



health policy solutions

**Comprehensive Prenatal Care Services in Colorado
for Low-Income Pregnant Women:
Access and Coordination Issues**

**Finding and Recommendations
to the Healthy Mothers Colorado Task Force**

FULL REPORT

August 2009

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The Colorado Health Foundation*

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HEALTHY MOTHERS COLORADO (HMC) PROJECT BACKGROUND

Today, more than one in three Colorado births – approximately 26,000 -- are paid for by Colorado Medicaid or Child Health Plan Plus (CHP+), the state’s main public health insurance programs that are administered by the Colorado Department of Health Care Policy and Financing (HCPF). For a variety of reasons, some of these low-income pregnant women fail to get timely prenatal care and experience adverse birth outcomes, such as preterm delivery, low birthweight infants, and infant mortality. As a state, Colorado underperforms on a variety of maternal and child health (MCH) indicators both relative to the national average and to Healthy People 2010 goals. The unfavorable levels of some MCH indicators among clients enrolled in Colorado’s public health insurance programs mean that Medicaid and CHP+ have a major stake in this substandard performance. Furthermore, improvements in statewide rates will require focused attention on these populations.

With support from the Rose Community Foundation and the Colorado Health Foundation, the Healthy Mothers Colorado (HMC) Task Force formed to better understand the barriers and gaps in policies and delivery systems that contribute to this performance. Recognizing that MCH indicators and outcomes result from multiple and sometimes interrelated factors, the Task Force sought to focus its attention on the question of access to comprehensive and coordinated prenatal care services for low-income women who are enrolled in publicly-funded health insurance programs (Medicaid or CHP+). (See Appendix A for a list of individuals and organizations that have participated in HMC Task Force meetings.)

Sponsored jointly by the Colorado Children’s Healthcare Access Program (CCHAP) and the HealthyWomen-HealthyBabies (HWHB) Roundtable, the activities of the HMC Task Force have been endorsed by the Colorado Section of the American College of Obstetricians and Gynecologists, the Colorado Academy of Family Physicians (COAFP), and the Colorado Chapter of the American College of Nurse-Midwives, Colorado Nurse Midwives (CNM). Initially, the Task Force focused on information gathering activities. Tracy Johnson, Ph.D., of Health Policy Solutions was retained for this purpose. This report presents the findings of this needs assessment and makes recommendations for HMC Task Force consideration.

Scope of the HMC Needs Assessment

The HMC needs assessment took place over an eight month period from November 2008 through July 2009 with the following target population and scope (see also, Appendix C Needs Assessment Plan).

Target population: Pregnant women on Medicaid (including Emergency Medicaid) and CHP+

Scope of study:

- Access to comprehensive prenatal care, case management, and complementary services (e.g., smoking cessation, oral health care, mental health screening and services, nutrition services, substance abuse treatment)
- Coordination of care between prenatal care providers (clinical and enhanced service providers) as well as postnatal coordination between prenatal care providers and the infant's provider.

Major information gathering and analytical activities:

- Reviewing the research
- Describing population characteristics
- Describing the delivery system capacity and characteristics
- Describing the delivery system performance
- Making recommendations

Major data sources:

- Published academic studies and MCH reports
- Medicaid and CHP+ program reports and special data requests
- CDPHE program and survey reports and special data requests
- HMC survey of prenatal care providers (See Appendix D)
- HMC survey of EPSDT case managers (See Appendix E)
- Task Force meetings and key informant interviews
- Medicaid and CHP+ budget and policy documents

Early meetings of the HMC Task Force discussed the multiple influences on prenatal care access and on birth outcomes that operate at the client, provider and systems levels. Ultimately, the Task Force decided to focus information-gathering efforts on the Colorado prenatal care delivery system characteristics, capacity and performance because these areas are the least well-documented and understood. Information from published reports and key informants on client- and system-level barriers to accessing prenatal care – such as lack of insurance coverage and client desire for services -- are included for context and completeness but are not the primary focus of the inquiry.

HPS was directed to focus initially on existing reports and secondary data sources to ensure that needs assessment activities did not duplicate existing information. HPS used special data requests, interviews, and provider and case manager surveys to fill in the gaps. One major gap identified through this needs assessment is the apparent lack of information available about MCH indicators and performance in the CHP+ program, the reasons for which are reviewed in the body of this report. As a result, the findings and the recommendations primarily focus on the Medicaid program, with observations about CHP+ provided as information allowed.

Findings and recommendations for the HMC Task Force are organized in the following manner:

- Overview
- Coverage
- Provider Characteristics and Capacity
- Provider Performance
- Client Demand and Outreach

FINDINGS AND RECOMMENDATIONS

SECTION 1: OVERVIEW

Early initiation of prenatal care – defined as care received during the first trimester – is a key indicator of maternal and child health. In addition to facilitating more accurate dating of the pregnancy, early receipt of prenatal care enables providers to identify women at high risk of complications and to ensure their receipt of appropriate services. The risk identification process includes a clinical work-up as well as assessment of behavioral or psychosocial risk factors (e.g., smoking, drug or alcohol use, poor nutrition, family violence.) Studies have shown that receipt of timely, comprehensive, and coordinated prenatal care services improves birth outcomes such as infant mortality.¹

What are “standard” and “comprehensive” prenatal care services?

From its origins in the 19th century, the concept of prenatal care was motivated by the desire to reduce maternal, fetal, and neonatal morbidity and mortality. Although researchers continue to debate the extent to which standard prenatal care reduces low birth weight rates, its effectiveness in reducing infant and maternal mortality rates is well-established. “Standard” prenatal care emphasizes medically-oriented interventions that focus on the detection, treatment, or prevention of clinical conditions that could lead to adverse maternal or fetal outcomes, for example, screening for albumin in the urine to detect pre-eclampsia. According to a history of the development of prenatal care, the origins of the traditional 13 visit schedule stem from concerns about eclampsia and complications of toxemia.² Despite evidence that the visit schedule may be reduced to 7 or 8 visits for low-risk women, most measures of prenatal care “adequacy” assume a 13 visit schedule.³

By contrast, “comprehensive” prenatal care is a broader set of activities than “standard” prenatal care and refers to an approach that integrates strategies to address non-clinical risk factors, such as maternal smoking, poor nutrition, and mental health conditions. As described by Alexander and Kotelchuck, “comprehensive prenatal care typically refers to routine prenatal care visits combined with ancillary services. Comprehensive prenatal care services (which may also be referred to as coordinated, augmented, enhanced, enabling, enriched, or “wrap-around” services) may entail outreach efforts to improve enrollment in prenatal care, Women, Infants, Children (WIC) program, case management, social work, psychosocial counseling, social support, health promotion/education, transportation, home visiting, and follow-up services to facilitate the on-going use of the prenatal care services offered.”⁴

Recommendations to provide Colorado women with an “enhanced package of maternity services” including case management, as needed, date back to at least 1988.⁵ Current and previous recommendations respond to the research on low birthweight and related indicators that suggest that non-clinical, “psychosocial” factors may be as important, and more modifiable, as clinical risk factors to improving birth outcomes.⁶ For example, research on low birth weight in Colorado identifies key drivers that are both clinical (e.g., premature rupture of the membranes) and non-clinical (e.g., inadequate weight gain and

smoking). The Colorado Department of Public Health and Environment estimated that Colorado's singleton low birth weight rate could be reduced by one-third if all pregnant women gained weight adequately and no pregnant woman smoked.⁷ Reviewing the evidence, researchers Alexander and Kotelchuck speculate that to the extent that prenatal care studies have demonstrated reductions in low birth weight rates, "addressing fetal growth restriction of term infants through nutrition and antismoking interventions may well have been the mechanism."⁸

Early, comprehensive prenatal care has been shown to promote health during pregnancy and reduce the risk of adverse birth outcomes by providing the opportunity to assess individual risk and provide appropriate medical, educational, and psychosocial services.^{9, 10, 11, 12, 13} As this report will emphasize, a variety of evidence-based programs and approaches to providing comprehensive prenatal care services exist, many of which are available but under-utilized in Colorado.

