

Making Sense of the High Infant Mortality Rate in Stanislaus County

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Stanislaus County

Health Services Agency

Public Health Division



Research Team

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Objectives of the Presentation

- Discuss methods and process that were used to study the high infant mortality rate in Stanislaus County.
- Identify factors that were associated with the high infant mortality rate in Stanislaus County.
- Describe challenges and successes in conducting the infant mortality study in Stanislaus County.
- Demonstrate how study results are being translated into prevention and program activities.

Overview of Presentation

- Part 1: Background
- Part 2: Major Causes of Infant Mortality
- Part 3: Gestational Age
- Part 4: Prenatal Care
- Part 5: Substance Use During Pregnancy
- Part 6: Other Topics
- Part 7: Challenges and Successes
- Part 8: Conclusions/Recommendations

Part 1:

Background



Purpose of the Study

- Identify policy and program interventions needed to decrease fetal and infant mortality in the county

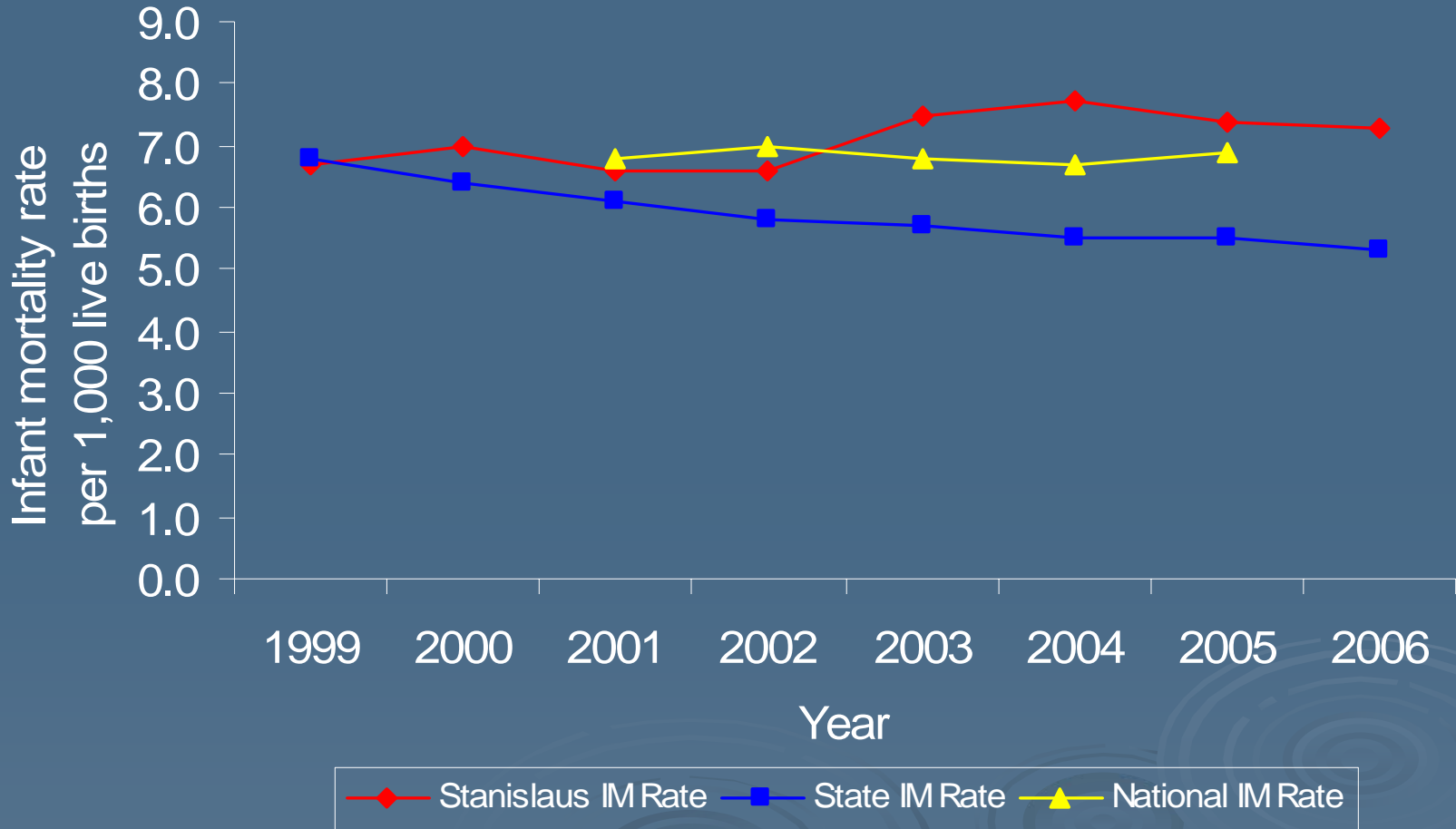


Health Status Ranking - 2006

HEALTH STATUS INDICATOR	Stanislaus	San Joaquin	Merced	Tuolumne	Santa Clara
Infant Deaths					
All Races	53	52	43	6*	14
Asian/Other	23*	32*	48*	12*	24
Black	34*	56*	36*	17*	31*
Hispanic	48	47	46*	39*	29
White	56	46	34*	8*	10
Low Birthweight Infants	38	46	37	3	36
Late or No Prenatal Care	21	52	58	7	17
Adequate/Adequate Plus Care	47	55	58	22	24
Births to Mothers (15-19 yrs)	46	49	50	15	19
Breastfeeding Initiation	48	49	43	24	26
Poverty (<18 yrs)	36	38	54	24	7

* Unreliable due to insufficient data

Infant Mortality Rates Stanislaus vs. CA (1999-2006)



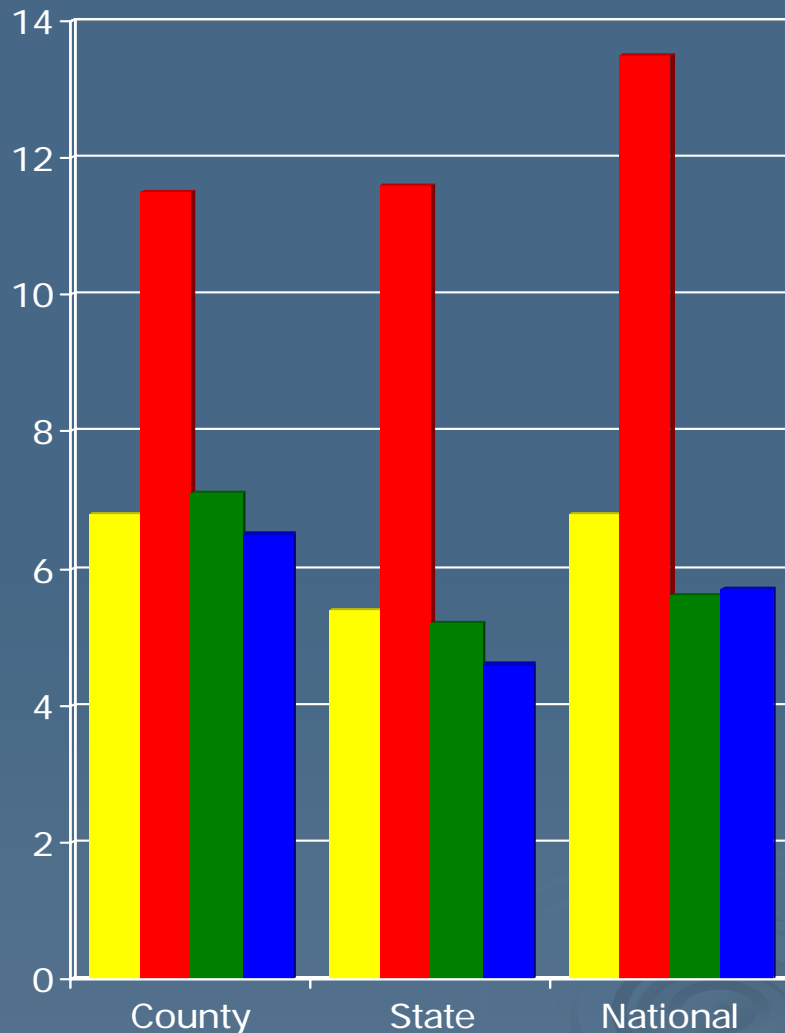
National Trends

- The infant mortality rate has either decreased or remained steady from 1958-2004, with the exception of a spike in 2002
- Infant mortality rates for Hispanics (5.6) is not statistically different than non-Hispanic Whites (5.7)
- Congenital malformations, low birthweight, and SIDS account for 45% of all infant deaths

