

Factors Associated with First Trimester Prenatal Care: An Evaluation of Presumptive Eligibility in Five Colorado Local Health Agencies

March 2011

Introduction

Funding from the Maternal and Child Health Services Block Grant (Title V) is provided to states to improve maternal and child health. In order to evaluate progress, the Maternal and Child Health Bureau has defined national performance indicators for key priority areas. Performance Measure 18 monitors the percent of infants born to pregnant women receiving prenatal care beginning in the first trimester. In 2008, only 76.9 percent of pregnant women in Colorado received first trimester prenatal care. The target for reporting year 2010 is 77.0 percent.¹ Colorado falls below the (latest available) national average of 83.7 percent² and well below Healthy People 2010 Objective 16-6a, which recommends that 90 percent of pregnant women enroll in first trimester prenatal care.

Among births in Colorado, 34 percent are paid for by public health insurance programs, Medicaid or Child Health Plan *Plus* (CHP+). An even lower percentage of first trimester prenatal care among this subpopulation contributes to the overall low performance described above. In fact, among pregnant women on Medicaid, only 65.1 percent received first trimester prenatal care during 2009.³

Presumptive eligibility (PE) is federal legislation that allows eligible pregnant women to receive 45 days of temporary medical coverage through Medicaid and CHP+ while eligibility for full health care benefits is determined. The purpose is to encourage pregnant women to receive adequate prenatal care in the earlier months of their pregnancy and to ensure qualified providers of payment for the prenatal care. Presumptive eligibility is based on the premise that increasing access to early prenatal care reduces adverse pregnancy outcomes.⁴ To be eligible for presumptive eligibility, an applicant household's declared income cannot exceed 250 percent of the federal poverty level.

In Colorado, Maternal and Child Health (MCH) funds are distributed to county health departments. The recipient health agencies complete a plan indicating how they will use the funding to address documented MCH needs within their community. Five local health agencies are currently using their MCH funds to provide presumptive eligibility

¹ Department of Public Health and Environment. Maternal and Child Health Services Title V Block Grant State Narrative for Colorado, Application for 2011, Annual Report for 2009. September 2010: 85-88.

² Department of Public Health and Environment. The Health Status of Colorado's Maternal and Child Health Population, Colorado. June 2010.

³ Department of Public Health and Environment, Vital Statistics, Birth Certificate Data. 2010.

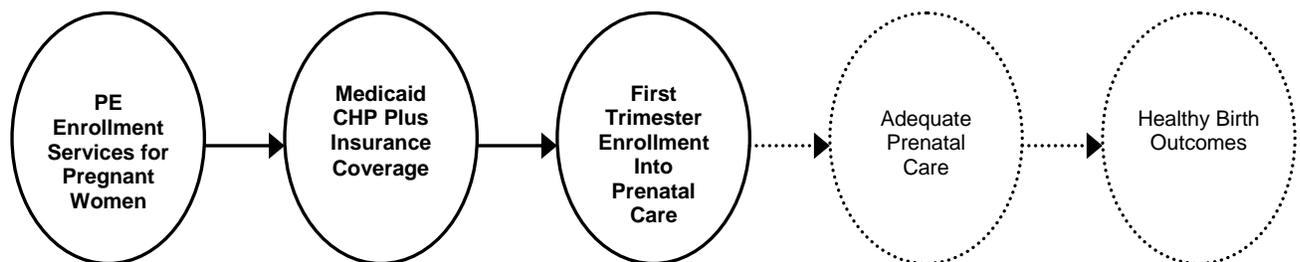
⁴ Alexander GR and Kotelchuck M. Assessing the Role and Effectiveness of Prenatal Care: History, Challenges, Directions for Future Research. Public Health Reports. 2001(Jul-Aug);116(4):306-316.

application and determination services for pregnant women, in an effort to improve first trimester enrollment into prenatal care. This involves assisting pregnant women with the collection of required documentation and completion of the application, making an initial determination of eligibility (presumptive eligibility) and submitting and tracking the paperwork for final determination of eligibility by the Department of Health Care Policy and Financing. During 2009-2010, an evaluation of these services at the five local health agencies was completed. Agencies were asked to implement the evaluation with existing MCH funding and focus on the MCH role as it relates to access to care. This report provides a summary of the results of this evaluation and discussion of the next steps. The report highlights the following: 1) the rate of first trimester prenatal care for women receiving presumptive eligibility services compared to rates for the total Medicaid population, and 2) the demographic and program characteristics that were associated with the receipt of first trimester prenatal care for women receiving presumptive eligibility services.