Colorado lags behind other states on first trimester prenatal care and other key MCH indicators

While several entities – the Colorado Department of Public Health and Environment (CDPHE), Health Care Policy and Financing (HCPF), the Colorado Business Group on Health (CBGH), and the Colorado Community Health Network (CCHN) -- track the receipt of first trimester prenatal care in Colorado, little information is collected about the content or comprehensiveness of these services.¹⁴ What is known is that over the last decade, Colorado's performance on first trimester prenatal care initiation and other key maternal and child health outcomes has lagged behind the national average among states and Healthy People 2010 goals.¹⁵

The Healthy People 2010 goal for first trimester initiation of prenatal care is 90 percent. In 2006, Colorado ranked 26th among all states with 79.7 percent of women receiving care in the first trimester, a rate clearly below the national average of 83.2 percent.¹⁶ While this state ranking is up from 44th in 2002, Colorado still trails the highest performing states of Maine and Massachusetts that have approximately 88% of their residents seeking prenatal care in the first trimester.^{17, 18} Some analysts have suggested that Colorado's low prenatal care rate may partially explain its high low birth weight rates.¹⁹ Furthermore, lack of early prenatal care misses an opportunity to identify and intervene early in high-risk pregnancies.²⁰

Receipt of first trimester prenatal care varies widely across Colorado communities, ranging from 52.6% to 100% in 2007. (See Appendix F: First Trimester Prenatal Care Rates by County and Correlates.) Variability in performance among states and across Colorado counties suggest that better Colorado performance is possible.

Who is at risk?

An assessment of the adequacy of the prenatal care delivery system to provide comprehensive and coordinated services in Colorado requires articulating the major risk factors that need to be addressed in such a system. Thus, initial information-gathering activities focused on medical and social risk factors that are linked to adverse birth

outcomes, are prevalent among Medicaid and CHP+ women, and are potentially modifiable through comprehensive prenatal care services.

Women on Medicaid face somewhat higher medical risks than privately insured

Thirty-eight percent of Medicaid pregnant women have one or more medical risk factors during pregnancy, as compared to 32 percent of privately insured women. Medical risk factors include early labor, high blood pressure, vaginal bleeding, kidney/bladder infection and other common medical problems during pregnancy. According to 2007 birth certificate data, Medicaid pregnant women face a significantly higher risk of a previous preterm birth (2.0% vs. 1.4%), asthma (4.0% vs. 3.5%) and gestational diabetes (4.26% vs. 3.28%).²¹

Adolescents are more likely to be enrolled in Medicaid, and studies show that teen pregnancy increases certain risks for young mothers and their infants.²² On the other hand, the relative youth of the Medicaid population also carries some health benefits. Younger women are less prone to infertility – just 7.8% of women on Medicaid are over the age of 35 as compared to 22.3% of women who are not on Medicaid -- and therefore Medicaid enrollees are less likely to undergo infertility treatments that result in high-risk, multiple-gestation pregnancies. Women on Medicaid are also less likely to develop gestational hypertension (2.9% vs. 3.4%).²³ No similar data are available for CHP+ due to small numbers in the PRAMS survey sample and difficulty identifying CHP+ enrollees in the birth certificate data.²⁴

Psychosocial risk factors are as (or more) important to birth outcomes than medical risk factors; many are modifiable.

By definition, women on Medicaid and CHP+ are low-income because of income requirements to qualify for public coverage. The literature on the “social determinants of health” suggests that poverty exerts a consistently powerful and negative influence on health status and health outcomes.²⁵ Consistent with this theory, women on Medicaid have a significantly higher risk of psychosocial risk factors, as compared to privately insured women.

For example, of approximately 24,000 Medicaid births in FY07-08, an estimated:

- 14,000 (58.2%) were unintended (vs. 29.9% non-Medicaid)²⁶
- 10,000 (40.6%) were born to women who report 3 or more life stressors (vs. 17.6% non-Medicaid)²⁷
- 5,000 (19.5%) were born to women who reported feeling depressed during pregnancy²⁸
- 8,000 (31.6%) were born to women with inadequate weight gain, which is the largest contributor to singleton LBW²⁹
- 8,000 (31.2%) were born to women smoked before pregnant (vs. 17.7% non-Medicaid); smoking is the 2nd largest contributor to singleton LBW³⁰

Women on Medicaid also face higher risks of post-partum depression after delivery. An effective prenatal care delivery system for women on Medicaid would need to contend

with these social risk factors, as well as any clinical factors. Ideally, a comprehensive prenatal care system for Medicaid enrollees would be adapted to their distinctive medical and psychosocial risk profiles.

Not just women on Medicaid are at risk of poor outcomes

Several key informants stressed that although the focus of the needs assessment is on low-income and publicly-insured women, there are other women who are at risk of adverse outcomes and for whom prenatal care access is important.

For example, birth outcomes and MCH indicators for African American women of all incomes are often poorer, or less ideal, than other racial and ethnic groups. For example, racial disparities in mortality are observed in African American infants, and there continues to be a greater percentage of low birth weight in African American infants -- associated with a higher risk of preterm delivery -- than among white/non-Hispanic infants, both in Colorado and across the nation. In 2005, the U.S. percentage of white/non-Hispanic low-weight births was 7.3 percent compared to 14.0 percent among African American /non-Hispanic births. That same year, the Colorado percentages of low birth weight births for white/non-Hispanic and African American/non-Hispanic births were 9.2 percent and 15.3 percent, respectively.³¹ Reasons for large, persistent racial disparities in birth outcomes – that persist after controlling for income, education, and other known risk factors-- are not well-understood but some researchers are exploring theories of inadequate access to care, provider bias, and stress associated with racism.³²

Also, multiple births associated with infertility treatment and women who use alcohol before and during pregnancy are more common in non-Medicaid populations.^{33, 34} Although higher-income, privately-insured women were not the focus of this inquiry, some felt it important to acknowledge the broader dimensions of the adverse birth outcome problem in Colorado.

SECTION 2: COVERAGE NEEDS AND OPTIONS FOR LOW- AND MIDDLE-INCOME WOMEN

To understand the extent to which comprehensive prenatal care services are available to women on Medicaid and CHP+, it helps to understand the basic structures of the programs. The following questions guided the exercise to describe the coverage policies for low-income women:

- **What coverage options exist to serve low-income pregnant women?**
- **Who is currently served and NOT served? Why?**
- **What and where are the unmet needs and policy barriers?**

The findings about coverage draw on analyses of Medicaid claims and eligibility data, state budget documents, FQHC encounter data, the HMC prenatal care provider survey, and interviews with program administrators, and other key informants.

Key Findings:

- **Women and infants benefit when women enter pregnancy healthy;**
- **Lack of insurance coverage is a barrier to recommended care before, during and after pregnancy;**
- **Insufficient subsidized insurance options exist in CO, especially for low-income women of child-bearing age;**
- **Low-income women tend to have gaps in coverage and little continuity of care, especially before pregnancy and post-partum;³⁵**
- **Medicaid and CHP+ pay for more than one-third (34%) of all Colorado births;**
- **Women on Medicaid who entered prenatal care late identify financial/insurance barriers (e.g., delays in receiving Medicaid card) as the primary reason for late receipt of prenatal care;**
- **Eligibility policies and systems are key to timely prenatal care, because financial/insurance barriers are the primary reason for late prenatal care;**
- **States with more generous subsidized insurance options and efficient eligibility policy & systems tend to have better prenatal care initiation rates and improved continuity of care;**

- **As Colorado implements new subsidized coverage options, the need to ensure smooth transitions between programs & eligibility categories will increase.**
- **Recent state efforts to modernize eligibility systems may improve access to prenatal care.**

THE ROLE OF COVERAGE IN FACILITATING ACCESS TO CARE FOR PREGNANT WOMEN

Healthy women are more likely to have healthy pregnancies

According to perinatal care experts, both maternal and child health outcomes are maximized when women enter a pregnancy healthy. While healthy habits – such as, good nutrition and exercise – are especially important to achieving good health, it also requires adequate access to family planning, well-woman care and preconception care, as well as prenatal care and post-partum care.³⁶ Lack of health care coverage is a major barrier to achieving these goals.

More women need insurance subsidies than qualify for them

Subsidized coverage options for low- and middle income women and families are limited relative to the need for financial assistance. For example, a recent study conducted by the Colorado Center on Law and Policy collected detailed financial and spending information from 1,000 participants from nearly 100 Colorado communities. It concluded that very few individuals and families under 200% of the federal poverty level (FPL) – approximately \$45,000 for a family of four -- can contribute anything to the cost of insurance which can run \$12,000-\$15,000 annually for family coverage.³⁷ Under 300% FPL – around \$65,000 for a family of four -- most need a substantial subsidy to be able to afford coverage. Even families under 400% FPL often need some degree of subsidy.