County Trends & Rankings

- 2006 Trend Analysis report on last 15 years shows:
 - Increasing Infant Mortality trend in the County for Whites and Hispanics while decreasing at Region and State level
- In 2007 Stanislaus County ranks (58th being worst):
 - 47th worst for overall Infant Mortality
 - 43rd worst for White infant deaths
 - 56th worst for Hispanic infant deaths
 - 40th worst for Black infant deaths

2007 Stanislaus County Infant Mortality Rate by Race



- National Objective for IM is a rate of 4.5
- Stanislaus County's rate is higher for Hispanics and Whites than the State and National rate



Study Activities

- Major activities
 - Chart abstraction (study versus controls)
 - Analysis of current birth death cohort data
 - Fetal Infant Mortality Review Interviews
- Other activities
 - Focus Groups
 - Trend Analysis Report
- Combined findings from all of these sources to validate and be more comprehensive

Chart Abstraction

➤ Information Obtained

- Demographics
- Maternal medical history
- Patterns and adequacy of prenatal care
- Birth complications or problems during pregnancy, delivery, and first year of life

Chart Abstraction

➤ Study Sample

- 2005
 - 53 Total Deaths:
 - 21 Fetal Deaths
 - 15 Infant Deaths < 24 hours
 - 17 Infant Deaths > 24 hours
 - 0 Controls
- 2006
 - 75 Total Deaths:
 - 27 Fetal Deaths
 - 20 Infant Deaths < 24 hours
 - 28 Infant Deaths > 24 hours
 - 75 Controls



Chart Abstraction Results: Descriptives (75 Cases Total)

➤ Age

- Higher percentage of teens in study subjects
 - 24% (18) of study subjects; 14.6% (11) of controls

➤ Marital Status

- Higher percentage of women who experienced an infant death were single than control subjects
 - Over 46% (13) of infant deaths vs. 26.7% (20) of controls were single

➤ Education

- Data missing for many

Chart Abstraction Results: Descriptives (75 Cases Total)

➤ Zip codes

- Study subjects and controls are spread out

➤ Employment

- 29% (22) of study subjects and 25% (19) of the controls are employed

➤ Health Insurance

- Over 60% of study subjects and controls are on Medi-Cal & Medi-Cal Managed Care

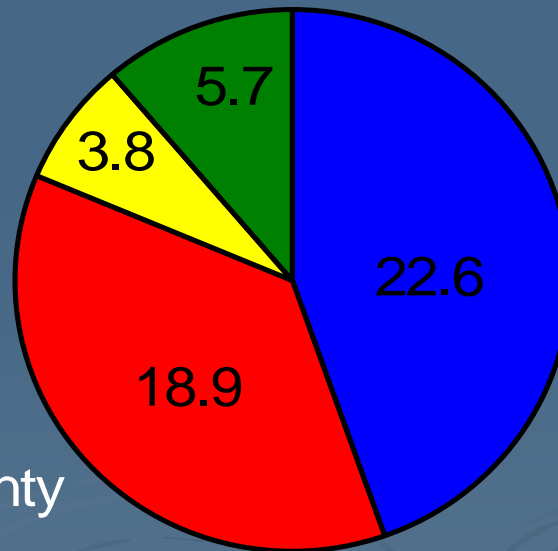
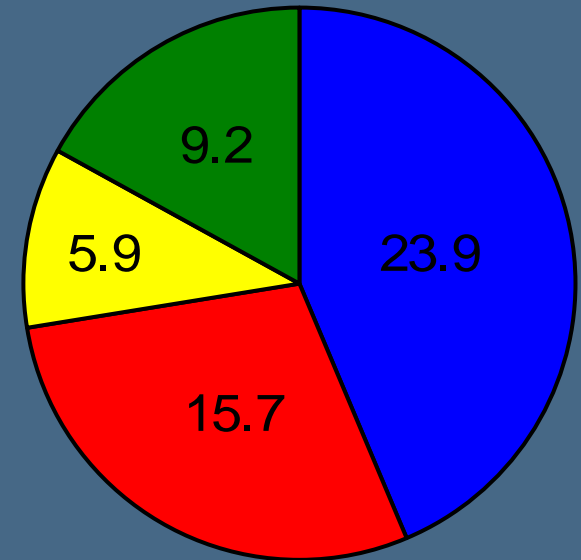
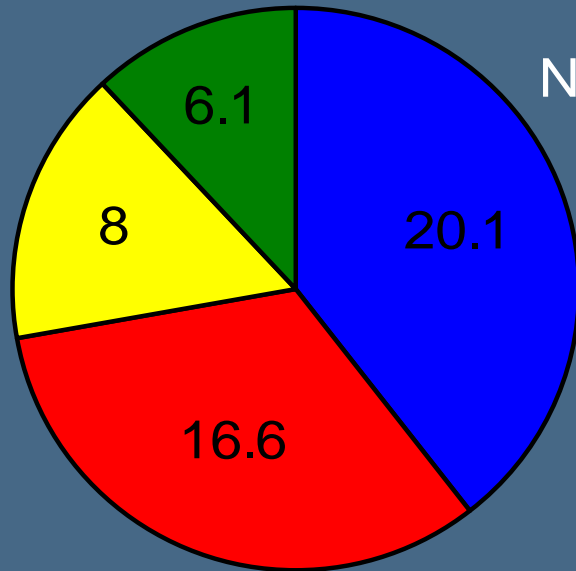
Part 2:

Major Causes of Infant Mortality

National Causes Of Infant Mortality

- Top 5 leading causes of Infant Mortality
 - Congenital malformations
 - Disorders relating to short gestation (<37 weeks) and low birth weight (<2500 grams)
 - Sudden Infant Death Syndrome (SIDS)
 - Maternal complications of pregnancy
 - Accidents (unintentional injuries)

Causes of Infant Mortality



Stanislaus County

California

■ Congenital Malformations ■ Immaturity ■ SIDS ■ Maternal Complications

Precipitating Factors for Death

- One event trigger leading to death
- Not necessarily cause of death (COD)
 - COD: Extreme Prematurity
 - Precipitating Factor: Preterm Labor
- Fetal Deaths
 - Intrauterine Fetal Demise unknown etiology 29.6% (8)
- Infant Deaths < 24 hours
 - Preterm Labor 45% (9)
- Infant Deaths > 24 hours
 - Infection in Child 28.6% (8)
 - 62.5% (5) died in February 2006
 - 12.5% (1) died in January 2006

Part 3:

Gestational Age

Gestational Age

- 26% (7) of Fetal deaths are full term
- Infant deaths surviving < 24 hours are being born premature (20-28 weeks)
- 57% (16) of Infant deaths surviving > 24 hours are mostly full term (>37 weeks)
- 92% of control population are having full term babies

Part 4:

Prenatal Care

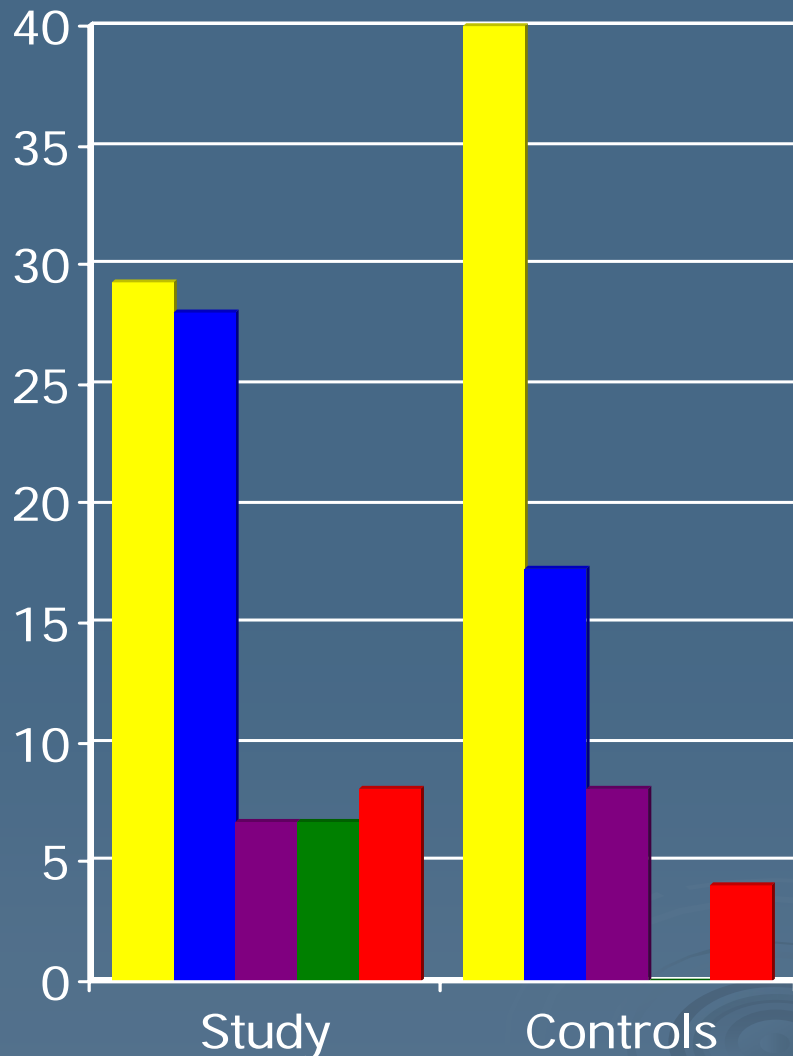
Prenatal Care: Adequacy

- Measure based on Kessner Criteria
- National objective: 90% have adequate PNC
- Low percentage of study subjects receiving adequate prenatal care (30.7% (23))
- Higher percentage of controls receiving adequate prenatal care (50.7% (38))
- Percentage of controls getting adequate PNC also low

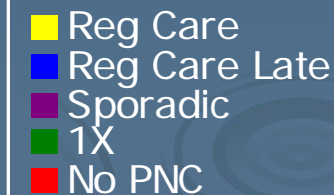
Prenatal Care: Initiation

- Study subjects less likely to seek PNC during 1st trimester than controls
 - 42.7% (32) of study subjects
 - 64% (48) of controls
- Low percentage of controls initiating PNC during 1st trimester

Prenatal Care: Patterns



- Besides regular visits majority shows regular visits after late entry
- Small groups show erratic use trends
- Controls showing erratic use trends as well



Prenatal Care: Psychosocial

- Certain characteristics put clients at increased risk
- Infant Deaths < 24 hours
 - 55% (11) Single
 - Less likely to seek PNC during 1st trimester or received no PNC
 - Use drugs
- Fetal Death
 - 63% (17) were Hispanic



Prenatal Care: Education

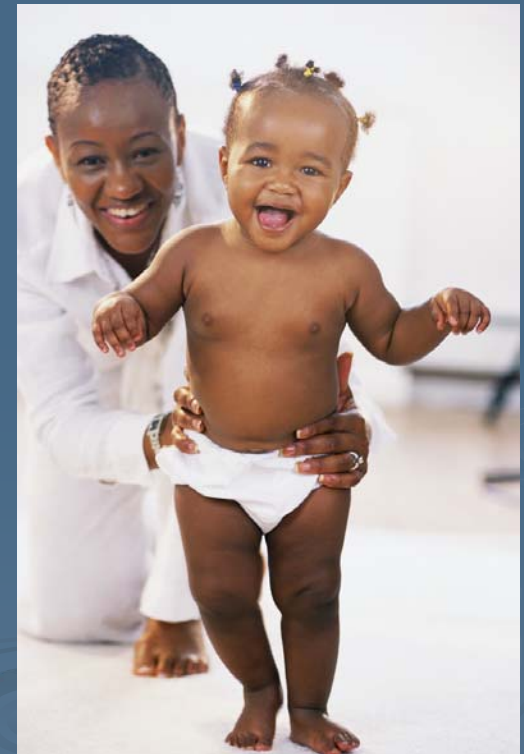
➤ Expectations of Fetal Movement

- 51.9% (14) of fetal deaths were deceased > 1 day (range 1-7 days)
 - 57.1% were Hispanic



Satisfaction With PNC

- Interview data shows satisfaction in the following areas
 - Amount of time waiting to be seen
 - Amount of time provider spent with client
 - Understanding/respect staff showed client



Part 5:

Substance Use
During Pregnancy

Drug, Alcohol & Tobacco Use

- Slightly more maternal laboratory toxicology testing in 2006 study subjects; more positive results
 - 42.7% (32) of study subjects were tested
 - 28% (9) of tested study subjects were positive
 - Type of drug used:
 - Methamphetamine/amphetamine 66.7% (6)
 - Marijuana 44% (4)
- Less maternal laboratory toxicology testing and positive results in controls
 - 13.4% (10) of controls were tested
 - 20% (2) of controls were positive

Drug, Alcohol & Tobacco Use

- Self reported drug use at delivery demonstrated more drug use than found in laboratory toxicology testing
- Low alcohol and tobacco usage in study subjects and controls.

Interview Findings

- Providers are asking clients about alcohol and tobacco use (86.5% (32),
- Providers are not as likely to discuss dangers of alcohol and tobacco use (54.1% (20).



Part 6:

Other Topics

Significant Issues From 2005 Study

➤ Obesity

- Obesity not a factor putting women at risk for fetal/infant death
- Controls are similar to study subjects

➤ Placental Infections

- Found in 70% (14) of Infants Surviving < 24 hrs
- Found in 59.3% (16) of Fetal Deaths

Lessons Learned from Interviews

- Lack of awareness of resources/support groups for those with a fetal/infant loss
- Gratefulness/satisfaction with support/care they received by nursing staff
- Increased communication with personal physician at time of death needed
 - Better explanation of autopsy

Part 7:

Challenges and Successes

Study Challenges

- Support from medical community
 - Ground work done prior to initiating study to gain support
- Medical record issues
- Small sample size
- Interview sample biased
- Incorrect or no contact information made it hard to find women

Study Successes

- Medical community support
 - Forged relationships and collaborations that will help ensure a healthier Stanislaus County
 - Built trust from the beginning which has ensured ongoing collaboration/discussion
- Support for women and families who experienced a fetal or infant loss
- Increased awareness of county's infant mortality problem

Part 8:

Conclusions and Recommendations

Conclusions

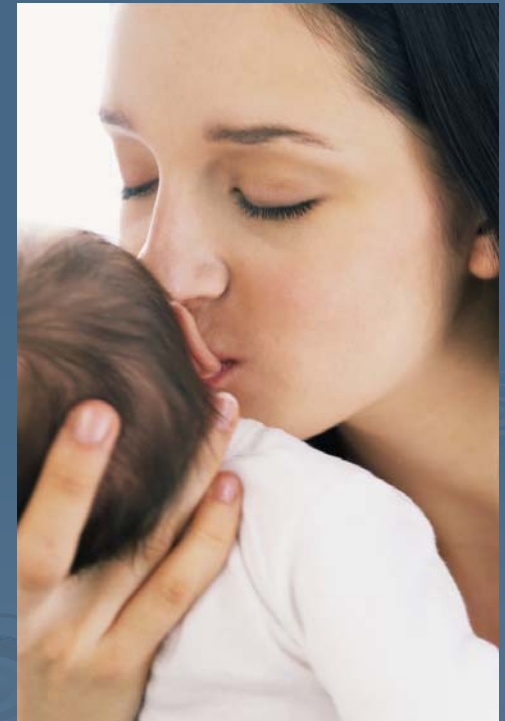
- The following factors were found to be associated with fetal and infant mortality in our county
 - Prematurity
 - PNC Access Issues: Late entry into and maintenance in PNC
 - Possible gap in prenatal knowledge
 - Vulnerable populations
 - Drug use during pregnancy

What Did We Do With The Findings?

- Presented findings to a broad range of partners
 - Discussion topics
 - Findings
 - Possible other causes
 - Activities that would address findings
 - Developed recommendations

Recommendations

- Go beyond basic prenatal care services
 - Healthy Birth Outcomes program
 - Centering Pregnancy
- Community Education
 - Media Campaign
- Provider Education
 - Interactive provider training



Recommendations

- Universal substance use and STD screening throughout pregnancy
 - Dr. Ira Chasnoff's 4 P's Plus screen tool
- Continued collaboration with traditional and non-traditional partners

Where Do We Go From Here?

- Developing action plans to implement recommendations
- Researching feasibility and effectiveness
- Identifying funding sources

