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 births weight and pre-term births.

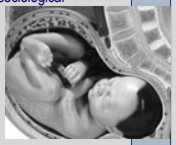
Phase II. examined the barriers to adequate prenatal care delivery for the uninsured/underinsured in terms of equity, access and quality in the San Joaquin Valley from the perspective of the prenatal providers' staff.

OBJECTIVES

- This study had four specific objectives:
  - Determine factors associated with adequate prenatal care, low birth weight and pre-term birth in the San Joaquin Valley region.
  - Determine the impact of prenatal care on pre-term birth and low birth weight.
  - Determine the relative importance of place of residence and demographic characteristics in determining differences in prenatal care, pre-term birth and low birth weight.
  - Explore roles of care accessibility and provider care management systems.

Data Analysis Strategy

- Qualitative analysis-
  - *Verbatim* answers 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.
Crude prevalence of the risk factors by place and time.
Differences in the place and time in the distribution of the dependent.
variables were examined using Pearson Chi square.

- Multivariate Approach-

Stepwise, logistic regression analyses was used to explore multivariate associations between the independent variables and adequate prenatal care, low birth weight and pre-term births.

The odds of having a particular outcome were modeled.

Unadjusted and adjusted estimates of the differences in the three dependent variables by county and by community cluster.

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:

Adequacy of prenatal care was measured with information from items recorded on birth certificates using the Kessner Index for adequate prenatal care (Kessner, Singer, Kalk, & Schlesinger, 1973).

- Pre-Term Birth:

Preterm birth, as defined by PeriStats, 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 PeriStats, 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 years)
  - Payment Source: (Medi-Cal, other public, private/HMO and self-pay/no pay)
  - Nativity of the Mother: (US, Mexico and Other Non-US)
  - Maternal Education: (Less than High School, High School Grad, Some College and not known)
  - Place of Residence: Place of residence- two levels:
    - The county level which involved eight (8) San Joaquin Valley counties
    - Cluster level which involved neighborhoods.

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

Methods- Qualitative Data:

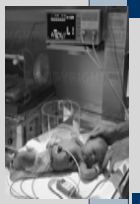
Providers' perspective (front office staff) data was collected from 3 counties in the Northern San Joaquin Valley.

- 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.

Quantitative 3-Year Findings

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.



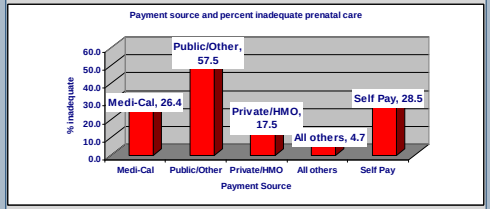
Impact of Demographics

Higher odds of pre-term births were associated with:
- the mother's age
- insurance status
- 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 and
- 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 Med-Cal or other public coverage, and born outside the US (other than in Mexico) were at greater risk for inadequate care



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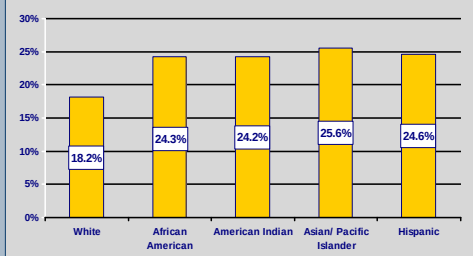
Inadequate Prenatal Care by Race/Ethnicity, 2002-2004



Impact of Place of Residence

- Place of residence made the difference in access to adequate prenatal care even after accounting for demographic characteristics.
- Adequacy of prenatal care ranged from lowest 59% to highest 87%, both in the same County.
- Better performance on prenatal care did not ensure lower rates of pre-term births.
- Better performance on prenatal care did not ensure lower rates of low-birth weight births.

Provider Perspectives on Prenatal Care Access and Outcomes

Short-staffing- Resulting in delays in obtaining appointments and affected the types of insurance accepted at clinics.

Staff Attitudes- Adherence to medical advice, self responsibility and value/belief systems, less on providers' capacity to identify and effectively engage with pregnant women around these differences.

Reimbursement- (denials, timeliness of payments, paperwork burdens) Noted differences in reimbursement rates between public and private insurance plans. Noted difficulties in obtaining approvals and receiving payments from public sources.

Language- Overall, 38% of all patients needed interpreter services.

Structural barriers- Factors associated with poverty, such as a lack of viable transportation to clinics and a lack of child care for the patient's other children.

Outreach- Nearly 90% of all sites agreed that outreach efforts would increase the number of women receiving adequate prenatal care.

SUMMARY

- Two-tiered system of Prenatal Care

Lower Tier: Poor, rural, immigrants, or otherwise disadvantaged, are served primarily in FQHC's and rural clinics tend to be receiving inadequate care.

Barrier to care- transportation, billing problems, language and childcare-issues.

Upper tier: Urban residents, the insured, high income, those who primarily see private providers and tend to be receiving adequate care.