

Improving Health Outcomes with Preconception Education

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Objectives

- **Explain the rationale for implementing the concept of preconception health to your practice**
- **Discuss the issues that impact poor pregnancy outcomes**
- **Describe at least two models of integrating preconception health into practice**
- **Identify specific strategies to put into daily practice**
- **Discuss research on existing models of care coordination (prenatal and Interconception) used in other states**

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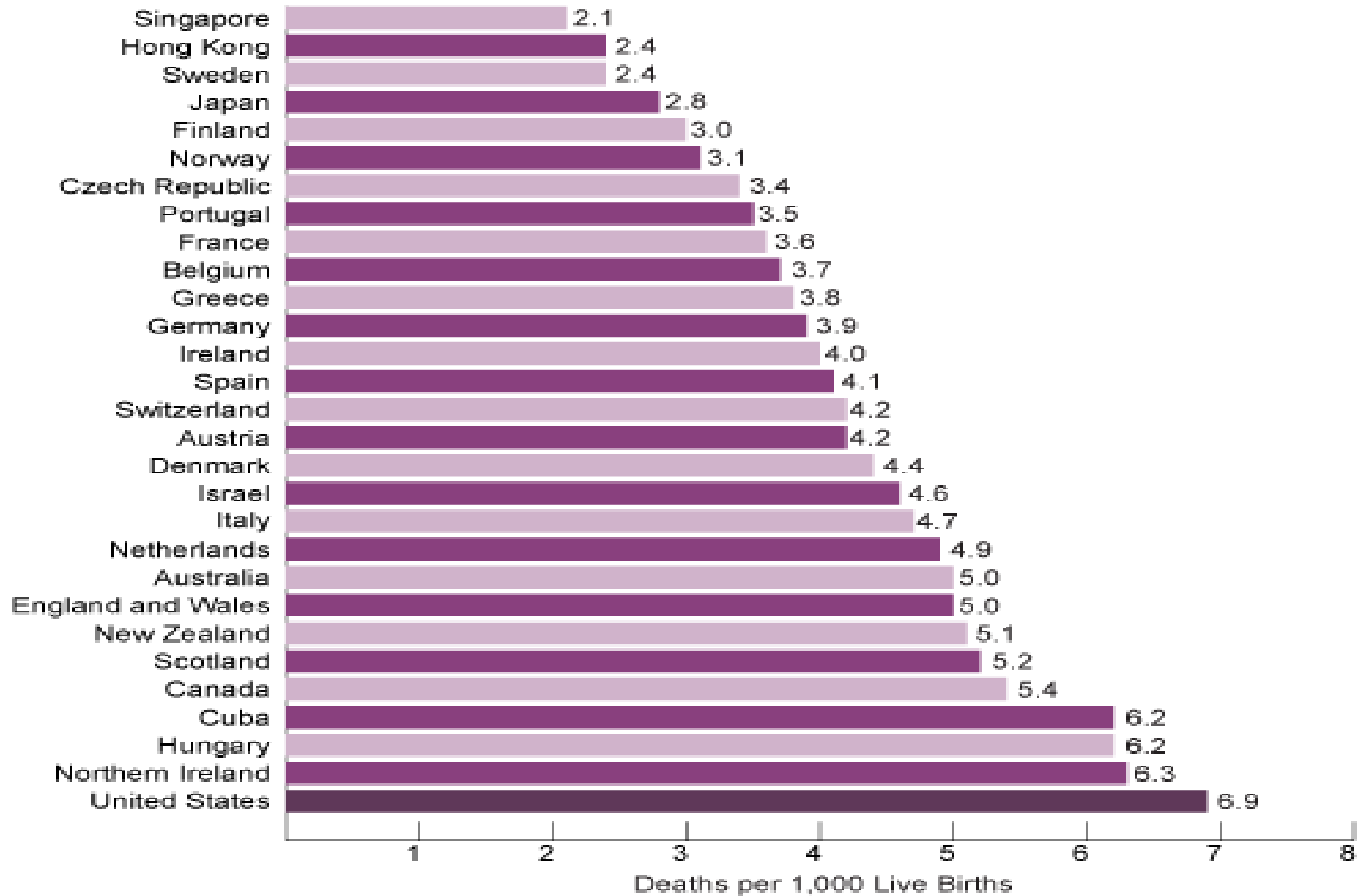
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"KEEP MY FINGERS CROSSED! IS THAT IT?"

