Prenatal Plus Program

2005 Annual Report

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Prenatal Plus Program Highlights, 2005

- In 2005, the Prenatal Plus Program saved Medicaid an estimated $3.1 million in health care expenses for the 2,354 women and their infants (through their 1st year) who participated in the program.

- Nearly three-quarters (73 percent) of enrolled women continued with the program through delivery and 50 percent of those women received model care, a substantial increase over past years.

Model Care

Client enrolls in the Prenatal Plus Program in the first or second trimester (prior to 28 weeks gestation) and continues through delivery and up to 60 days postpartum. The client must receive a minimum of ten contacts with the Prenatal Plus staff, two of which must be home or off-site visits.

- Eighty-eight percent of women in the program who received model care resolved all or some of their risks compared to 83 percent among those who did not receive model care while in the program, a statistically significant difference. For each of the five risk categories, a higher percentage of women were able to resolve their risk factors if they received model care.

- In 2005, the Prenatal Plus Program maintained or improved resolution rates in all five risk categories compared to 2004. Of the women with initial risks, 60 percent quit smoking before delivery, 76 percent resolved psychosocial risk, 75 percent gained an adequate amount of weight, 89 percent quit using drugs, and 98 percent stopped drinking alcohol.

Risk Categories

Smoking*

Psychosocial - experiencing significant stress as a result of personal/family safety needs, lack of support systems, or an inability to meet basic needs.

Weight Gain - any weight gain below the appropriate line on the weight grid, weight loss below pre-pregnancy weight in the 1st trimester, or weight loss of 2 pounds or more in the 2nd or 3rd trimester, or weight gain of less than 2 pounds per month in the 2nd or 3rd trimester.

Drug*

Alcohol*

* At risk if any current use, use after conception, or use within the 3 months prior to conception.

- More than half (56 percent) of all women in the program resolved *all* their risks, For these women, the low birthweight rate was 9.7 percent .

- The low birthweight rate was 12.6 percent for all infants delivered to Prenatal Plus clients in 2005. Without Prenatal Plus services, the low birthweight rate for this population was expected to be 13.8 percent, based on their high-risk profile. The 2005 actual rate (12.6 percent) for Prenatal Plus clients is 9 percent lower than the expected rate, a statistically significant difference.

- Of the 1,720 infants born to Prenatal Plus Program participants, only 216 infants were low birthweight. It is expected that these same women would have had 237 low birthweight infants if they had not received Prenatal Plus services. The Prenatal Plus Program therefore prevented an estimated 21 low birthweight births during 2005. Since the program began in 1996, an estimated 839 infants have been born at normal weight instead of low birth weight.

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2005 Annual Report

INTRODUCTION

Low birthweight[1] is one of Colorado's most critical public health problems, and it is a problem that is amenable to intervention and reduction.[2] The Prenatal Plus Program was established 10 years ago to address this problem. Prenatal Plus is a Medicaid-funded program that provides care coordination, nutrition, and mental health counseling to Medicaid-eligible pregnant women. An initial assessment identifies risk factors and enrolls those women who are at highest risk for delivering low birthweight infants. The goal of the Prenatal Plus Program is to improve birth outcomes by reducing the number of low birthweight infants born to qualifying women. This report summarizes the achievements of the Prenatal Plus Program at reducing the low birthweight rate[3] during 2005.

The Prenatal Plus Program is a partnership between the Colorado Department of Public Health and Environment and the Colorado Department of Health Care Policy and Financing. Prenatal Plus services are provided at county health departments, county nursing services, community health centers, and private nonprofit agencies. Twenty-four agencies provided Prenatal Plus services in 21 counties around the state in 2005. A map and list of the program sites is located on pages 14 and 15 of the Appendix.

Prenatal Plus services enhance the medical component of prenatal care. The Prenatal Plus team consists of a Care Coordinator, Registered Dietitian and Mental Health Professional. The team works with each client to improve her psychosocial and nutritional health status; assist her in developing and maintaining healthy lifestyles during pregnancy and postpartum, especially discouraging the use of tobacco, alcohol, and illicit drugs; and increase her ability to appropriately use resources, including medical and social services. Care coordinators address client needs throughout pregnancy and up to 60 days postpartum, referring clients to the Registered Dietitian and Mental Health Professional as needed. Concerns addressed include housing and food needs, nutrition, employment, domestic violence, substance abuse, high life stress, depression and/or other mental health problems that increase the risk of delivering a low birthweight infant.

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[1] 5 pounds, 8 ounces or less at birth (less than 2,500 grams).

[2] *Tipping the Scales: Weighing in on Solutions to the Low Birth Weight Problem in Colorado*, a report published by the Colorado Department of Public Health and Environment, 2000. Available at http://www.cdphe.state.co.us/pp/womens/pdf/tippingthescales.pdf

[3] The number of births weighing 5 pounds 8 ounces or less divided by the total number of births, expressed as a percentage. This rate is commonly used to assess the level of health in a group of births.

PROGRAM CASELOAD

The program experienced several changes in 2005 that have concentrated services on an even higher risk population, and on those women who have the best chance of receiving model care[4]. The enrollment criteria were adjusted to focus more on evidence-based risk factors that contribute to low birthweight. Nine out of ten (87.5 percent) women[5] qualifying for the program had one or more of the six absolute enrollment criteria: history of low birthweight, 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/m^2).[6] The high number of women meeting one of more of these criteria demonstrates that the program is effectively targeting the population at the highest risk of delivering a low birthweight infant.