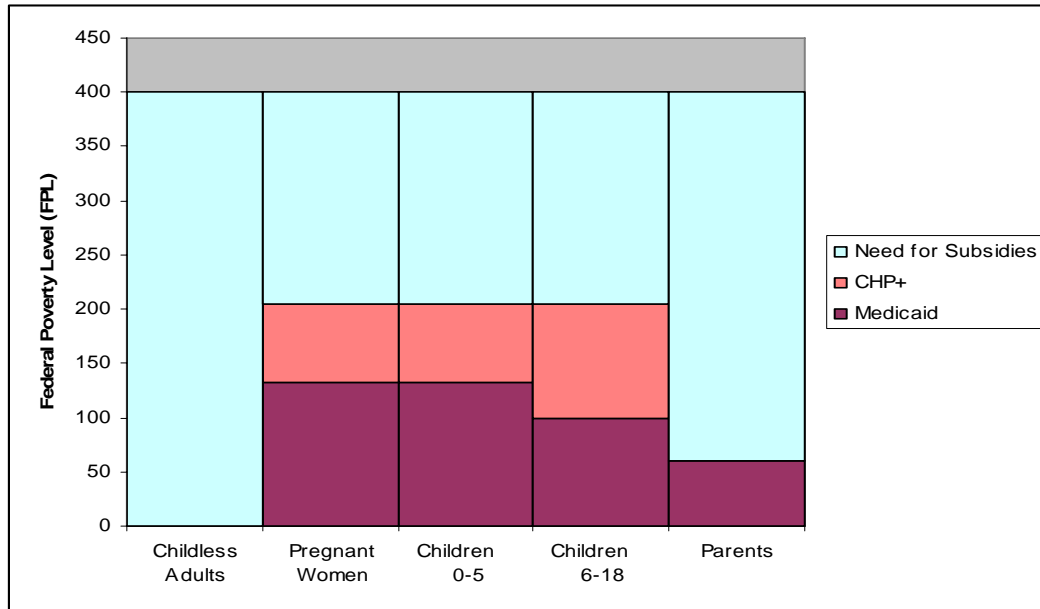
Currently, the most generous publicly-subsidized coverage options are reserved for pregnant women. Today, Colorado Medicaid and CHP+ provide nearly free coverage to pregnant women below 205% FPL. By contrast, income requirements for parents are stricter with only those under 60% FPL qualifying for coverage. See Figure 1. This means that many pregnant women lose their Medicaid coverage approximately 60 days after delivery.³⁸ Losing coverage soon after giving birth makes certain maternal conditions difficult to treat effectively (e.g., post-partum depression, most chronic conditions such as high blood pressure or diabetes) and often makes it difficult to address family planning needs.

Medicaid paid for just over 24,000 births in 2008, and CHP+ paid for just under 2,000, for a combined total of approximately 26,000 births. However, almost one-third of the Medicaid births were to women who qualify for limited, delivery-only services (“Emergency Medicaid.”)

Medicaid benefits are more comprehensive than CHP+ benefits

Both Medicaid and CHP+ cover standard, medically-oriented prenatal care and delivery services. However, Medicaid also covers several ancillary programs and services – such as Prenatal Plus, Nurse-Family Partnership, and Special Connections -- that meet the definition of “comprehensive” prenatal care services. CHP+ does not reimburse for client participation in any of these programs. Neither program covers preventive dental services for pregnant women, which was highlighted as a problem by many surveyed.

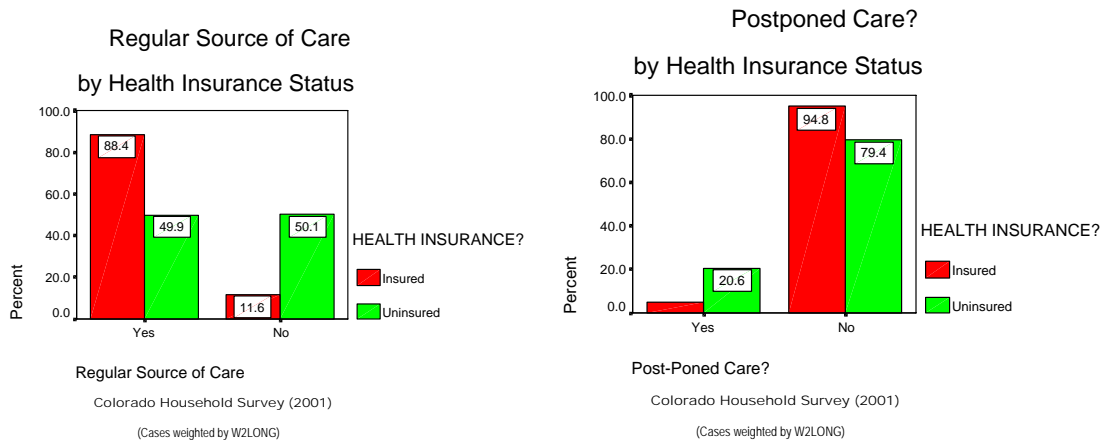
Figure 1: Current Medicaid and CHP+ Income Eligibility Ranges



Low-income women tend to have had gaps in coverage and little continuity of care

Given the limited nature of current Medicaid eligibility, only 28% of women who had a Medicaid-paid birth were already on Medicaid before the pregnancy (FY07-08).³⁹ This is because Medicaid income requirements are more generous for pregnant women than they are for parents or childless adults. (See Figure 1.) Nationally, two-thirds of low-income pregnant women were uninsured before becoming pregnant, many of whom have Medicaid-paid births. According to surveys of the uninsured in Colorado, the uninsured are less likely to have a usual source of care and more likely to delay needed care.⁴⁰ (See Figure 2.) As a result, many pregnant women enter pregnancy with unmet health needs.

Figure 2: Likelihood of having a regular source of care or postponing care, among insured and uninsured Coloradans



Several prenatal care providers who accept Medicaid and who were interviewed for this study commented on the high rates of untreated conditions observed in women on Medicaid, such as dental disease, STDs and depression. While many of these conditions are not ideally managed during pregnancy, the risk of maternal or birth complications due to untreated disease often outweighs the risks of treatment.^{41,42}

Providers are also very aware that after delivery, many women on Medicaid are likely to become uninsured again. Perversely then, pregnancy has become a 10-month “coverage window” for low-income women, during which providers attempt to catch up on missed and delayed care. Many providers voice frustration with the lack of continuity of care afforded by this type of coverage policy. (See Text Box.)

Pregnancy-only coverage does not promote health or encourage continuity of care

Human Papillomavirus is a common STD that, in women, can cause cervical cancer if left untreated. I see it frequently in my obstetrical patients, however, it is much more likely to be previously undiagnosed in my Medicaid patients. This means I have to do diagnostic procedures (colposcopy and cervical biopsy) that carries a small risk of bleeding. Depending on the biopsy results, I may also have to treat during pregnancy or as soon as possible after delivery, before her Medicaid [eligibility] runs out.

