem with adequate PNC in Utah: late entry and early entry with insufficient PNC visits. Women who received inadequate care due to late entry are generally a higher risk group than those who had an insufficient number of PNC visits. As this population is 2.2 times more likely to deliver a low birth weight infant, it appears that these women would likely benefit the most from early and adequate PNC.

Utah needs to explore the reasons that the largest portion of those with inadequate PNC is attributable to an insufficient number of PNC visits. This may prove difficult to clarify, as the demographic distribution of these women is so similar to the general Utah birth population. This issue could be due to any or a combination of factors including: women's knowledge, attitudes and beliefs about PNC, obstetrical practices, or health system factors such as availability of appointments or a variety of disincentives to PNC visits.

Further study is needed to look at health care system practices to determine what changes are needed that would enable more pregnant women to receive early and continuous PNC. Further study is also needed to evaluate the impact of Utah's Baby Your Baby and Medicaid programs and other outreach activities on high-risk populations. Utah also needs to investigate whether some of its programs have become stale and need a fresher look. Focus groups of pregnant women and prenatal providers should be conducted to gain more insight on barriers to PNC entry and utilization and possible solutions to addressing these issues. One method to combat Utah's low adequacy of PNC rates is to educate women as to the importance of early and continuous PNC before they become pregnant.

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Publishing information

This publication was supported by Award Number U50/CCU817126-02 from the Centers for Disease Control and Prevention (CDC). Its contents are solely the responsibility of the authors and do not necessarily represent the official views of CDC.

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