In addition, the discontinuation of Presumptive Eligibility (PE) from September 2004-July 2005 affected those Prenatal Plus agencies that had previously been PE application sites and referred pregnant women to Prenatal Plus. When PE was reinstated in July 2005 with new eligibility criteria, the women eligible for PE services were more likely to qualify for regular Medicaid status. Therefore, these women were also more likely to remain with the program through delivery and receive model care. In 2005, nearly three-quarters (73 percent) of enrolled women continued with the program through delivery and 50 percent of those women received model care, a substantial increase over past years.

Two Prenatal Plus agencies, Grand County Public Health and Salud Family Health Center-Longmont, chose to discontinue Prenatal Plus services during 2005 due to a lack of local agency financial resources and low program enrollment.

The Nurse-Family Partnership (NFP) Program, a nurse home visitation program for pregnant women expecting their first child, has been expanding their services throughout Colorado. A woman may not enroll in both programs simultaneously, therefore some first time mothers who might have previously enrolled in the Prenatal Plus Program have instead enrolled in the NFP Program.

In 2005, 2,354 women were enrolled in the Prenatal Plus Program. A total of 1,702 mothers completed the program, delivering 1,720 infants (18 women had twins). A total of 652 women withdrew from the program prior to delivery. Of those women who withdrew, 135 transferred care to other providers, 111 moved, 167 could not be located after numerous attempts, 74 experienced miscarriages or fetal deaths, 133 declined further care, and 32 discontinued for unknown reasons.

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[4] Model care is defined as services provided to a client who enrolls in the Prenatal Plus Program in the first or second trimester (prior to 28 weeks gestation) and continues through delivery and up to 60 days postpartum. The client must receive a minimum of ten contacts with the Prenatal Plus staff, two of which must be home or off-site visits.

[5] Enrollment criteria were available for 1,940 of the 2,354 women in the program. The new criteria were implemented for women who enrolled after January 1, 2005 and many women delivering in 2005 were enrolled in 2004.

[6] Additional enrollment criteria can be found on the Prenatal Plus Intake Form at: http://www.cdphe.state.co.us/pp/womens/PNPlusManual/IntakeForm.pdf

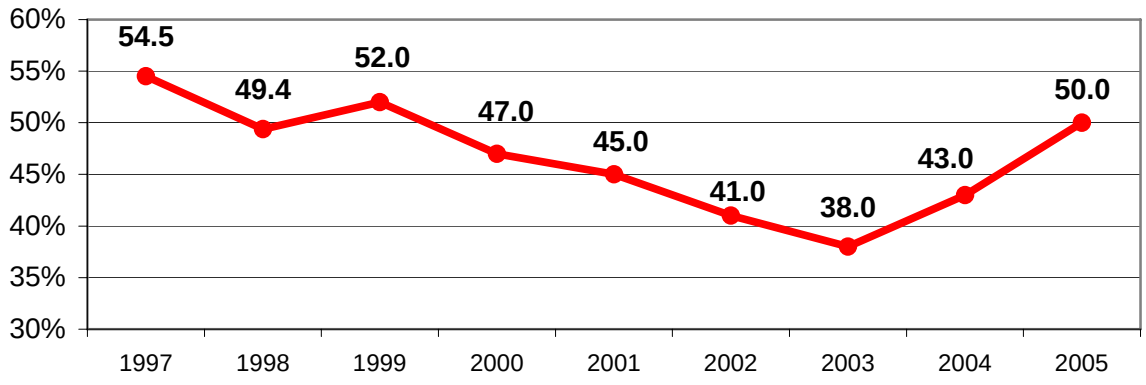
Only a fraction of the women who are eligible for Prenatal Plus services in Colorado are receiving them. Medicaid pays for prenatal care for approximately 21,000 women each year (out of 69,000 total Colorado births), and seven out of every ten (71 percent) Medicaid clients have risks that would qualify them for the Prenatal Plus Program.[7] There are an estimated 14,910 women who could benefit from the services of Prenatal Plus. Increased participation in the program would result in significant health benefits for more clients and greater cost savings for Medicaid. The program continually looks at ways to outreach to more women and to increase the provider base around the state.

MODEL CARE

The Prenatal Plus Program is based on a model that encourages enrollment in the program in the first or second trimester (prior to 28 weeks gestation) and provides care through delivery and up to 60 days postpartum. The client must have a minimum of ten encounters with the Prenatal Plus staff, two of which must be home or off-site visits. This model is based on evidence that women who receive this level of care are more likely to resolve their risks and deliver normal weight infants.

In July 2004, the Prenatal Plus Program and Medicaid implemented a revised reimbursement structure for the different levels of service provided to women in the program. The revised structure offers a greater incentive for providing model care, services proven to produce the best health outcomes for pregnant women and their infants, since risk resolution is higher and low birthweight rates are lower among women receiving model care. In addition, the revised reimbursement structure encourages early enrollment, since model care services are provided to women who enroll in the program prior to 28 weeks gestation. In 2005, nearly 9 out of 10 women (89%) were enrolled in the program during the 1st or 2nd trimester. As a result, the program has experienced a significant and desired increase in the percentage of women receiving model care from 38 percent in 2003 to 43 percent in 2004 and 50 percent in 2005. This upward trend is outlined in Figure 1 below.