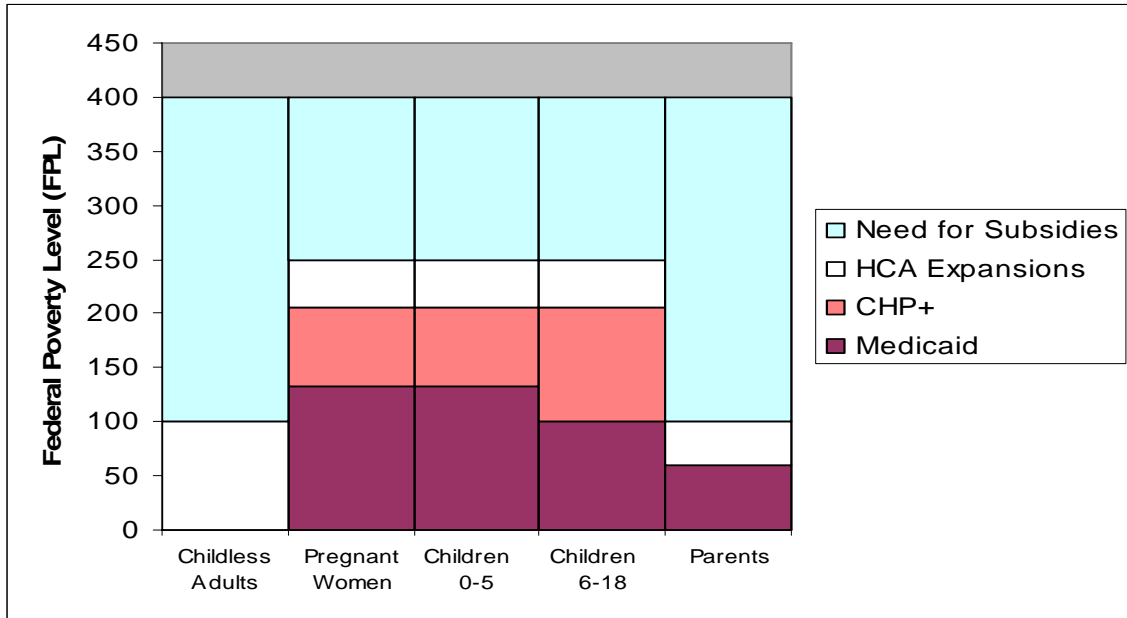
~~ Private Practice Ob/Gyn Physician

Recent coverage expansions promise to increase access and improve continuity of care

As Figure 3 illustrates, the recently passed Health Care Affordability Act (Colorado, 2009) extends Medicaid coverage for the first time to childless adults and lifts the income ceilings for parents to 100% FPL (Medicaid) and pregnant women to 250% FPL (CHP+). A separate piece of Colorado legislation removed the required five-year waiting period for legal immigrants to apply for Medicaid benefits, although funding for this expansion has not yet been identified. Also, pending federal approval, a planned family planning

waiver will extend a Medicaid-funded family planning benefit to uninsured low- and middle-income women and men below 200% FPL who do not qualify for Medicaid.

Figure 3: Current Medicaid and CHP+ Income Eligibility Ranges as well as Income Ranges for Planned Expansions under the 2009 Health Care Affordability Act



Combined, these coverage expansions promise to benefit pregnant women in several different ways. Setting an income ceiling of 250% FPL for pregnant women and children ensures that two of the state’s most vulnerable populations have access to nearly free health insurance and is consistent with the findings of the Colorado Center on Law and Policy affordability. Furthermore, the expansions that target non-pregnant populations benefit pregnant women too. Offering Medicaid coverage to all people below the federal poverty line – irrespective of their gender or family status – will greatly increase the likelihood that a woman (and her partner) will have had a regular source of care before she becomes pregnant. Hopefully, this will translate into better well-adult and preconception care as well as fewer unmanaged conditions during and after pregnancy.

Implementation ... the devil is in the detail

Several consumer advocates and policy experts interviewed for this assessment caution that several technical and budgetary issues complicate the planned implementation of coverage expansions. For example, the coverage expansions under the Health Care Affordability Act will be funded through a hospital provider fee, the outline of which is provided in legislation and the details of which are being handled by a governor-appointed committee. The exact amount of state and federal funds generated by the fee and available to finance the desired coverage expansions will necessarily depend on the final formula developed.

Similarly, the CHP+ expansion for pregnant women assumes that the federal arm of the Medicaid program will allow the state to amend its agreement (“waiver”) with the federal government to continue its current program for pregnant women under CHP+ and to allow for this expansion. Efforts to renew the CHP+ waiver are underway. HCPF has been in contact with its federal counterpart and feels confident that it will be able to obtain waiver renewal despite recent federal policy changes that affect this population.⁴³

Finally, the on-going recession remains a very significant concern, forcing budget cuts this year and next at the very least. Previously, planned coverage expansions have been delayed due to budget shortfalls and the need to identify revenues to cover existing programs. Many interviewed view economic recovery and/or significant federal action on health care reform as key to timely implementation of HCA and other coverage expansions. Economic recovery would return state revenues to pre-recession levels, while federal health care reform could provide additional federal funding and/or flexibility to states. Many of those interviewed felt that continued advocacy for coverage expansions will also be important. Furthermore, several underlined that even after successful implementation of these expansions, significant gaps in coverage remain and require sustained focus on covering all Coloradans with adequate subsidies for all who need them. (See Figure 1 for gaps in coverage.)

Recommendations to expand coverage options for low- and middle-income women to ensure access to family planning, well-woman services, preconception care, as well as prenatal and post-natal care.

- **Ensure timely implementation of new programs that expand coverage for low-income families and individuals.** Colorado has a history of delaying implementation of proposed coverage expansions due to budgetary or operational constraints. Coverage expansions authorized under the Health Care Affordability Act and the planned Medicaid family planning waiver hold great promise for low-income Coloradoans.
- **Ensure a sustainable safety net system to provide care for the uninsured.** Until all Coloradans are covered, safety net providers will be essential to provide care to those who do not qualify for public insurance and cannot afford commercial insurance.
- **Pursue coverage for all Coloradans.** Many of the states with good maternal and child health outcomes, such as Massachusetts, Vermont, and Maine, are further along the path to covering all people in Colorado.⁴⁴ In particular, these states extend subsidized coverage to a broader range of low-income women which reduces gaps in coverage that compromise access to all aspects of women’s health care: family planning, well-woman care, preconception care, prenatal care, and post-partum care.

ELIGIBILITY POLICY AND SYSTEMS AND ACCESS TO PRENATAL CARE

As already described, early comprehensive prenatal care is important to ensuring the health of the pregnant woman and the baby. Specifically, it permits:

- Accurate dating of the pregnancy
- Completing a clinical work-up as well as assessing for behavioral and psychosocial risk factors (smoking, drug and alcohol use, violence)
- Identifying women at high risk for a preterm birth or other perinatal complications and ensuring their receipt of appropriate services.

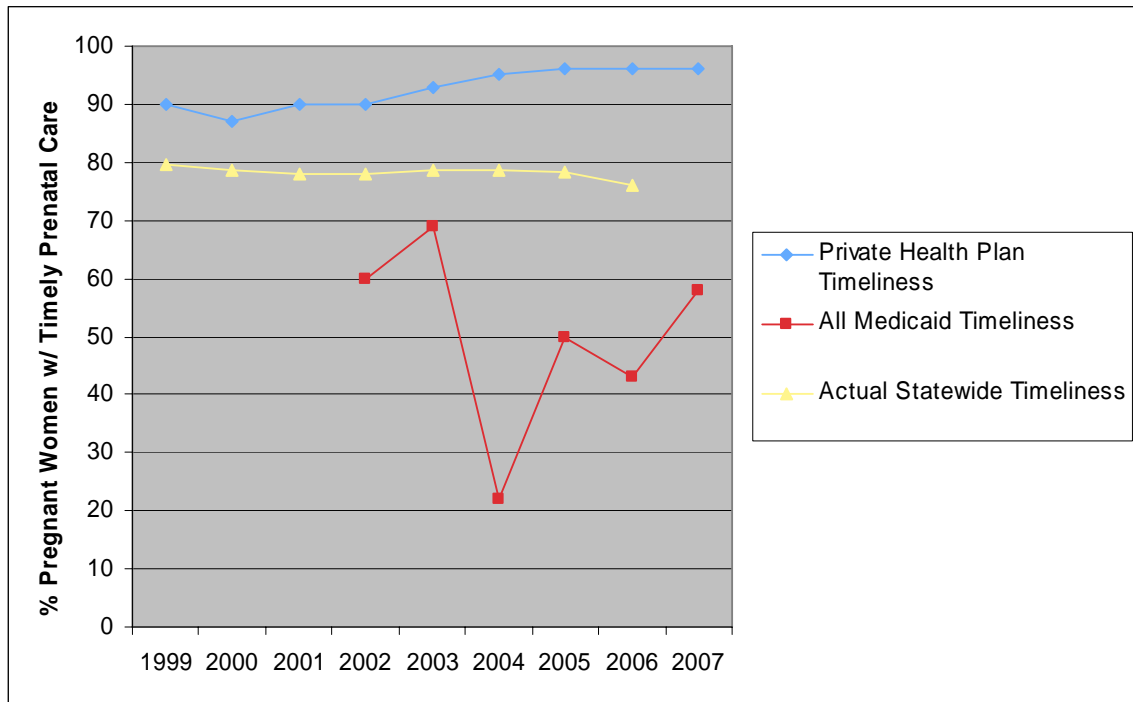
Timely prenatal care, especially for high-risk women, is associated with improved birth outcomes, including reduced infant mortality rates.