- **More than 28,500 babies died in 2006 before they were a year old, and babies who died from preterm birth-related causes accounted for more than 36 percent of infant death**
- **Recent data ranks the United States 28th out of 32 countries for infant mortality. The US mortality rate is higher than other countries**
- **Preterm and low birth weight continue to be stagnate**

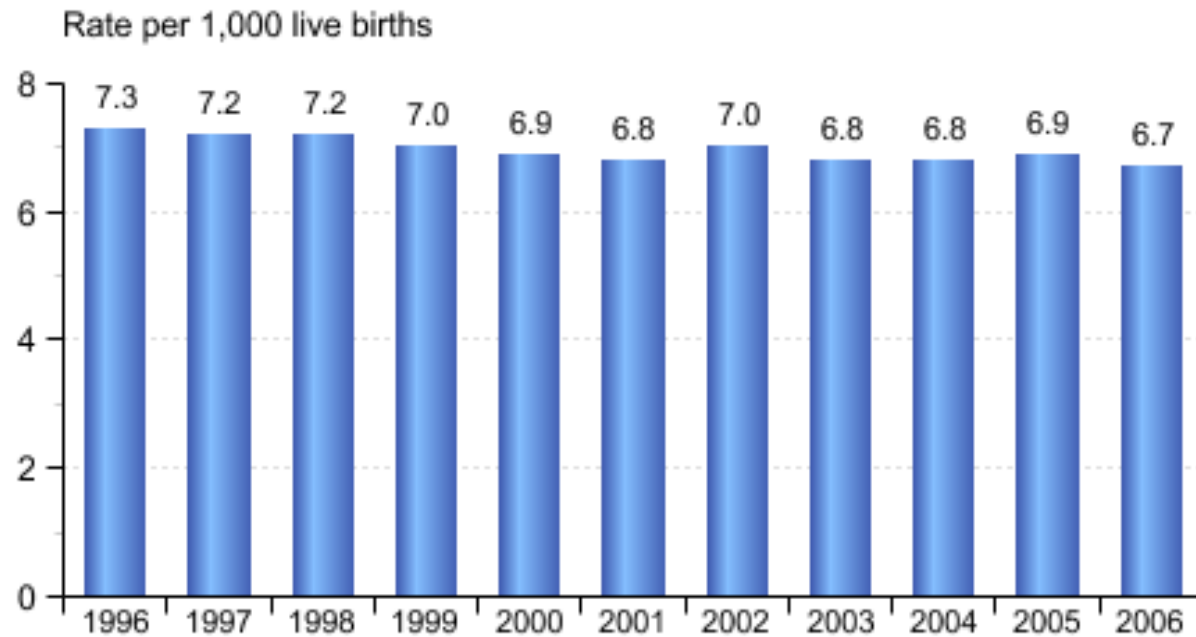
International Infant Mortality Rates, Selected Countries, 2005

Source: Centers for Disease Control and Prevention, National Center for Health Statistics