Figure 1: Percent of Deliverers Receiving Model Care



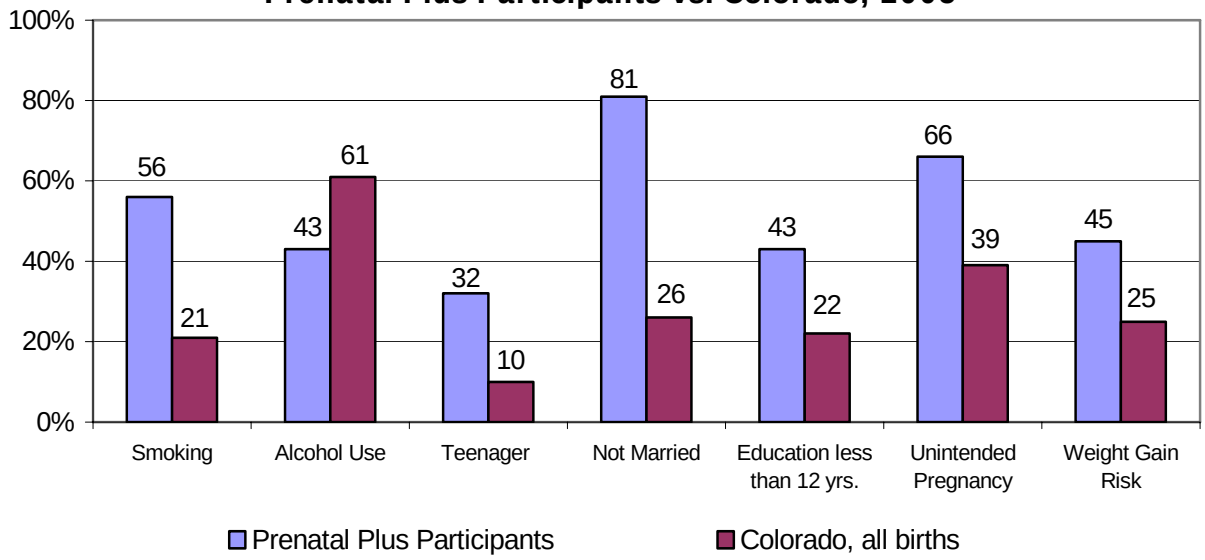
[7] Pregnancy Risk Assessment Monitoring System (PRAMS) data, 2000-2003.

CHARACTERISTICS AND RISK FACTORS

The Prenatal Plus Program targets pregnant women in Colorado with demographic and behavioral risk factors for a low birthweight infant. In 2005 the Prenatal Plus Program served a higher risk cohort of women than in previous years. A higher percentage of the women were smokers, substance abusers, and gained weight inadequately during pregnancy. The shift in population demographics was due to the revised Prenatal Plus Program eligibility criteria, as well as to the changes that occurred with Presumptive Eligibility.

Prenatal Plus clients are disproportionately young; unmarried; less educated; at risk for substance use; and also experience inadequate weight gain and psychosocial problems. In 2005, 43 percent of the women enrolled in the program had less than a high school education, compared to 22 percent of all women in Colorado giving birth in 2005. Similarly, 56 percent were smokers, compared to only 21 percent among all Colorado women giving birth. The proportion of Prenatal Plus women at weight gain risk[8] was 45 percent, compared to 25 percent among all Colorado women. Differences among the Prenatal Plus population and the general population in Colorado are highlighted in Figure 2. Comparable data are not available for all risks. (See Table 1 on page 17 of the Appendix for more data on Prenatal Plus client risk factors.)

Figure 2: Percent with Risk-
Comparison of Characteristics and Initial Risk Factors
Prenatal Plus Participants vs. Colorado, 2005



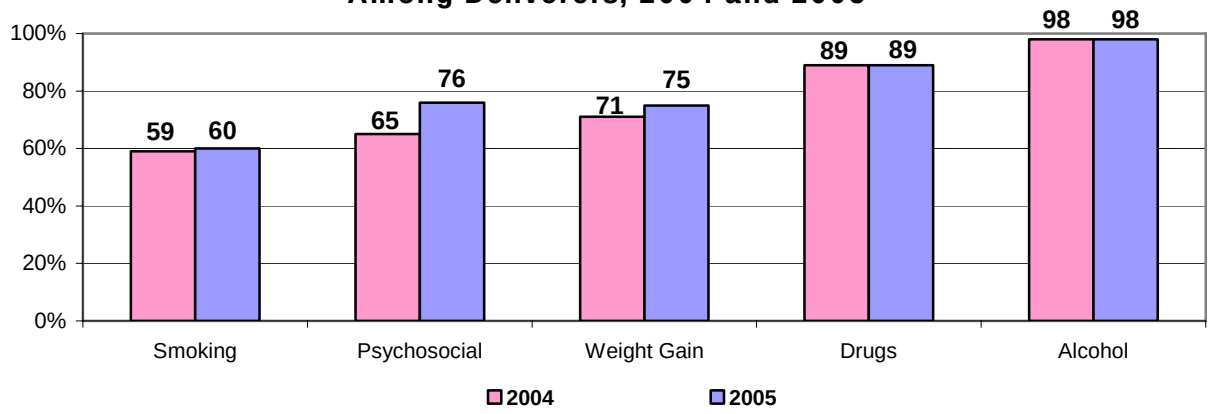
[8] Weight gain risk includes only women with inadequate prenatal weight gain, defined as any weight gain below the appropriate line on the weight grid, weight loss below pre-pregnancy weight in the 1st trimester, or weight loss of 2 pounds or more in the 2nd or 3rd trimester, or weight gain of less than 2 pounds per month in the 2nd or 3rd trimester.