Medicaid is a Major Driver of Statewide Rates

Approximately 80% of pregnant women in Colorado receive their first prenatal visit in the first trimester, as illustrated in Figure 4. This rate has remained relatively stable over the last decade. A dip in the statewide rates in 2007 is attributed to a methodological change in rate calculation, specifically, CDPHE began to use medical records to corroborate self-reported information about prenatal care initiation.

Figure 4 illustrates that Medicaid is a major driver of statewide prenatal care timeliness rates. Visually, the statewide rate of first trimester initiation (yellow line) is between the rate for privately insured women (blue line) and women covered by Medicaid (red line). In addition, Figure 4 demonstrates that prenatal care timeliness is quite high for privately-insured women, with little room for improvement, suggesting that future improvements in the statewide rate will require focused attention on the Medicaid population. CHP+ does not collect information on timeliness of prenatal care for its enrollees, nor is this information readily available from birth certificate data.

Figure 4: Comparison of 1st Trimester Prenatal Care Initiation by Insurance Source: Private Insurance, Medicaid PCP, All Medicaid, and Statewide



Data Sources: Colorado Business Group on Health (Private Health Plan Timeliness)⁴⁵; HCPF HEDIS (All Medicaid Timeliness)⁴⁶; CDPHE Colorado Birth Certificate Data (Actual Statewide Timeliness)⁴⁷
Data Note: Definitions of timeliness vary depending on the data source, see endnotes for details.

Efficient eligibility and enrollment systems improve early prenatal care

Efficiently operating public insurance eligibility and enrollment systems play an important role in low-income women being able to access prenatal care in a timely manner or at all. According to the HMC prenatal care provider survey, many Medicaid providers, especially private providers, will not see pregnant women until their Medicaid eligibility has been definitively established.⁴⁸ Thus, enrollment barriers can contribute to lower rates of early prenatal care among low-income women. Delays in getting their Medicaid card is a common reason cited by women who received late prenatal care (after the first trimester) and “not as early as wanted.”⁴⁹

By federal law, states are required to process Medicaid applications within 45 days. In Colorado, county departments of human/social services are charged with making final decisions about eligibility and not all counties are in compliance with the 45-day rule. Since even timely (45 day) processing of applications competes with the time-sensitive goal of first trimester prenatal care, Medicaid offers a specialized eligibility process for pregnant women known as Presumptive Eligibility (PE).

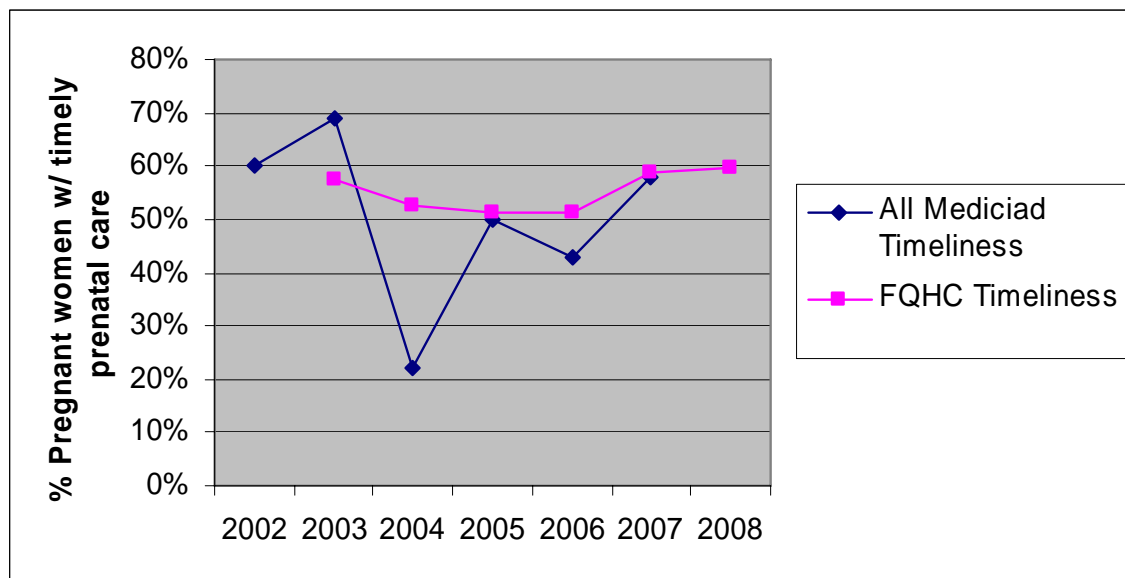
Presumptive Eligibility (PE) sites are certified by the state to collect Medicaid applications and empowered to deem low-income pregnant women as temporarily eligible for Medicaid services, pending a full application review by county eligibility

officials. During the “PE” period, pregnant women may seek Medicaid services and providers may obtain reimbursement for services received. This policy has been partially successful in encouraging providers to initiate prenatal care services during the PE period, with the assurance that they will be compensated, irrespective of the final eligibility decision. However, not all counties have PE sites and some providers are not willing to see patients until their Medicaid enrollment has been definitely established.

Case Study: Eligibility Crises in 2004

Figure 5 provides further evidence of the importance of eligibility processes to timeliness of prenatal care. In 2004, the state experienced major eligibility disruptions. Specifically, in September 2004, the state suspended its presumptive eligibility process amid concerns that undocumented women were receiving prenatal care services under the policy. Nearly simultaneously, HCPF implemented a new eligibility system – the Colorado Benefits Management System (CMBS) – that experienced a number of serious problems and resulted in greatly increased application processing times. This combination of changes to eligibility policy and systems contributed to a significant drop in Medicaid-paid first trimester prenatal care, with just 20% of women receiving timely Medicaid-paid prenatal care in 2004, as compared to nearly 70% in 2003.⁵⁰ (See Figure 5.)

Figure 5: Effects of Medicaid Eligibility and Enrollment Policy Changes in 2004 on Prenatal Care Timeliness (2002-2008)



Data Sources: HCPF HEDIS (All Medicaid Timeliness)⁵¹; Uniform Data Set (UDS) (FQHC Timeliness)⁵²
Data Note: Definitions of timeliness vary depending on the data source, see endnotes for details.

As will be described in more detail in Section 3, pregnant women on Medicaid are served by a mix of primarily federally qualified health centers (FQHCs), private providers, and hospital-based practices. However, whereas FQHCs and hospital-based practices commonly have sliding fee scale options for those without insurance, this practice is uncommon among private providers.

Delays in obtaining Medicaid eligibility resulted in increased demand for FQHC services. In 2005, total FQHC prenatal care patients (primarily Medicaid and uninsured) increased by 8% relative to the year before.⁵³ Total FQHC prenatal care patients decreased in 2006 relative to 2005. This is consistent with the theory that some women who had Medicaid eligibility delays in late 2004 and 2005, who otherwise would have sought care from other providers, instead sought free and reduced price prenatal care from FQHCs. First trimester initiation of prenatal care at FQHCs declined from 57.5% in 2003 to 52.8% in 2004 and 51.1% in 2005, suggesting that FQHCs had a difficult time fully absorbing this sudden increase in demand. (Or perhaps, it took patients some time to identify sources of free and reduced price care.) After presumptive eligibility was restored, demand for FQHC services returned to approximately pre-policy change levels. FQHC prenatal care rates similarly rebounded (59.7% in 2008).

Interestingly, Medicaid NICU admissions increased by a percentage point the following year.⁵⁴ Analysis to determine whether this increase in NICU admissions results from these eligibility barriers is beyond the scope of this study. However, a major breakdown in eligibility systems did appear to have an immediate and negative effect on low-income women's ability to access prenatal care in the first trimester.

State efforts to modernize eligibility hold promise

HCPF has announced several complementary initiatives to improve its eligibility policy and systems, including:

- Improvements to CBMS
- Eligibility modernization

In the short term, pregnant women benefit most from policies and procedures that shorten front-end application processing times so coverage can be established as quickly as possible. Currently, Presumptive Eligibility is the main strategy to address this concern. Arguably, however, PE is a “work-around” approach and real-time application processing would eliminate the need for it.