Workgroup Formation

The MCH program formed an Access to Care State and Local Planning Workgroup. The purpose of this workgroup was to examine existing enabling service strategies, including presumptive eligibility services, and to build support for systems building and community mobilization activities. From the workgroup, an evaluation subcommittee was formed and a flowchart was developed (figure 1), which illustrates the processes associated with access to care from enrollment into presumptive eligibility to healthy birth outcomes. The subcommittee focused the evaluation on the first three processes, which included the impact of PE enrollment services on first trimester prenatal care enrollment rates.

Figure 1. MCH Access to Care Evaluation Subcommittee Flow Chart



Evaluation Methods

Participants

Pregnant women aged 19 and older who qualified and enrolled in Medicaid presumptive eligibility through the five local health agencies were the subjects of the evaluation. The participants may have been involved in case management programs such as Prenatal

Plus and the Nurse Family Partnership, in addition to receiving presumptive eligibility services. While the age of pregnant women is not a criterion for presumptive eligibility, the evaluation subcommittee determined that participants ages 18 and younger would present a different set of circumstances, including additional consents for minors, that would increase time and burden on local health agencies to collect survey data, therefore, this age group was excluded.

Participants entered presumptive eligibility through one of the participating Colorado local health agencies involved in the evaluation. These agencies included:

- Broomfield Health and Human Services
- Jefferson County Public Health
- Larimer County Department of Health and Environment
- San Juan Basin Health Department
- Tri-County Health Department

Data Source

The 20-item Prenatal Care Assurance Telephone Survey was the primary data source for this evaluation. The survey collected demographic data such as county of residence, parity, marital status and education level. Medicaid enrollment questions addressed previous or first-time coverage, problems applying for Medicaid, receipt of final Medicaid determination, number of days to receive final Medicaid determination and number of days to initiate prenatal care. Participants were also asked about their participation in case management programs such as Prenatal Plus, Nurse-Family Partnership or other local programs. Date variables included date of birth, expected date of delivery and date of first prenatal care visit. Based on this information, age and first trimester enrollment status were calculated. A full copy of this instrument can be found in the Appendix.

Pilot Survey

The evaluation subcommittee piloted the survey with 35 women over the phone between April and June 2009. The pilot was conducted to test the construct validity of the proposed survey questions. Each participating local health agency collected 5 to 14 surveys, depending upon the number of participants successfully contacted during the three month period.

The pilot determined that 45.7 percent of women enrolling into presumptive eligibility services applied because they lost coverage or their ability to pay, and had actually begun prenatal care before enrollment. These participants were systematically excluded from the subsequent evaluation, since first trimester prenatal care had already been provided. A preliminary question regarding why Medicaid coverage was needed was added to the survey to efficiently identify applicable survey participants. If a respondent's answer indicated she was enrolling in presumptive eligibility because she lost coverage after starting prenatal care, the survey was not conducted.

Local health agency staff administered the revised telephone survey to the target population between February and July 2010, at least 60 days after the completion of the presumptive eligibility application. To the extent possible, participants were asked for their consent to participate on the day of presumptive eligibility enrollment. This was not possible for participants called within the first 60 days of implementation since they had enrolled in presumptive eligibility prior to implementing the survey process. Therefore, these participants were asked for their consent to participate when telephone contact was made.

Data Analysis

The focus of this evaluation was on receipt of first trimester prenatal care. Specifically, the study sought to determine the extent to which women who receive presumptive eligibility services obtain prenatal care during their first trimester of pregnancy. And, what characteristics are associated with receipt of first trimester care. Therefore, the dependent variable was defined according to those who received prenatal care during the first trimester and those who did not receive prenatal care during the first trimester. This was determined by comparing the 'end of first trimester date' to the 'date of first prenatal care appointment'. For purposes of the evaluation, prenatal care did not include visits to obtain pregnancy tests or emergency room visits.

Summary statistics were calculated, including the number and percentage of completed surveys by participating local health agency. Demographic and program characteristics of the survey respondents are also summarized.