RISK RESOLUTION RATES

Despite the shift in the population to a higher risk cohort than in previous years, the Prenatal Plus Program maintained or improved resolution rates in all five of the risk categories. This is quite an achievement. Resolving risk means quitting smoking; ceasing alcohol or drug use; gaining the recommended amount of weight during pregnancy; and adequately addressing psychosocial problems such as homelessness, domestic violence, or depression.

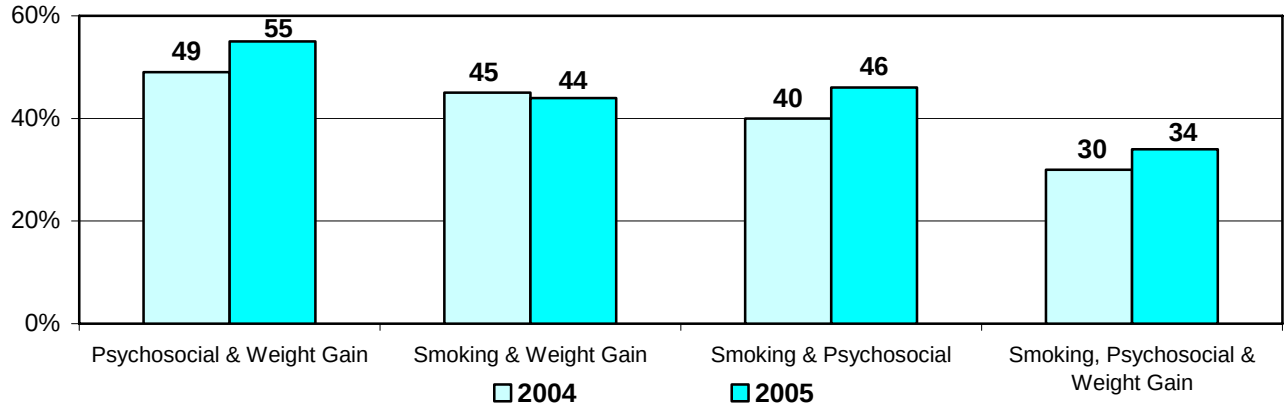
The Prenatal Plus Program helps the majority of women resolve a specific risk. Among women who were smokers when they started the Prenatal Plus Program, 60 percent quit before they delivered, a very high smoking cessation rate. Of the women who reported psychosocial problems, 76 percent resolved their risk during pregnancy. Among Prenatal Plus clients at weight gain risk, 75 percent resolved their risk and gained the recommended amount of weight. A total of 89 percent of the women who reported using drugs quit, and 98 percent of the women who reported consuming alcohol stopped drinking during pregnancy. Figure 3 shows the risk resolution rates for women who delivered in the Prenatal Plus Program during 2005 compared to 2004.

Figure 3: Risk Resolution Rates for Individual Risks Among Deliverers, 2004 and 2005



The Prenatal Plus Program also assists women with multiple risk factors resolve both or all risks, as seen in Figure 4. The proportions that resolve more than one risk factor are lower, as the task is more difficult. Among women with psychosocial and weight gain risks, 55 percent were able to resolve both risks by the end of pregnancy. For women with smoking risk in addition to psychosocial and weight gain risks, 34 percent were able to resolve all three risks. Other combinations yielded resolution rates that were greater than 40 percent. Among all women delivering with known risk resolution, over half (56 percent) were able to resolve *all* their risks, 30 percent were able to resolve some of their risks and only 14 percent were unable to resolve any of their risks.

Figure 4: Risk Resolution Rates for Combinations of Risks Among Deliverers, 2004 and 2005



For those who received model care, 88 percent resolved all or some of their risks compared to 83 percent among those who did not receive model care, a difference which is statistically significant ($p<.001$). Among smokers experiencing model care, 64 percent quit compared to 54 percent of smokers who did not get model care, also statistically significant ($p<.01$). For each of the risk categories, a higher percentage of women were able to resolve their risk factors if they received model care. This demonstrates the biggest benefits in risk reduction occur among participants receiving model care. (See Table 2 on page 18 of the Appendix for more risk resolution results).

LOW BIRTHWEIGHT

Unfortunately, the number of low birthweight infants born in the U.S. has been increasing steadily since 1999. Colorado's rate has been increasing as well, and the state experienced a low birthweight rate of 9.3 percent in 2005, the highest rate since 1970. Like the upward trend in the state, the low birthweight rate in the Prenatal Plus Program has been increasing in recent years, and reached 12.6 percent in 2005.