Longer-term, when more publicly-funded coverage options exist for low-income women, it will be important to ensure continuity of coverage. In the future, larger percentages of low-income women will be eligible for Medicaid coverage. Existing Medicaid coverage prior to becoming pregnant removes the barrier associated with the eligibility process and has been shown to increase the likelihood of receiving care. For example, women who were not enrolled on Medicaid prior to becoming pregnant were nearly twice as likely to receive no prenatal care as compared to women who already had Medicaid coverage when they became pregnant (11.5% vs. 6.6% with no prenatal care).⁵⁵

Recommendation to improve the efficiency of the Medicaid and CHP+ eligibility and enrollment systems to expedite application processing and to reduce gaps in coverage

- **Implement policies and practices that reduce eligibility determination time period.** Other states have reduced eligibility determination time frames with techniques such as: simplifying applications and documentation requirements, allowing applications to be submitted on-line, and building strong links between Medicaid pregnancy and family planning coverage. These methods to expedite application processes, especially when paired with intensive outreach efforts, have dramatically improved prenatal care timeliness in other states. For example, Louisiana – a poor state in which Medicaid pays for two-thirds of births – decreased eligibility processing time from 19 days to 5 days.⁵⁶ In 2007, Louisiana boasted a statewide first trimester prenatal care rate of 87%, ranking it 4th in the nation and competitive with much wealthier states such as Massachusetts. Many of these ideas are encompassed in recently passed legislation as well as HCPF’s recent federal grant application, and the agency should be encouraged to continue to pursue efforts to modernize the eligibility system even if this funding request is not successful.

- **Provide smooth transitions between eligibility categories to reduce gaps in coverage.** As HCPF expands eligibility to new groups, transitions between Medicaid and CHP+ and within eligibility categories within each program will become more common. For example, a woman may be enrolled in a limited Medicaid “family planning-only” benefit until she becomes pregnant and potentially eligible for CHP+. After delivery, she may decide to reduce her hours at work and become eligible for Medicaid. Predictable transitions between programs and eligibility categories should be anticipated and eligibility processes should be expedited.

SECTION 3: PRENATAL CARE DELIVERY SYSTEM CHARACTERISTICS AND CAPACITY

Based on the previous analyses, low-income pregnant women covered by Medicaid have a history of intermittent coverage, report unmet health needs, and have a higher than average incidence of medical and psychosocial risk factors. The HPS investigation into provider characteristics and capacity sought to assess the extent to which the Colorado delivery system is responsive to this patient profile. The following questions guided the exercise to describe the current prenatal care delivery system for low-income women:

- **Which providers comprise the current Medicaid/CHP+ delivery system for comprehensive prenatal care?**
- **How much capacity exists, statewide and regionally?**
- **Why do some providers not participate?**
- **Who is currently served and NOT served? Why?**
- **How well are services coordinated?**
- **What and where are the unmet needs and barriers?**

The findings draw on analyses of Medicaid claims and eligibility data, state budget documents, FQHC encounter data, actuarial analyses of provider rates, survey of EPSDT case managers, and the HMC prenatal care provider survey. Observations and perspectives of providers, program administrators, and other key informants provided additional detail and context to round out these quantitative analyses.

Key Findings:

- **Most Medicaid-paid prenatal care services in CO are not provided by ob/gyn physicians but are provided by federally qualified health centers, hospital-based practices, and family medicine practices;**
- **Additional Ob/Gyn physician consultation and referral is needed in some Colorado counties;**
- **Medicaid prenatal care reimbursement rates for private providers have not kept pace with inflation;**
- **Medicaid funding is a critical revenue source for federally qualified health centers (FQHCs);**
- **Most CO counties appear to have adequate provider capacity to provide prenatal care to pregnant women on Medicaid (at current levels of demand);**

- **Provider capacity gaps exist in certain rural counties, especially those with no federally qualified health centers and limited hospital services;**
- **Many of underserved counties have family physicians who do not provide prenatal care services, but barriers to sustaining and expanding Medicaid prenatal care services include: difficulty in arranging ob/gyn physician consultation/referral, low reimbursement, malpractice concerns, and long hours.**
- **Many low-income women enter pregnancy with unmet health needs, psychosocial needs, and access barriers and addressing these risk factors is critical to improving birth outcomes;**
- **Comprehensiveness of prenatal care services – especially provision of ancillary medical and psychosocial services, such as case management, transportation, nutritional counseling, dental care and mental health services -- is highly variable;**
- **FQHCs & hospital-based practices are more likely to provide enhanced services on-site; private providers more likely to refer for services, with uncertain success;**
- **Private providers are interested in identifying community resources for low-income pregnant women and strengthening community partnerships;**
- **Several evidence-based programs exist for addressing psychosocial risk factors in low-income pregnant women – Prenatal Plus, Nurse-Family Partnership, Healthy Start, Centering Pregnancy – but not all clients/providers know about services and funding limits capacity.**

STATEWIDE PROVIDER CAPACITY TO PROVIDE STANDARD PRENATAL CARE SERVICES IN COLORADO

Diverse providers provide standard prenatal care services for women on Medicaid

Currently, diverse types of health care providers are eligible to provide clinical services to pregnant women on Medicaid, including:

- Physicians/Osteopaths
- Certified Nurse-Midwives
- Nurse Practitioners
- Clinical Nurse Specialist
- Physician Assistant
- Family Planning Clinic
- Public Health Agency
- Non-Physician Practitioner Group⁵⁷

Eligible places of maternity service, including prenatal care, include:

- Office (e.g., private practice)
- Hospital
- Clinic
- Family planning clinic
- Public health agency
- Federally qualified health center
- Rural health center
- Birthing center
- Home

FQHCs and other non-ob/gyn providers provide most Medicaid-funded prenatal care

Determining the relative proportion of prenatal care provided by diverse Medicaid providers is surprisingly difficult. For reasons discussed in more detail in Section 4, HCPF does not have a routine reporting method for determining which of its participating providers provide prenatal care services.

At the request of Health Policy Solutions, HCPF data analysts compiled billing information to identify the largest providers of delivery services in each Medicaid-defined region of the state. Collectively, these large, regional providers delivered more than one-third of Medicaid-paid births in 2007. (See Figure 6.) Figure 6 focuses on *delivery* services rather than *prenatal care* services because the former is more readily identifiable than the latter in Medicaid billing databases for all relevant types of prenatal care providers. A google search concluded that most if not all of these large, regional providers of delivery services also provide prenatal care services.⁵⁸

Across 21 Medicaid regions, Figure 6 reveals that three main types of providers are attending the largest numbers of Medicaid deliveries: FQHCs, large group practices, and hospital-based practices:

- FQHCs (largest provider in 6 Medicaid regions),
- Group practices (largest provider in 8 Medicaid regions), and
- Hospital-based practices (largest provider in 7 Medicaid regions).

Figure 6: Medicaid Providers Seeing the Greatest Number of Clients for Deliveries by Region, FY 07-08