Using SPSS, tests were conducted to identify which factors or characteristics of enrollment are associated with first trimester prenatal care among women enrolled in presumptive eligibility, based on Hosmer and Lemeshow's statistical methods.⁵ Chi square statistics were computed to test for differences between each characteristic of interest and the two levels of the dependent variable. Statistical significance was tested at the $p < .10$ level.⁶ Crude odds ratios were then calculated for those characteristics that were significant based on the chi square, which were tested at $p < .05$.

Small sample sizes are a known limitation in the study design and may have impacted power to detect statistical significance.

Results

Summary Statistics and First Trimester Prenatal Care Rates

Three hundred sixty surveys met the pre-established criteria for inclusion in the evaluation. Forty one were missing data to determine the timing of their first prenatal care appointment. Therefore, a total of 319 surveys were included in the statistical analyses.

⁵ Hosmer DW, Lemeshow S. Applied Logistic Regression. 2nd ed. New York: Wiley-Interscience; 2000.

⁶ Hosmer and Lemeshow would utilize a p value less than .25 for this step.

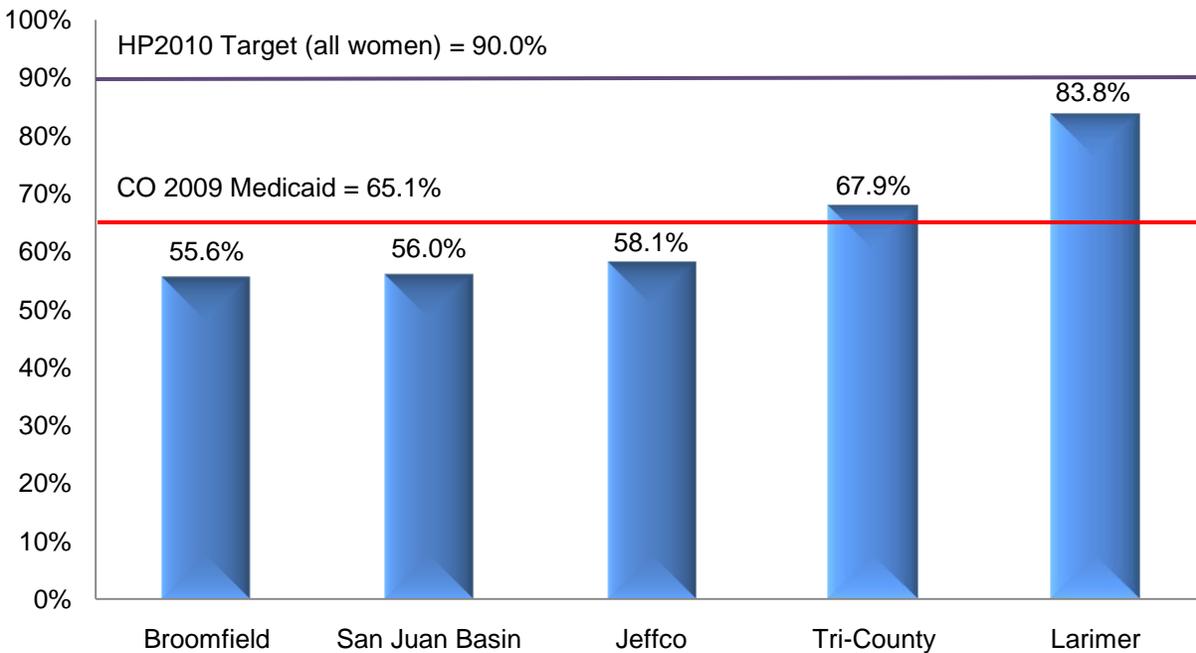
Table 1. Number and percentage of completed surveys for first trimester prenatal care (PNC) by participating local health agency

Local Health Agency	First Prenatal Care Appointment					
	Received PNC during 1st trimester		Did not receive PNC during 1st trimester		Total	
	number	%	number	%	number	%
Tri-County	108	67.9%	51	32.1%	159	100.0%
Jefferson	25	58.1%	18	41.9%	43	100.0%
Larimer	62	83.8%	12	16.2%	74	100.0%
Broomfield	10	55.6%	8	44.4%	18	100.0%
San Juan Basin	14	56.0%	11	44.0%	25	100.0%
Total	219	68.7%	100	31.3%	319	100.0%

Among the 319 women surveyed, 68.7 percent received prenatal care within the first trimester. Among the larger population of pregnant women on Medicaid, 65.1 percent received first trimester prenatal care during 2009.⁷ As mentioned previously, the Healthy People 2010 target is for 90 percent for all pregnant women to be enrolled in first trimester prenatal care. Figure 2 presents the percentages of first trimester prenatal care for each of the participating local health agencies compared to the percent of Medicaid statewide and the target for Healthy People 2010. The total number of women served at each local health agency during the time period the survey was implemented was unavailable, and therefore total response rates could not be calculated. Therefore, we cannot say with certainty that the distribution of women receiving and not receiving prenatal care during the first trimester who were surveyed represents the true distribution of all women served.