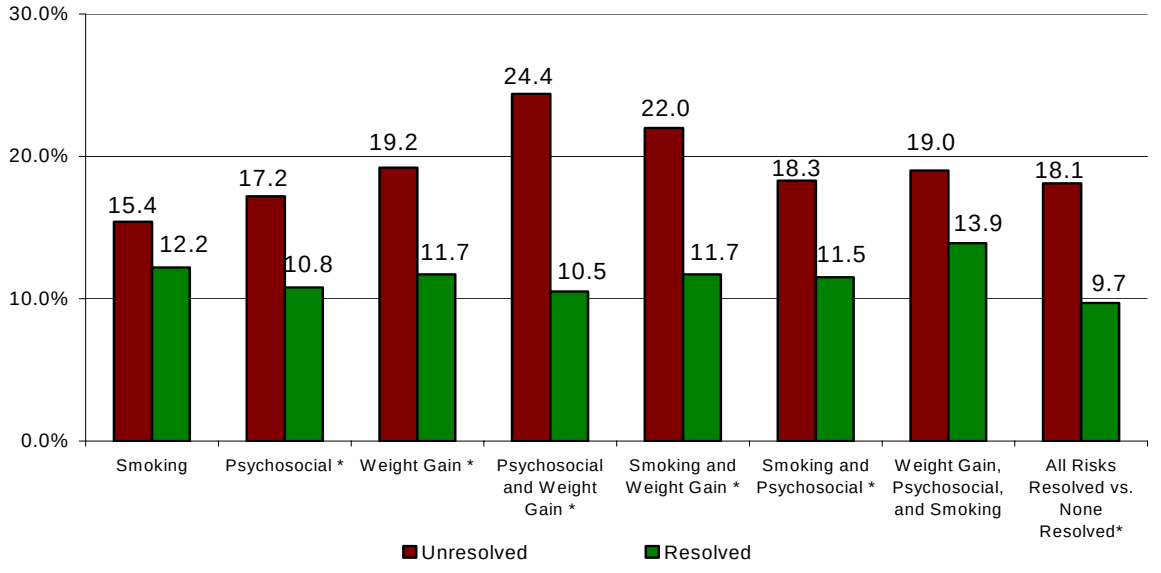
Without Prenatal Plus services, however, the low birthweight rate for the Prenatal Plus population was expected to be 13.8 percent, based on the recent experience of other women on Medicaid with the same risks as the 2005 Prenatal Plus cohort who did not receive Prenatal Plus services. Risk resolution through participation in the Prenatal Plus Program improved birth weights for women in the program, resulting in the 12.6 percent low birthweight rate, 9 percent lower than the expected rate, and statistically significant as well.

Most differences in low birthweight among women who resolved risks and women who did not resolve their risks achieved statistical significance. For women who quit smoking during pregnancy, the low birthweight rate was 12.2 percent. For women unable to quit smoking, the rate was 15.4 percent. Among women who resolved psychosocial risks, the low birthweight rate was 10.8 percent; among those unable to resolve this risk, the low birthweight rate was 17.2 percent.

The low birthweight rate for women who gained adequate weight was 11.7 percent versus 19.2 percent for those women who did not gain adequate weight during pregnancy. For underweight women (pre-pregnancy BMI < 19.8 kg/m^2), inadequate weight gain risk was identified in more than 8 in 10 women (84 percent). Among these women, nearly one-third (29 percent) delivered low birthweight infants if the inadequate weight gain risk was not resolved by the time she delivered. This rate was nearly cut in half, to 15 percent, for underweight women who gained adequate weight by the time they delivered.

When Prenatal Plus Program participants who were able to resolve all their risks are grouped together, regardless of whether they had one, two, or three risks[9], we find a low birthweight rate of 9.7 percent. By contrast, Prenatal Plus women who did not resolve any of their risks had a significantly higher low birthweight rate of 18.1 percent. Of the 1,702 women who delivered in the program, 769 resolved all of their risks compared to only 191 who were unable to resolve any of their risks. Figure 4 shows the large differences in low birthweight when risk is resolved. These differences underscore the fact that addressing risk and providing assistance in achieving risk resolution results in improved birth weights and fewer low birthweight infants. (See Table 3 on page 19 of the Appendix for more details.)

Figure 4 : Low Birthweight Rates for Prenatal Plus Clients
Unresolved Risks vs. Resolved Risks, 2005 Deliveries



* statistically significant difference

Program data has consistently shown that women who are able to resolve their risks are less likely to deliver a low birthweight infant. An analysis of the Prenatal Plus Program and its success with reducing low birthweight appeared in the November 2005 issue of the *American Journal of Public Health*.[10] "Reducing Low Birthweight by Resolving Risks: Results from Colorado's Prenatal Plus Program" provides data and results for 2002.

[9] This group consists of women at weight gain and/or smoking and/or psychosocial risk, and excludes those who were only at risk for drug and/or alcohol. However, virtually all women at drug and/or alcohol risk were also at risk for weight gain, smoking, or psychosocial problems.

[10] Ricketts et al., "Reducing Low Birthweight by Resolving Risks: Results from Colorado's Prenatal Plus Program," *American Journal of Public Health*, November 2005, p.1952-57.

COST SAVINGS TO MEDICAID, 2005

The Prenatal Plus Program cost study report, *The Effects of the Prenatal Plus Program on Infant Birth Weight and Medicaid Costs*, demonstrates the program's effectiveness in reducing Medicaid costs associated with low birthweight.[11] The study, completed in 2001, demonstrates that for every $1 spent on Prenatal Plus services, $2.48 is saved in Medicaid costs annually. For each infant born, the savings is estimated at $1,349[12]. Costs for low birthweight infants are 5 to 9 times the level for a normal weight infant. Savings are found for all infants and mothers in the program because their health costs are lower than for other Medicaid infants and mothers not in the program. In 2005, the Prenatal Plus Program saved Medicaid an estimated $3.1 million dollars in health care costs for the 2,354 women and their infants (through their 1st year of life) who received Prenatal Plus services. However, focusing only on the cost savings does not fully recognize the long-term impact of low birthweight. The health and quality of life for low birthweight infants are often compromised for many years. This may result in substantial cost to families and society related to long-term learning problems, dependence on programs that serve special-needs individuals, and ongoing stress to families caring for low birthweight infants.