Providers Seeing the Most Clients for Deliveries, by Region				
Billing Provider HIPAA Region Code	Billing Provider HIPAA Region Description	Provider Name	Provider Type	Number of Clients Served
01	Garfield, Moffat, Rio Blanco	VALLEY VIEW HOSPITAL ASSOCIATION	Hospital CNM Practice	253
02	Eagle, Grand, Jackson, Pitkin, Routt, Summit	VAIL CLINIC INC	Hospital Practice	170
03	Mesa	WOMEN'S HLTH CARE OF W CO	Group Practice	197
04	Delta, Montrose, Ouray, San Miguel	FAMILY HEALTH CONNECTION	Group Practice	NR
05	Archuleta, Dolores, La Plata, Montezuma, San Juan	SOUTHWEST MIDWIVES INC	Hospital CNM Practice	88
06	Gunnison, Chaffee, Lake, Fremont, Park, Custer	STAPLES MD, PELHAM P	Group Practice	93
07	Hinsdale, Saguache, Mineral, Conejos, Rio Grande,	VALLEY WIDE HEALTH SYSTEMS INC	FQHC	252
08	Huerfano, Las Animas, Baca, Otero, Crowley, Bent,	PROWERS COUNTY HOSP DIST	Hospital Practice	126
09	Pueblo	PUEBLO COMMUNITY HLTH CNTR	FQHC	346
10	El Paso, Teller	PEAK VISTA COMMUNITY HEALTH CENTERS	FQHC	915
11	Washington, Morgan, Logan, Yuma, Phillips, Sedgwick	FAMILY CARE CLINIC	Group Practice	67
12	Elbert, Lincoln, Kit Carson, Cheyenne	KIT CARSON COUNTY HEALTH SERV DIST	Hospital Practice	NR
13	Douglas	FURR MD, WAYNE C	Group Practice	58
14	Boulder, Broomfield	CLINICA CAMPESINA	FQHC	785
15	Larimer	POUDRE VALLEY HEALTH CARE INC	Hospital Practice	323
16	Weld	PLAN DE SALUD DEL VALLE	FQHC	806
17	Adams	UNIVERSITY PHYSICIANS INC	Group Practices	1,522
18	Arapahoe	HEALTHONE CLINIC SERVICES LLC	Hospital Practice	400
19	Jefferson, Gilpin, Clear Creek	WESTSIDE WOMEN'S CARE	Group Practice	677
20	Denver	DENVER HEALTH & HOSPITAL AUTHORITY	FQHC	1,763
99	Default region for counties with no information	SECORA MD, CHARLES L	Group Practice	NR
Total Clients Served by "Largest" Providers in Each Region				8,915

Data Source: Department of Health Care Policy and Financing⁵⁹

Figure 7 combines several data sources to provide *rough* estimates of the proportion of women served by each of the three most common provider types: FQHCs, private practices, and hospital-based practices.

Figure 7: Estimates of the Proportion of women on Medicaid Served by Each Prenatal Care Provider Type⁶⁰

	Number of Medicaid-Paid Births	% Medicaid-Paid Births
FQHC	16,000	65%
Private Practice	5,000	20%
Hospital-based Practice	2,000	10%
No prenatal care	1,000	5%
Total	24,000	100%

Data Sources: HCPF eligibility data, PRAMS (2006-2007), UDS Data (2007-08)

Many Medicaid providers share a general profile

Key informant interviews and the HMC prenatal care provider survey reveal a common profile of practices and clinics that provide prenatal care to a high percentage of women on Medicaid: personal/organizational commitment to the population, community partnerships, use of advanced care practitioners, and financial congruence with Medicaid reimbursement practices.

A chief, shared characteristic across all Medicaid prenatal care provider types is a personal and/or organizational commitment to caring for low-income women and families. For example, federally qualified health centers (FQHCs) and family medicine residency programs have explicit organizational mission statements and federal requirements to serve the medically underserved.⁶¹ According to FQHC staff interviewed, focus on low-income populations is a primary reason that many providers and staff choose to work at community health centers. While private practices that see a large proportion women on Medicaid are less likely to have formal, written mission statements, interviews revealed similar personal motivations for serving low-income populations. As one ob/gyn physician commented, “Why else do people go into medicine if not to take care of those in need?” Similarly, a hospital-based certified nurse midwife stressed that “when we hire CNMs, we are looking for skills and a philosophy. Are they committed to caring for the underserved?”

Other shared characteristics of Medicaid prenatal care providers include the establishment of community partnerships to facilitate client access to complementary clinical and psychosocial services. Some providers (especially FQHCs) accomplish this by providing on-site, “co-located” clinical services and social programs, such as dental care, mental health services and the Women, Infants, and Children’s (WIC) program (a supplemental nutrition program).⁶² Other Medicaid providers, especially private providers, establish referral relationships with providers of key medical and non-medical services. Many private providers thought that referral relationships and community partnerships could be strengthened but lacked the time and resources to focus on this

area. For “non-ob/gyn providers” – family medicine physicians and certified nurse midwives -- securing adequate obstetrical supervision, back-up and high-risk referral relationships is an essential community partnership and one that is widely reported as being tenuous in some areas.

Medicaid reimbursement practices vary by provider type and greatly influence the financial sustainability of different practice models. Most, if not all, Medicaid prenatal care providers make extensive use of advanced practice staff, such as nurse practitioners and certified nurse midwives. However, as described below, other means to achieve “financial congruence” or financial sustainability with Medicaid payment policy varies according to provider-specific methods of reimbursement.

Medicaid providers find financial congruence with reimbursement methods

It is estimated that 65% -- a majority of the births listed in Figure 7 -- were attended by FQHC providers. FQHCs receive cost-based reimbursement for Medicaid prenatal care services, that is, reimbursement is based on actual costs incurred. Therefore, in addition to mission-driven motivations, there are strong financial incentives for FQHCs to serve Medicaid pregnant women. Also, Medicaid revenues are required finance the care of the 44 percent of Colorado FQHC clients who are uninsured.

By contrast, private prenatal care providers do not receive cost-based reimbursement but are paid a “global” fee that covers the entire continuum of care: prenatal care, labor and delivery, and postpartum care. Certain services, such as laboratory and ultrasound services, may be separately billed.⁶³ A recent actuarial analysis completed by COPIC consultants concluded that the Medicaid global fee has been losing ground relative to inflation. For example, based on 1990 reimbursement rates, routine obstetrical care resulting in a vaginal delivery (59400) should be \$1466.94 rather than \$1208.57 today, if rates had kept pace with inflation. Similarly, routine obstetrical care resulting in a cesarean delivery (59510) would be \$2138.98 instead of \$1450.63.

Although the Medicaid “global” fee for pregnancy services is widely viewed as low by private providers, certain practice models are more financially sustainable than others. Interviews with hospital-based clinics suggest that while hospitals lose money on prenatal care services provided to won Medicaid under the global fee, hospitals are able to offset this loss with the hospital facility charges for the delivery services they provide to clinic patients. In effect, hospital services subsidize the prenatal care provided in hospital-based clinics.

Comparatively and from a reimbursement perspective, private practices are the least well-positioned to provide prenatal care services to women on Medicaid. They are nonetheless key providers in several regions in the state. Private practices that see a large proportion of Medicaid clients tend to be larger group practices that are staffed by a combination of physicians, nurse practitioners, certified nursed midwives, and physician assistants, all of whom see women on Medicaid for prenatal care. This staffing model is similar to that employed by many FQHCs. Use of advanced practice nurses and other non-physician providers is cost-saving, because Medicaid permits private physician practices to bill the

same global fee irrespective of the type of provider that provides the services. However, small practices and sole practitioners, especially in rural areas, are often unable to hire multiple, additional clinical staff.

Provider capacity sufficient in most areas, except for certain rural areas

In the absence of routine, quantitative reports that describe the prenatal care delivery system, HCPF relies on county-based, state-funded “EPSDT case managers” to monitor capacity and to help clients navigate to available services. Among their other duties, EPSDT case managers are responsible for tracking which providers in their counties currently accept Medicaid for prenatal care, providing scheduling assistance to pregnant clients, and tracking average wait times for first available prenatal care appointment (which is an indirect measure of capacity.) As a result, these client advocates are an excellent source of information about how local prenatal care systems operate on the ground. It also provides a means to validate information supplied by providers. (See Appendix E.)

At the request of Health Policy Solutions, HCPF staff surveyed EPSDT case managers about prenatal care access in their respective county or service area. For a majority of Colorado counties, prenatal care access was identified as adequate, meaning that a woman who is 10 weeks pregnant is “likely” or “very likely” to obtain a prenatal appointment within 2 weeks and (during the first trimester). According to the HMC prenatal care survey, waiting times are generally shorter at FQHCs as compared to private ob/gyn and family medicine practices. This may explain why EPSDT case managers were especially likely to identify rural counties without FQHCs as potentially having access issues. (See Section, entitled “Rural Provider Capacity to Provide Clinical Prenatal Care Services in Colorado”.)

It should be noted that wait times for prenatal care depend on the current level of demand for services. For example, some counties with good prenatal care access also have low first trimester prenatal care rates, which may signal that other barriers are more significant in these areas. It is an open question as to whether all counties would have sufficient capacity if substantially more women sought care in the first trimester.

Additional Ob/Gyn consultation and referral is needed in some Colorado counties

To summarize, the best available (albeit limited) information suggests that the current Medicaid prenatal care delivery system is comprised of predominantly non-ob/gyn providers. Also, relative to current demand for services, this delivery system appears to provide adequate access to most (but not all) Colorado counties, because a woman who is 10 weeks pregnant is likely to be able to obtain a prenatal appointment within her first trimester.