Infant mortality rates

US, 1996-2006



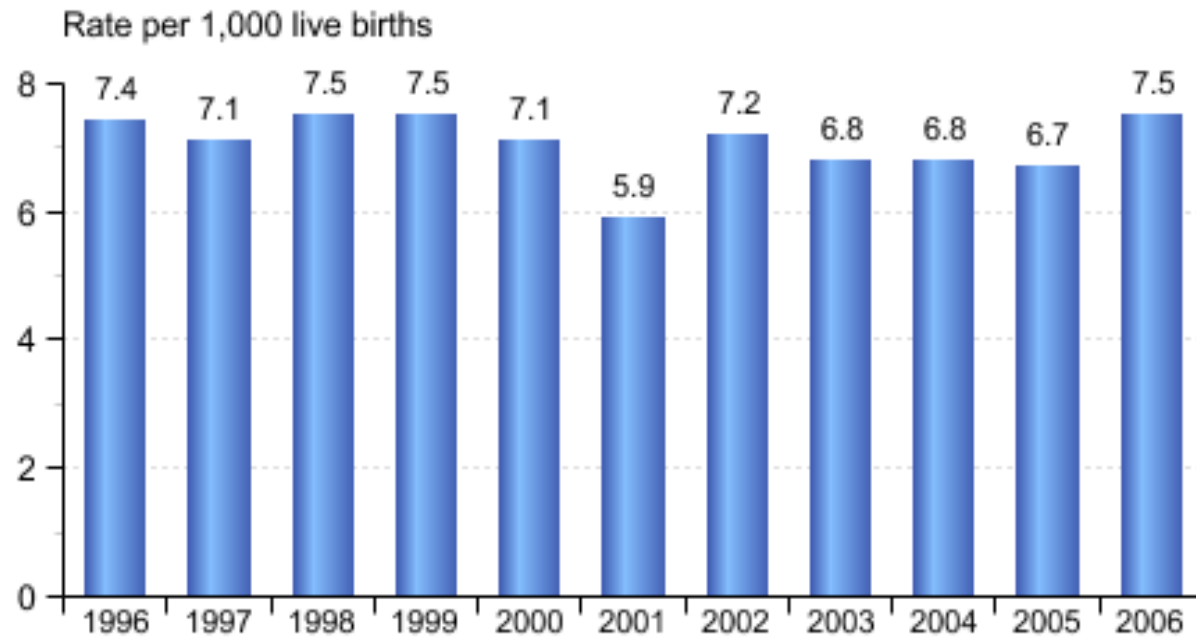
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An infant death occurs within the first year of life.

Source: National Center for Health Statistics, final mortality data, 1990-1994 and period linked birth/infant death data, 1995-present. Retrieved October 5, 2011, from www.marchofdimes.com/peristats.

Infant mortality rates

Kentucky, 1996-2006



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Patricia

"Well... I think we should run a pregnancy test. Just to make sure!"

What is preconception health care?

Preconception health care is care given to a woman before pregnancy to manage conditions and behaviors which could be a risk to her or her baby.

Goal of Preconception Care

- **To enhance knowledge, and improve attitudes and value for health care prior to conception**
- **To assure that women of childbearing age receive evidenced-based risk screening, health promotion, and intervention that will enable them to enter a pregnancy in good health.**
- **To identify reversible health risks to pregnancy outcome, emphasizing factors that must be acted on before conception or to achieve optimal pregnancy outcomes.**
- **To educate women on risk prevention before pregnancy. Education regarding exercise, obesity, nutrition, occupational hazards, family support, and financial issues related to pregnancy contribute to a better-prepared patient, whose prospects are good for a healthy outcome.**

National MCH System Challenges

<p>The birth rate for U.S. teenagers fell 6 percent in 2009.</p>	<p>The 2009 preliminary estimate of registered births for the United States was 4,131,019, or 3 percent less than in 2008.</p>
<p>The rate in 2009 was 39.1 births per 1,000 teenagers 15–19 years, down from 41.5 in 2008 and 8 percent lower than in 2007 .</p>	<p>The low birth weight in 2009 was 8.16% compared to 2008 at 8.18%</p>
<p>The birth rate for women aged 40 – 44 rose in 2009—the only age group to have an increase—up 3 percent from 9.8 births per 1,000 women in 2008 to 10.1, the highest rate since 1967.</p>	<p>The preterm birth rate declined in 2009 to 12.18% of all births for the third straight year, from 12.33% in 2008</p>

National MCH Systems Challenges

Infant Mortality

The preliminary infant mortality rate for 2009 was 6.42 infant deaths per 1,000 live births. This represents a decrease of 2.6 percent from the preliminary 2008 rate of 6.59. With the exception of 2002 and 2005, the infant mortality rate has statistically remained the same or decreased significantly each successive year from 1958 through 2009.