Of the 1,720 infants born to Prenatal Plus participants, only 216 infants were low birthweight and the other 1,504 infants were born at normal weights. It is expected that these same women would have had 237 low birthweight infants if they had not received Prenatal Plus services. The Prenatal Plus Program therefore prevented an estimated 21 low birthweight births during 2005.[13] Since the Prenatal Plus Program began in 1996, an estimated total of 839 infants have been born at normal weight instead of low birthweight.

As part of program evaluation, a cost analysis is completed bi-annually by each agency to demonstrate program cost effectiveness. The results of the analysis in 2005 showed that the median costs for providing the program were more on target with reimbursement rates from Medicaid than in past years. This is partially due to the Medicaid restructure of reimbursement rates in July 2004 to more appropriately reimburse the model care packages. Agencies also use data collected from the cost analyses to continuously evaluate high cost services and determine ways to improve these. The revised reimbursement rate structure was cost neutral for Medicaid.

SUMMARY

A key strategy to improving the low birthweight rate in Colorado requires addressing the behavioral, nutritional, and psychosocial risks that contribute to poor birth outcomes. The Prenatal Plus Program does precisely this and has demonstrated year after year that excellent results can be achieved when these risks are identified and intervention is

[11] Complete cost study report available at: http://www.cdphe.state.co.us/pp/womens/PrenatalPlus.asp

[12] Adjusted for 2005 costs using Bureau of Labor Statistics Data; Consumer Price Index: Medical care http://www.bls.gov/cpi/home.htm

[13] The estimates of the reduction in the number of low weight births are based on the experience of other women on Medicaid who had the same risk factors as Prenatal Plus clients, but who were not enrolled in the program. Data on this group of women is based on Pregnancy Risk Assessment Monitoring System surveys for 2000-2004.

targeted toward a high-risk population. The unique multi-disciplinary approach of the Prenatal Plus Program allows professionals with expertise in individual risk areas to effectively address the varied risks of each woman, while working together as a team to ensure comprehensive care is provided throughout pregnancy. The goal of reducing the number of low birthweight infants born to program participants was achieved again in 2005. The program experienced a decrease in the rate of low birthweight infants from the expected rate of 13.8 percent to the actual rate of 12.6 percent, a difference that was statistically significant.

The vast majority of women in the program are able to resolve all or some of their risk factors and consequently achieve improved birth weights. During the past two years the program has seen a significant increase in the number of women who are receiving model care. Model care further increases the proportion of women who are able to resolve their risks and results in more infants born at a normal weight. In addition, the program is successful in improving a woman's psychosocial and nutritional health status; assisting her in developing and maintaining healthy lifestyles during pregnancy and postpartum, especially discouraging the use of tobacco, alcohol, and illicit drugs; and increasing her ability to appropriately use resources, including medical and social services.

An increasing rate of low birthweight infants in Colorado is a major concern due to the considerable financial and societal costs. Infants weighing less than 5 pounds 8 ounces at birth are more likely to experience costly medical and other problems that can continue for many years. The estimated savings of $3.1 million to Medicaid, for health care expenses for 2005 Prenatal Plus Program participants and their infants during the first year of life, is substantial. This does not account for the considerable cost savings for the infant beyond the first year of life.

Over the past 10 years the Prenatal Plus Program has had a substantial positive impact on the health of mothers and their infants. The program plans to further explore the impact it could have on those infants currently born just under the low birthweight cutoff and the ability to increase further the number of normal weight infants born to program participants. The Prenatal Plus Program looks forward to continued success.

Appendix

Prenatal Plus Program Providers, 2005

Boulder County Health Department- Genesis Program: Boulder and Longmont

Chaffee County Public Health: Buena Vista and Salida

Clear Creek County Nursing Service: Idaho Springs

Clinica Campesina: Lafayette, Northglenn, and Denver
(Boulder, Adams and Denver counties)

Colorado Adolescent Maternity Program- University Hospital: Aurora
(Denver, Arapahoe and Adams counties)

El Paso County Health Department: Colorado Springs

First Steps of Weld County: Greeley

Fremont County Nursing Service: Canon City

Garfield County Public Health Nursing Service: Glenwood Springs

Healthy Beginnings: Loveland

Jefferson County Health Department: Arvada, Lakewood, and Conifer

Kit Carson County Health and Human Services: Burlington

Larimer County Health Department: Estes Park, Ft. Collins, and Loveland

Montezuma County Health Department: Cortez

Northwest Colorado Visiting Nurse Association: Craig and Steamboat Springs
(Moffat and Routt counties)

Peak Vista Community Health Center: Colorado Springs (El Paso County)

Planned Parenthood of the Rocky Mountains: Denver (Denver Metro area counties)

Pueblo City/County Health Department: Pueblo

Pueblo Community Health Center: Pueblo (Pueblo County)

Salud New Horizons Teen Clinic: Brighton (Adams County)

