Adequate Prenatal Care and Birth Outcome: A three-year birth file analysis and A provider perspective

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PurposE
This study examines the impact of demographics, place of residence, birth-year and systems of care on adequate prenatal care and birth outcomes for the uninsured/underinsured in California’s San Joaquin Valley.

Two Phase Study:
Phase I: examined the effects of demographics, place of residence and year of birth on adequate prenatal care and birth outcomes, i.e. low birth weight and pre-term births.
Phase II: examined the barriers to adequate prenatal care delivery for the uninsured/underinsured in terms of equity, access and quality in the San Joaquin Valley from the perspective of the prenatal providers’ staff.

Objectives
This study had four specific objectives:

1. Determine factors associated with adequate prenatal care, low birth weight and pre-term birth in the San Joaquin Valley region.
2. Determine the impact of prenatal care on pre-term birth and low birth weight.
3. Determine the relative importance of place of residence and demographic characteristics in determining differences in prenatal care, pre-term birth and low birth weight.
4. Explore roles of care accessibility and provider care management systems.

Data Analysis Strategy

Qualitative analysis:
- Variables approached to the open ended questions.
- Inductive approach combining health science and sociological perspectives.

Quantitative Analysis - SPSS 15.0 for Windows.
- Descriptive Approaches - Analysis of the three-year trend.
- Quantitative Analysis - SPSS 15.0 for Windows.

Methods - Quantitative

Data:
The 2002, 2003 and 2004 California Birth Statistical Master files were used to analyze inadequate prenatal care. The data from all three-year files were merged into a single file for the purpose of analysis. The study limited its focus to the 8 counties of the San Joaquin Valley. There were a total of 182,478 cases with complete and comparable data.

Dependent Variables:
- Adequate Prenatal Care
- Pre-Term Birth
- Low Birth Weight

Adequate Prenatal Care Measurement:
Adequate prenatal care was measured with information from items recorded on birth certificates using the Kessner Index for adequate prenatal care (Kessner, Singer, Kahl, & Schlesenger, 1973).

Pre-Term Birth:
Premature birth, as defined by Pre-Stats, was measured as a live birth before 37 completed weeks gestation (National Center for Health Statistics, 2005).

Low Birth Weight:
Low birth weight, as defined by PreStats, is a baby weighing less than 2500 grams (5.5 lbs.).

Independent Variables:
- Race/Ethnicity of the Mother: (White, African American, American Ind., Asian/Pacific Islander and Hispanic)
- Maternal Age: (< 20, 20-24, 25-29, 30-34, 35-39, and 40+)
- Payment Source: (Medi-Cal, other public, private/HMO and self-pay/no pay)
- Nativity of the Mother: (US, Mexico and Other Non-US)
- Education Level: (Less than High School, High School Grad, Some College and not known)
- Place of Residence: Place of residence - two levels:
  - The county level which included eight (8) San Joaquin Valley counties
  - Sub-county level which included neighborhoods.

All independent variables were measured on a dichotomous scale 1 = presence of the characteristic and 0 = absence of the characteristic.

Methods - Qualitative Data:
Providers’ perspective (front office staff) data was collected from 3 counties in the Northern San Joaquin Valley. A total of 41 surveys were completed. 21 surveys were received from Community Health Centers, 14 from private practices, 3 from hospital outpatient services, 2 from rural health centers, and 1 from a community hospital.

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Three-Year Trend
While the percentage of women receiving inadequate prenatal care declined from 2002-2004, there was a slight but significant increase in pre-term births.

Impact of Demographics
Higher odds of pre-term births were associated with:
- the mother’s age
- place of residence

Low birth weight was positively associated with:
- being a woman of color
- younger than 20 years
- on Medi-Cal or other public insurance or self-pay
- non-US-born
- having less than high school education

Odds against low birth weight were associated with:
- Women who had single births
- adequate prenatal care
- Mexican or were US-born

Racial/Ethnic, Insurance, and Other Inequalities Persisted in Prenatal Care:
- Controlling for place of residence and year of birth, adequate prenatal care was associated with having private insurance, being born in the US or Mexico, and having a least a high school education
- Women of color, younger than 20 years, with Medi-Cal or other public coverage, and born outside the US (other than in Mexico) were at greatest risk for inadequate care
- Women of color, younger than 20 years, on Medi-Cal or other public insurance, and born outside the US (other than in Mexico) were at greatest risk for inadequate care

Payment Sources Analysis

<table>
<thead>
<tr>
<th>Payment Source</th>
<th>Inadequate Prenatal Care by Race/Ethnicity, 2002-2004</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medi-Cal</td>
<td>26.4%</td>
</tr>
<tr>
<td>Other Public</td>
<td>26.4%</td>
</tr>
<tr>
<td>Self Pay</td>
<td>25.0%</td>
</tr>
<tr>
<td>Other Public/HMO</td>
<td>18.2%</td>
</tr>
<tr>
<td>All others</td>
<td>18.2%</td>
</tr>
<tr>
<td>Self Pay</td>
<td>17.5%</td>
</tr>
<tr>
<td>Any Public/Other</td>
<td>16.6%</td>
</tr>
</tbody>
</table>

SUMMARY

This project was funded by the California Endowment.