The 2009 preliminary infant mortality rate for black infants was 12.71 infant deaths per 1,000 live births, compared with 12.68 per 1,000 live births in 2008.

The infant mortality rate for white infants decreased in 2009 by 4.0 percent, from 5.54 infant deaths per 1,000 live births in 2008 to 5.32 in 2009.

The mortality rate for black infants was 2.4 times the rate for white infants.

National MCH Systems Challenges

Healthy People 2020	Healthy People 2010
Low Birth Weight 7.8 percent	5 percent
Pre-term birth 11.4 percent	7.6 percent
First Trimester Prenatal Care 77.9 percent	90 percent
Infant Mortality 6 percent	4.5 percent
Neonatal Mortality 4.1	2.9 percent
Primary Cesarean births 23.9	15 percent
Repeat Cesareans 81.7 percent (18.3 percent)	63 percent (27 percent)

In November 2008, the March of Dimes released its first annual “Premature Birth Report Card,” Giving the Nation an overall “D” grade.

Implementing Preconception Education



Risk Screening

Reproductive Education

- Discuss safe and effective birth control methods available
- Assist patient with developing a birth plan
 - a. Determine how conception takes place
 - b. Educate on physiology of conception

Risk Screening

Environmental toxins, and teratogens

- Occupational exposures: lead, mercury, pesticides
- Home exposures: solvents, paint thinners, strippers, pollutants in water
- Discuss medications and drug information

Risk Screening

Nutrition, vitamins, minerals and weight management

- Nutrition
- Risk of deficiencies (pica, lactose intolerance, pica and iron deficiency)
- Highlight good sources of iron, calcium, B Vitamins and low fat options
- Advise all women take folic acid 400 mcg
- Discuss obesity, underweight and work with correcting both

Risk Screening

Genetic Disorders

- Family history
- Genetic screening and counseling

Risk Screening

Substance Use

- Screen for alcoholism and use of illicit drugs
- Advise to reduce/stop smoking and explain link to low birth weight and preterm labor
- Offer smoking cessation support
- Arrange treatment referrals as necessary

Risk Screening

Oral Health

- Encourage dental flossing
- Identify and treat dental caries and periodontal disease

Risk Screening

Psychosocial concerns

- Violence Screening
 - a. Is patient safe at home
 - b. Was there abuse as child
 - c. Screen for depression
 - d. Discuss money concerns

Risk Screening

Infectious disease and vaccinations

- TB
- Rubella
- Varicella
- Influenza
- Hepatitis B
- HIV
- STD
- Toxoplasmosis if suspected

Programs reviewed

- | | |
|-----------------------------|-------------------|
| • North Carolina
Medical | Pregnancy
Home |
| • Louisiana | LA Moms |
| • Colorado | Prenatal Plus |

Pregnancy Home Initiative

A partnership with Community
Care of North Carolina, Division of
Medical Assistance and Division of
Public Health



Intervention

- Each Pregnancy Medical Home is locally managed through joint agreements between the local provider, Community Care of North Carolina (CCNC), and the local health department pregnancy care management group.
- **CCNC:** Each local CCNC has an Obstetrical Coordinator (RN) and Obstetrical Champion (MD) on staff to work with the pregnancy care managers and providers
- **Providers:** To be considered a PMH, must meet set criteria:
 - Use of evidence-based practices
 - Conducting risk screening
 - Fully working with the network and participating in network initiatives
 - Must integrate pregnancy care managers into patient care
 - Measurement and reporting of performance
 - Access to and coordination of care for patients

Intervention

- **Pregnancy care managers (PCM):** provide individualized case management services for Medicaid patients identified as being at risk for poor birth outcomes
- The level of service provided is in proportion to the individual's identified needs
- Care managers closely monitor the pregnancy through regular contact with the physician and patient to promote a healthy birth outcome
- Each PMH has a PCM assigned to the practice.