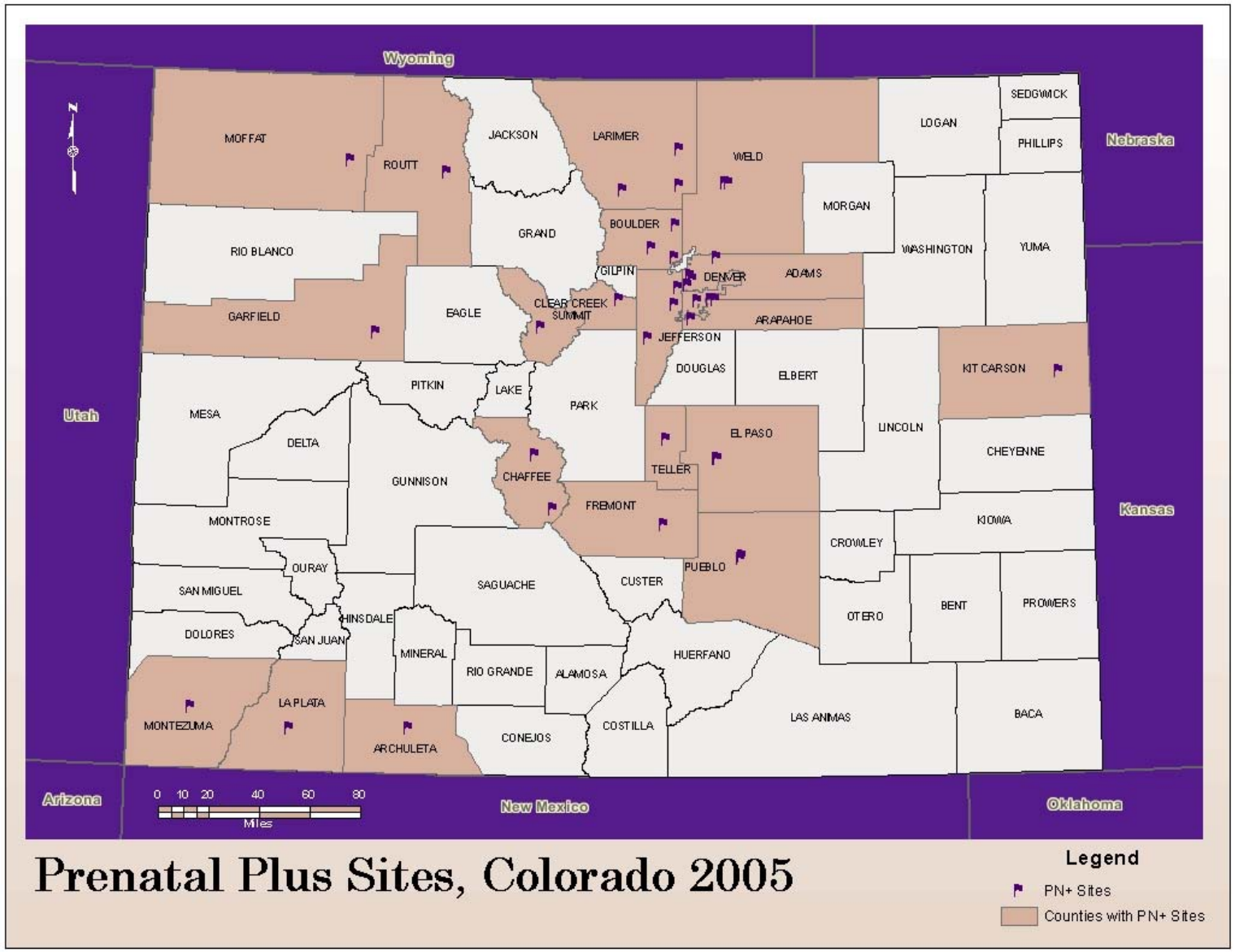
San Juan Basin Health Department: Durango and Pagosa Springs
(La Plata and Archuleta counties)

Summit County Nursing Service: Frisco

Teller County Public Health: Woodland Park

Tri-County Health Department: Aurora, Englewood, Northglenn
(Adams, Arapahoe and Douglas counties)

Weld County Health Department: Greeley


Wyoming
Nebraska
Utah
Kansas
Arizona
New Mexico
Oklahoma
MOFFAT
ROUTT
JACKSON
LARIMER
WELD
SEDGWICK
LOGAN
PHILLIPS
MORGAN
RIO BLANCO
GRAND
BOULDER
WASHINGTON
YUMA
GILPIN
DENVER
ADAMS
GARFIELD
EAGLE
CLEAR CREEK
SUMMIT
ARAPAHOE
JEFFERSON
DOUGLAS
ELBERT
KIT CARSON
PITKIN
LAKE
PARK
MESA
DELTA
EL PASO
LINCOLN
CHEYENNE
GUNNISON
CHAFFEE
TELLER
FREMONT
MONTROSE
KIOWA
CROWLEY
OURAY
PUEBLO
SAGUACHE
CUSTER
SAN MIGUEL
OTERO
BENT
PROWERS
HINSDALE
DOLORES
SAN JUAN
MINERAL
RIO GRANDE
ALAMOSA
HUERFANO
LA PLATA
MONTEZUMA
ARCHULETA
CONEJOS
COSTILLA
LAS ANIMAS
BACA
0 10 20 40 60 80
Miles
Prenatal Plus Sites, Colorado 2005
Legend
PN+ Sites
Counties with PN+ Sites

Risk Definitions

Alcohol Risk: A woman is at alcohol risk if she reports any current use of alcohol; any alcohol use after conception, including prior to knowledge of pregnancy; any use within the 3 months prior to conception.

Drug Risk: A woman is at drug risk if she reports any current use of marijuana, cocaine, heroin, amphetamines or other illicit drug, or misuse of prescription drugs; any use after conception, including prior to pregnancy confirmation; any use within the 3 months prior to conception.