⁷ Colorado Department of Public Health and Environment, Vital Statistics, Birth Certificate Data. 2010.

Figure 2. Percentage of first trimester prenatal care



Demographic and Program Characteristics

Table 2 describes the demographic and program characteristics of survey respondents. Of all the survey participants, 59 percent (183 of 309) were between the ages of 19 and 24, 88 percent (275 of 313) were from Metro Denver, 52 percent (160 of 309) were having their first child, 72 percent (229 of 316) were single⁸, and 74 percent (235 of 319) were high school graduates or higher.

The program characteristics show that 82 percent (258 of 316) had no problems applying for Medicaid, 76 percent (242 of 319) had already received their Medicaid card or notification of Medicaid eligibility when surveyed, and 75 percent (180 of 241) received it within 45 days. The number of days from the enrollment date for presumptive eligibility to their first prenatal care appointment was within 14 days for 62 percent (170 of 274) of women.

The Utilization of Prenatal Plus and Nurse Family Partnership

A notable finding is in the small numbers and percentage for enrollment in Prenatal Plus or Nurse Family Partnership. Of the 319 women receiving presumptive eligibility services, regardless of whether or not they received first trimester care, only 54 (17 percent) were enrolled in either of these case management programs. Only 24 (7 percent) were enrolled in Prenatal Plus and 31 (10 percent) were enrolled in Nurse Family Partnership.⁹ Presumptive eligibility does not appear to drive enrollment into these programs.

⁸ Single includes separated, divorced, widowed and other

⁹ One participant was reported as enrolled in Prenatal Plus AND Nurse Family Partnership but is counted as one in the total 54.

Characteristics Associated with Receiving First Trimester Prenatal Care

Based on chi-square tests (Table 2, page 8), two characteristics were associated with receiving first trimester prenatal care:

- First child ($p=.076$)
- Enrolled in Prenatal Plus or Nurse Family Partnership ($p=.060$)

Among pregnant women having a first child, 73.8 percent received prenatal care during their first trimester, whereas only 64.4 percent of women having their second or later child received first trimester prenatal care. Among pregnant women enrolled in Prenatal Plus or Nurse Family Partnership, 79.6 percent received prenatal care during their first trimester, whereas only 66.4 percent of women not enrolled in either program received first trimester prenatal care. There is less than a 10 percent probability that these results would have been obtained based on chance alone.

The remaining demographic and program characteristics including age, geographic location, marital status, educational attainment, and enrollment characteristics (problems applying for Medicaid, Medicaid card or notification received, etc.), do not appear to be associated with receiving prenatal care during the first trimester.

Table 2. Demographic and program characteristics* of survey respondents by timing of prenatal care (PNC)