Intervention

Pregnancy Care Manager Accountability Measures	GOAL
Number of pregnant women with positive risk-screen findings who enter the case management system	Increase 3% annually, until a rate of 95% is achieved
Number of pregnant women meeting CCNC priority criteria who undergo risk screening	Increase 3% annually, until a rate of 95% is achieved
Postpartum visit rate	Increase 3% annually for patients who receive CM services or whose infant was admitted to the NICU
Percentage of women who receive the 17P injections they are eligible to receive	Increase 5% annually, until a rate of 90% is achieved
Percentage of PMH patients who receive pregnancy care management services, are referred for a family planning waiver, or receive full Medicaid coverage	Increase until a rate of 95% is achieved

Participants/Risk Screening

- Risk criteria include a combination of medical risk, psychosocial factors, and utilization (or lack thereof)
- Positive risk screen will trigger pregnancy care manager assessment (as will physician request, visits to L&D triage or ED, hospitalizations during pregnancy)
- Risk screening to be performed at first OB visit; follow-up screen at end of 2nd trimester to identify risks emerging during pregnancy
- Follow-up screen may be performed any time a new risk factor is identified

Participants/Risk Screening

- Providers must submit all risk screenings to their PCM within 7 business days. PCMs are expected to conduct a thorough assessment of all priority patients within 30 days.
- Non-PMH prenatal care providers and other community agencies may refer a patient for assessment with a PCM, who evaluates the patient's level of need and develops a care plan accordingly.

Financing

- Care/case managers paid on a PMPM arrangement
 - The population of childbearing women in the community is used as the “member” number in order to incentivize early identification and engagement of pregnant women in the community in a PMH
- OBs paid through an enhanced FFS arrangement
 - Additional incentives based on full cooperation in the coordinated care program and outcome-driven metrics
- There is no “new” money in the program; enhanced payments to OBs are derived from the savings created by:
 - Providing a higher standard of obstetrical care
 - Reducing unnecessary care
 - Converting obstetrical care into a clinically driven team process.

Outcomes

- Program began in April 2011, clinical outcomes data not available yet
- Unpublished financial projections from the North Carolina Division of Medical Assistance estimate \$1.5 million in savings for fiscal year 2012 and \$9.9 million in savings for fiscal year 2013



No-Cost Health Insurance for Pregnant Women

No-Cost Health Insurance for Pregnant Women

Intervention

- Based on Nurse-Family Partnership Model (NFP)
- Goal: Improving maternal health and birth outcomes through pre-natal services
 - Also: Teach parenting skills, assist mothers to get back into school and/or workforce post-childbirth
- Structure
 - Each team is comprised of one supervisor and 8 nurses employed by the State
 - Each full-time RN has a caseload of 23-25 mothers In 2007, there were 12.5 teams that served approximately 12% of eligible women
 - Intense program intended for high-risk/hard to engage clients

Intervention

- Home visits during pregnancy—ideally
 - Between the 12th and 20th week, but no later than the 28th week
 - Continue visits through the first two years of the child’s life
 - Visits typically last from 60-90 minutes
- Visit schedule:

Phase	Visit frequency
Pre-delivery	<ul style="list-style-type: none">■ 1 x week for 1st month after registration, then■ every other week through delivery
Post-delivery	<ul style="list-style-type: none">■ Once a week for the first six weeks of the baby's life■ Every other week until the 21st month postpartum■ Once a month until 24 months postpartum.

Intervention

- Strict program execution guidelines—from training to delivery to evaluation
- According to guidelines, nurse visitors focus on six primary domains of functioning: personal health, environmental health, maternal role development, maternal life course development, family and friend support, and accessing health and human services
- NFP National Program Office provides training, guidelines and evaluation for states that use model (currently in 23 states)

Identification/Risk Screening

- Specific screening criteria for enrollment not available
- Must be first time, low-income mother
- Typical enrollee in LA is 19 years old with 11 years education