Psychosocial Risk: A woman is at psychosocial risk if she is experiencing significant or severe stress as a result of personal/family safety needs, lack of support systems, or an inability to meet her basic needs. Examples of psychosocial risk include, but are not limited to: domestic violence; sexual assault; child abuse/neglect; lack of food, clothing or shelter; lack of transportation; lack of family/biological father's support/involvement; or diagnosable mental illness.

Smoking Risk: A woman is at smoking risk if she reports any current use of tobacco; any tobacco use after conception, including prior to pregnancy confirmation; any use within the 3 months prior to conception.

Weight Gain Risk: A woman is at weight gain risk if she has at any time: weight gain below the appropriate line on the weight grid, weight loss below pre-pregnancy weight in the 1st trimester, or weight loss of 2 pounds or more in the 2nd or 3rd trimester, or weight gain of less than 2 pounds per month in the 2nd or 3rd trimester.

Risk Resolution: A client stops the risk behavior – quits smoking, quits drinking, quits drug use, gains an adequate amount of weight during pregnancy, or improves psychosocial issues to a point where they no longer constitute serious problems.

Table 1
Characteristics and Initial Risk Factors of Women in the Prenatal Plus Program, 2002-2005

Characteristic/ Initial Risk Factor	Percent of Prenatal Plus Clients with Characteristic or Initial Risk Factor				Percent of All Women Giving Birth in Colorado*
	2002 n=3,569	2003 n=3,516	2004 n=3,759	2005 n=2,354	2005 n=68,922
Smoking	44	42	43	56	21
Alcohol Use	32	28	29	43	61
Drug Use	14	14	17	22	n.a.
Teenager (19 or younger)	30	30	32	32	10▲
Not Married	74	77	81	81	26▲
Education Less Than 12 Years	55	54	54	43	22▲
Unintended Pregnancy	69	70	69	66	39
Weight Gain Risk	53	39	40	45	25
Psychosocial Risk	76	75	74	72	n.a.
Psychosocial and Weight Gain Risk	44	30	32	34	n.a.
Smoking and Weight Gain Risk	23	15	16	23	n.a.
Smoking and Psychosocial Risk	35	32	33	42	n.a.

* Pregnancy Risk Assessment Monitoring System (PRAMS), based on a random sample of births (2004).
▲ Information from 2005 Colorado birth certificate data.
n.a. Indicates information is not available from Colorado birth certificate data or PRAMS data.

Table 2
Initial Risks and Risk Resolution Rates for Women Who Received Model Care vs. Women Who Did Not Receive Model Care, 2005

Risk Factor	Number and Percentage of Prenatal Plus Clients With Known Resolved Risk Factors*						P**
	Model Care (at least 10 visits)			Did Not Receive Model Care (less than 10 visits)			
	At risk n	Resolved n	Resolved %	At risk n	Resolved n	Resolved %	
Psychosocial risk	638	491	77	579	428	74	0.01
Smoking	480	309	64	415	224	54	0.01
Weight gain risk	416	319	77	393	285	73	ns▲
Psychosocial and weight gain risk	325	183	56	287	156	54	ns▲
Smoking and weight gain risk	227	110	48	170	65	38	0.05
Smoking and psychosocial risk	371	189	51	316	129	41	0.01
Psychosocial, smoking, and weight gain risk	188	71	38	138	41	30	ns▲

* Percent resolved included those with initial risk and known risk resolution. Clients may have other risks in addition to the specified risk; risk categories are not mutually exclusive in this table. Resolution of two risks means resolution of both risks. Resolution of three risks means resolution of each of the three risks.

** Chi-square test comparing the resolution rates for those women who received model care vs. those women who did not. A value of .01 means there is less than a 1/100 likelihood that the results happened by chance. A value of .05 means there is less than a 1/20 likelihood that the results happened by chance.

▲ ns= not significant.

Table 3
Low Birthweight Rates Among Prenatal Plus Program Clients Who Delivered:[14] Risk Resolved vs. Risk Unresolved, 2005

Risk Factors	Low Birthweight Rates (%)		P**
	Risk Resolved	Risk Unresolved*	
Smoking	12.2	15.4	ns▲
Psychosocial	10.8	17.2	0.01
Weight Gain	11.7	19.2	0.01
Psychosocial and Weight Gain	10.5	24.4	0.01
Smoking and Weight Gain	11.7	22.0	.05
Smoking and Psychosocial	11.5	18.3	0.10
Weight Gain, Psychosocial, and Smoking	13.9	19.0	ns▲
All Risks Resolved vs. None Resolved	9.7	18.1	0.001

* Unresolved includes women who were unable to resolve the specified risk or risks during pregnancy.

** Chi-square tests comparing the low birthweight rates for clients who resolved risk vs. those who did not yielded the levels of significance shown. A value of .001 means there is less than a 1/1000 likelihood that the results happened by chance. A value of .01 means there is less than a 1/100 likelihood that the results happened by chance. A value of .05 means there is less than a 1/20 likelihood that the results happened by chance. A value of .10 means there is less than a 1/10 likelihood that the results happened by chance.

▲ ns = not significant

[14] The low birthweight rates shown in Table 3 are calculated for those women who remained in the Prenatal Plus Program through delivery. No information is available on the birthweights of the infants of women who left the Prenatal Plus Program before delivery.