Characteristic		Received PNC during 1st trimester n = 219 (68.7%)	Did not receive PNC during 1st trimester n = 100 (31.3%)	Total n = 319 (100.0%)	Chi-Square P-value	
		Number (%)	Number (%)	Number (%)		
Demographic Characteristics	Age	25 and older	87 (69.0%)	39 (31.0%)	126 (100.0%)	0.948
		19 - 24 years old	127 (69.4%)	56 (30.6%)	183 (100.0%)	
		Unknown	5	5	10	
	Geographic location	Metro Denver	188 (68.4%)	87 (31.6%)	275 (100.0%)	0.750
		Not in Metro Denver	25 (65.8%)	13 (34.2%)	38 (100.0%)	
		Unknown	6		6	
	First child*	Yes	118 (73.8%)	42 (26.3%)	160 (100.0%)	0.076
		No	96 (64.4%)	53 (35.6%)	149 (100.0%)	
		Unknown	5	5	10	
	Marital Status	Single†	159 (69.4%)	70 (30.6%)	229 (100.0%)	0.636
Married		58 (66.7%)	29 (33.3%)	87 (100.0%)		
Unknown		2	1	3		
Educational attainment	High school graduate§	164 (69.8%)	71 (30.2%)	235 (100.0%)	0.465	
	Less than high school	55 (65.5%)	29 (34.5%)	84 (100.0%)		
Program Characteristics	Problems applying for Medicaid	No	178 (69.0%)	80 (31.0%)	258 (100.0%)	0.607
		Yes	38 (65.5%)	20 (34.5%)	58 (100.0%)	
		Unknown	3	0	3	
	Medicaid Card or notification received	Yes	168 (69.4%)	74 (30.6%)	242 (100.0%)	0.599
		No	51 (66.2%)	26 (33.8%)	77 (100.0%)	
	Number of days from PE date to Medicaid Card	1 to 45	126 (70.0%)	54 (30.0%)	180 (100.0%)	0.942
		41 days or more	43 (70.5%)	18 (29.5%)	61 (100.0%)	
		Unknown	50	28	78	
	Number of days from PE date to first prenatal care appointment	1 to 14 days	119 (70.0%)	51 (30.0%)	170 (100.0%)	0.640
		15 days or more	70 (67.3%)	34 (32.7%)	104 (100.0%)	
		Unknown	30	15	45	
	Enrolled in Prenatal Plus	Yes	19 (79.2%)	5 (20.8%)	24 (100.0%)	0.248
		No	200 (67.8%)	95 (32.2%)	295 (100.0%)	
	Enrolled in Nurse Family Partnership	Yes	25 (80.6%)	6 (19.4%)	31 (100.0%)	0.130
		No	194 (67.4%)	94 (32.6%)	288 (100.0%)	
Enrolled in Prenatal Plus or Nurse Family Partnership	Yes	43 (79.6%)	11 (20.4%)	54¶ (100.0%)	0.060	
	No	176 (66.4%)	89 (33.6%)	265 (100.0%)		
Enrolled in other prenatal case management program	Yes	6 (100.0%)	0 (.0%)	6 (100.0%)	n/a (small n)	
	No	210 (68.0%)	99 (32.0%)	309 (100.0%)		
	Unknown	3	1	4		

*Unknown excluded from the analyses

†Single includes separated, divorced, widowed and other

§High school graduate and higher

¶ One participant was reported as enrolled in Prenatal Plus AND Nurse Family Partnership but is counted as one in the total 54.

The Odds of Receiving First Trimester Prenatal Care

The crude odds ratio (OR) is a measure of association used to assess the odds of an event occurring among one group as compared to the odds of that event occurring in another group. If the odds of an event are the same for both groups then we get an odds ratio of one. An odds ratio greater than one suggest that there is a positive association between the characteristic and accessing prenatal care in the first trimester. An odds ratio less than one suggest that there is a negative association between the characteristic and accessing prenatal care in the first trimester.

Women who were enrolled in either Prenatal Plus or Nurse Family Partnership were nearly twice as likely to receive prenatal care during their first trimester (OR=1.98, p=.060) than women who were not enrolled in one of these programs. Women who were having their first child were one and a half more times likely to receive prenatal care during their first trimester (OR=1.55, p= .077) than women having their second or later child. There is less than a 10 percent probability that these results would have been obtained based on chance alone.

Table 3. Crude odds ratios for first trimester prenatal care

Characteristic	Crude Odds Ratio	Significance
Enrolled in Prenatal Plus or Nurse Family Partnership*	1.98	0.060
First child*	1.55	0.077

* It is likely that the small size of the sample may have impacted the detection of a statistically significant result.

Discussion

Evaluation is an essential step in the public health process and is a useful tool to determine if MCH activities are delivering a significant impact. This survey provided an opportunity for local public health agencies to learn how evaluation can help shape local public health programming. In a time of limited resources, evaluation becomes even more critical as results can assist agencies in determining where best to target efforts.

This survey examined the utility of enrolling individual clients into presumptive eligibility (PE) services and the impact on first trimester prenatal care. Overall, the percentage of women who applied for PE who received first trimester prenatal care was 68.7 percent for this sample, which is well below the Healthy People 2010 first trimester care recommendation of 90 percent. In three of the five counties participating in this evaluation project, first trimester enrollment into prenatal care was lower than the 2009 state average for Medicaid clients of 65.1 percent. Of the remaining sites, Tri-County had rates slightly higher than the state Medicaid rate and Larimer County demonstrated the highest rate of first trimester enrollment of all participants with nearly 84 percent of

women receiving care in the first trimester. Larimer County's success may be attributable to systems-building efforts to facilitate improved access to care at the population-based level. The agency effectively engages their case management programs, community programs and the medical provider community, which helps ensure early enrollment in prenatal care. As an example, Poudre Valley Family Medicine and Salud Community Health Center hold open appointments for pregnant women on Medicaid to assure women can access services within two weeks. The success of this approach demonstrates that PE services in conjunction with a broader system of services may work more effectively than a focus on one-on-one application services for pregnant women.