Financing

- **2007-08 LA NFP Funding**

Source	Amount
Federal Maternal & Child Health Block Grant	\$2,238,000
State General Fund	\$1,000,000
Temporary Assistance for Needy Families (TANF)	\$2,600,000
Medicaid	\$2,500,000
TOTAL	\$8,338,000

Outcomes: Clinical/Social

- 2002 randomized controlled study conducted by Tulane University demonstrated:
 - 52% reduction in premature births
 - 50% reduction in emergency room visits for any reason by the time the child was 15 months old
 - 43% reduction in prenatal depression

Outcomes: Financial

- For the NFP model in general, several cost effectiveness studies have been done
- Ex: 1997 Rand Corporation for Elmira NY NFP demonstration
 - Findings: program recouped initial costs before child turns 2 and \$4 for every dollar spent by time child is 15
 - Savings through increased tax revenue and decreased expenditures for gov't assistance, services and criminal justice system
- NFP program has been recognized by the Coalition for Evidence-Based Policy as a program that produces significant economic return on investment



Colorado Prenatal Plus Program

Intervention

- The Prenatal Plus Program is managed collaboratively by the Colorado Department of Public Health and Environment and the Colorado Department of Health Care Policy and Financing
- At each local health agency, the Prenatal Plus team consists of a care coordinator, registered dietitian and mental health professional that work together to:
 - Improve client psychosocial and nutritional health status
 - Assist the client in developing and maintaining a healthy lifestyle during pregnancy and beyond; especially discouraging the use of tobacco, alcohol and illicit drugs
 - Increase client's ability to appropriately use resources, including medical and social services

Intervention: Model Care

- Client enrolls in the first or second trimester (prior to 28 weeks) and continues through delivery and up to 60 days postpartum
- Client must receive a minimum of 10 contacts with the Prenatal Plus staff
- Model of care is based on program data that indicate 10 visits produces the best health outcomes related to risk resolution
 - 88% resolved all or some of their risks compared to 77% of those without model care

Identification/Risk Screening

- The women are screened for eligibility using an intake questionnaire that assesses 6 key enrollment criteria: history of low birth weight, 17 years of age or less, recent or current smoker, recent or current drug user, recent or current alcohol user, and/or pre-pregnancy underweight (BMI <19.8 kg/m²)
- Women are enrolled in the program through a variety of referral sources including Medicaid application sites, WIC, medical providers and other community agencies

Financing

- Based on agency cost analysis information, the average cost/client was \$1,192 in 2007
- Medicaid reimburses the program at 4 different levels, based on the number of visits received
 - This only covers on average ~45% of program costs
 - Local agencies are responsible for finding other resources to provide the local subsidy for uncompensated costs.
- At the state level, Medicaid provides the Colorado Department of Public Health and Environment with \$108,000 to cover costs for staff salaries and other administrative activities (this does not cover all the costs of the program)

Outcomes: Financial

- 2002 analysis done by University of Colorado found:
 - For every \$1 spent on Prenatal Plus services, \$2.48 was saved in Medicaid costs annually
 - Expenditures by Medicaid for Prenatal Plus participants and their infants for 1998-2000 totaled \$21.4 million over three years. Expenditures for a comparable high-risk group that did not receive Prenatal Plus services are estimated to have totaled \$27.3 million, nearly \$6 million more.
 - Medicaid costs for Prenatal Plus participants and their infants were an average of \$1,138 lower, or \$4,088 versus \$5,226, than the costs of serving a similar group of women and their infants who did not receive services

Outcomes: Clinical

- Low birth weight rate among Prenatal Plus participants declined from 12.6 percent in 2005 to 9.4 percent in 2008
- The Prenatal Plus rate of low birth weight is 22.5% lower than the expected rate
- Risk reduction:
 - Among women who were smokers when they began the program, 66% quit before they delivered
 - Among women who reported psychosocial problems, 80% resolved their risk during pregnancy.
 - For women with inadequate weight gain during pregnancy, 72% gained the recommended amount of weight before delivery
 - A total of 92% of the women who reported using drugs quit
 - 99% of the women who reported alcohol use abstained during pregnancy

Acknowledgements

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Thank you