Women enrolled in prenatal case management programs (Prenatal Plus or Nurse Family Partnership) had increased odds of receiving first trimester prenatal care. While enrollment in a case management program may increase first trimester prenatal care, the number of women enrolled in these programs was small. PE services do not appear to drive enrollment into these programs. Additionally, one of the functions of these case management programs is to assure enrollment in prenatal care, therefore these results may be a reflection of the case management activities rather than PE services.

Potential Impact of State & National Health Care Reform Initiatives

Improved Colorado Medicaid coverage - The Colorado Healthcare Affordability Act, HB09-1293, signed by Governor Ritter on April 21, 2009, authorizes the Department of Health Care Policy and Financing (HCPF) to collect a hospital provider fee, which has been used to expand health care coverage to more than 100,000 Coloradans. In 2010, HCPF expanded Medicaid eligibility for parents up to 100 percent of the federal poverty level and Child Health Plan *Plus* eligibility for children and pregnant women up to 250 percent of the federal poverty level. HCPF expects to expand health care benefits for adults without dependent children up to 100 percent of the federal poverty level in early 2012. This expanded eligibility will facilitate a higher number of non-pregnant women with health care coverage, which has the potential to increase early access to prenatal care and may decrease the need for PE services.

HCPF is also working on an eligibility modernization initiative to streamline the application process by replacing paper documentation with electronic data where possible; developing web-based services for client eligibility determination; and creating interfaces to other State and Federal systems to ease data exchange for eligible populations.¹⁰ The combination of these improvements to the Medicaid application process should make it easier for clients to apply for public health insurance programs in the future.

Health care reform - On March 23, 2010, President Obama signed into law the Patient Protection and Affordable Care Act, which expands health care coverage over the next several years. Barring any changes to this legislation, starting in 2014, this will expand

¹⁰ Colorado Department of Health Care Policy and Financing website accessed on December 23, 2010 at: <http://www.colorado.gov/cs/Satellite/HCPF/HCPF/1251574721194>

health care coverage through Medicaid to all individuals with incomes below 133 percent of the federal poverty level. This is a significant change from the current Medicaid program, which provides very limited coverage for women who are not pregnant. This expansion of Medicaid eligibility will similarly increase the number of non-pregnant women with health care coverage, and also has the potential to increase early access to prenatal care.

Next Steps for Colorado's Maternal and Child Health Program

In 2010, Colorado's Maternal and Child Health (MCH) Program conducted a statewide needs assessment to determine future program priorities. Priorities identified for 2011 – 2015 focused on efforts that will demonstrate measurable improvement in the health and well-being of maternal and child health populations within five years.

The results of this survey helped inform next steps for MCH funding. Addressing access to care is now included under efforts to reduce barriers to a medical home approach by facilitating collaboration between systems and families. Activities under this priority focus on population-based systems level change, which has the potential to impact access to care for more clients than the provision of individual client assistance in Medicaid enrollment. There is an MCH Implementation Team dedicated to providing guidance and direction on MCH plan development and implementation for this priority. The new direction will focus on reducing barriers to care by addressing local and statewide systems. PE as a component of a larger coordinated system provides clients with a more robust set of services and engages medical providers to help women achieve first trimester prenatal care.

Appendix

Definitions Used

The following is a list of terms and definitions used for the evaluation:

Prenatal care- refers to medical services during pregnancy but does not include pregnancy tests or an emergency room visit

1st trimester- the first 90 days (12.86 weeks) of pregnancy

Gestational period- generally is 280 days (40 weeks)

Co-occurring programs-

- Prenatal Plus – is a Medicaid-funded program which provides care coordination, nutrition, and mental health counseling to Medicaid-eligible pregnant women in Colorado who are at high risk for delivering low birth weight infants.
- Nurse Family Partnership- is a program that partners first-time moms with nurse home visitors. A specially trained nurse visits throughout the pregnancy and until the baby turns two years old.