Notably, the current delivery system depends on the availability and support of ob/gyn physician consultation, referral, and back-up. Ob/gyn physician consultation and referral can mean many different things. It may describe questions that arise during prenatal care, such as monitoring fetal conditions or advice on complex obstetrical issues. Referral relationships can include transfer of care for certain “high-risk” pregnancies, such as

women who have had a previous c-section or preterm labor, women who are expecting twins or multiple births, among other conditions. The types of conditions that result in a transfer of care to an ob/gyn physician largely depend on the referring providers' own training expertise as well as community (e.g., hospital) resources.

Providers who perform only low-risk, spontaneous vaginal deliveries may need additional expertise during labor and delivery when emergency services are required, such as, assisted vaginal delivery, repair of an obstetric laceration, severe postpartum bleeding, or cesarean section (surgical delivery). Any provider of obstetric services, including ob/gyn physicians, may need to call on back-up assistance – from physician partners, general surgeons, other surgical specialties – for complicated and life-threatening cases.

Recognizing the importance of this close collaboration, the American Academy of Family Physicians and the American College of Obstetricians and Gynecologists issued an AAFP-ACOG Joint Statement on Cooperative Practice and Hospital Privileges that encourages “obstetricians to provide consultation and back-up for family physicians who provide maternity care.”⁶⁴ Even clinics and practices with successfully established collaborative agreements noted that such relationships are often fragile and require on-going, careful nurturing. In some areas of the state non-ob physician providers feel that ob/gyn consultation and referral services are not adequate and need to be addressed in order to sustain and expand prenatal services in the region. This concern is not limited to rural areas.

For a variety of reasons, including inadequate provider reimbursement, high-risk referrals for prenatal care emerged as a particularly thorny issue among referring and accepting providers. High-risk patient, by definition, require more prenatal care visits and a higher level of scrutiny than a low-risk pregnant woman. As described, Medicaid reimburses private providers for prenatal care using a global fee (e.g., a single fee for a set of prenatal, delivery and postnatal services). Depending on the exact scenario, when a client is referred, the global payment is often split between the provider making and the provider receiving the referral. As a result, ob/gyn physicians that accept high-risk referrals often receive partial reimbursement for patients that require greater than average care. As previously described, privately practicing ob/gyn physicians do not receive cost-based reimbursement for providing Medicaid services (as do FQHCs), nor can they recoup prenatal care losses through facility fees (as can hospital-based practices).

Obtaining high-risk referrals for uninsured pregnant women is even more difficult. In these cases, there is no prospect for reimbursement for prenatal care for the referring or the accepting provider, despite the fact that many uninsured pregnant women will qualify for “emergency Medicaid” for delivery or if a hospital admission is required. Several interviewees stressed that emergency-only coverage cause unnecessary suffering and expense. For example, one physician described her experience treating an uninsured woman with uncontrolled gestational diabetes, observing, “She would be hospitalized for a few days and have her diabetes controlled, only to be discharged without a consistent prenatal care plan and unable to afford her medication or a glucometer (to measure blood

sugar). Despite several hospital admissions (paid by emergency Medicaid), ultimately her poor glycemic control resulted in a preterm birth. Her newborn was admitted to the NICU (also paid by Medicaid) for over a month.”

Because private providers receive no reimbursement for prenatal care delivered to uninsured women beyond what they can pay out-of-pocket, many providers limit the number of uninsured patients they are willing to see. Some providers that see large numbers of uninsured pregnant women have had to develop other forms of “currency” to obtain access to care for their high-risk pregnant patients. One hospital clinic described “trading” hospital-based practice opportunities for university physicians for a university commitment to accept high-risk referrals. Many interviewed believe that all pregnant women should be eligible for prenatal care services, regardless of citizenship and documentation status, particularly since the delivery and care of the newborn will be costs born by Medicaid.

Addressing private provider reimbursement issues without destabilizing FQHC financing

Addressing misaligned financial incentives in the Medicaid reimbursement of prenatal care services requires balancing several competing interests. On the one hand, in several regions, private group practices are the backbone to the local Medicaid prenatal care delivery system, and it is important to ensure that they are properly incentivized to continue to provide services to Medicaid pregnant women. It is similarly critical to ensure that services that may only be provided by ob/gyn physicians, such as prenatal care for certain high-risk pregnancies, are adequately compensated.

On the other hand, FQHCs provide the majority of prenatal care services to Medicaid and uninsured women in Colorado. Many FQHCs interviewed for this needs assessment underlined the importance of the Medicaid revenue stream for the financial stability of community health centers under the current financing system. By design, “cost-based reimbursement” provided to FQHCs and rural health centers under Medicaid considers all organizational costs, including the cost of caring for the uninsured. Thus, care for the uninsured is inextricably linked to the Medicaid program. According to one clinic manager, Medicaid revenues must total at least forty percent to support care for the uninsured in his clinic. FQHCs worry that, if increasing Medicaid reimbursement rates for private prenatal care had the unintended consequence of diverting large numbers of women on Medicaid from their clinics, the resulting destabilization of FQHC financing would compromise access for both women on Medicaid and especially for uninsured pregnant women who have few other options.

Recommendations to ensure the sustainability of existing clinical prenatal care system

- **Identify and resolve barriers to sufficient ob/gyn consultation and referrals – especially high-risk obstetric services -- for Medicaid prenatal care providers.** Encourage Colorado section of ACOG and COAFP and other partners in the community to work collaboratively to identify and address barriers that prevent full implementation of the “cooperative practices” agreement.

- **Encourage and foster relationships in residency and other training programs to ensure adequate training and recruitment of necessary providers.**
- **Ensure that the Medicaid global reimbursement keeps pace with inflation.**
- **Analyze how Medicaid benefit or reimbursement policy changes affect the financial viability of key prenatal providers prior to their implementation.** The state should avoid policy that could reduce provider participation.

RURAL PROVIDER CAPACITY TO PROVIDE CLINICAL PRENATAL CARE SERVICES IN COLORADO

As displayed in Figure 8, 4244 births (6% of 2007 births) occurred in counties that EPSDT case managers rate as having potential provider capacity issues for prenatal care. Specifically, they rated it as “unlikely” or “very unlikely” that a Medicaid woman who is 10 weeks pregnant would be able to obtain an appointment within 2 weeks. Most of these counties do not have prenatal care services available to pregnant women on Medicaid at all. Many listed counties have family medicine practices or other providers, but these providers do not provide prenatal care or do not accept Medicaid. Some counties have very few births and, as such, may not be able to sustain a county-based prenatal care provider.

However, the EPSDT case manager survey identified ten counties as potentially having provider capacity issues. (See Figure 8.) Reviewing the list of counties, a common profile emerges that describes all counties, except Larimer:

- rural counties
- no (or limited) FQHC sites, and
- no hospitals, or a hospital that does not provide/limits delivery services.

Five other counties – Archuleta, Ouray, Hinsdale, Huerfano, Mineral – share this risk profile (rural, no FQHC sites, no hospital/hospital with delivery limitations). EPSDT case managers characterized Huerfano as having borderline prenatal care access problems but provided no information about the other counties.

In four of the ten counties listed in Figure 8, first trimester initiation of prenatal care was below the 2007 state average for all women, women on Medicaid, or both groups. Interestingly, six of the listed counties did not report lower-than-average rates in 2007 despite reported prenatal care access challenges. In some cases, this apparent inconsistency may simply reflect women traveling outside their county of residence for prenatal care services. On the other hand, rural county prenatal care rates vary dramatically from year-to-year and historical (2007) rates may not reflect access barriers that exist in 2009. Therefore, the most current information suggests that these counties merit additional information gathering to determine whether and what kind of intervention is warranted.

Because Larimer County did not fit the profile – it is not a rural county, it has two FQHC sites, and the county hospital does perform deliveries – HPS followed up with the EPSDT case management program and one of the FQHCs. While the ESPDT case management program confirmed that, in their experience, it can take more than two weeks to schedule an appointment for a newly pregnant woman, a secret shopper call to the FQHC resulted in an appointment within a week. Thus, as above, additional information gathering is required before drawing firm conclusions about provider capacity in Larimer.

Figure 8: Colorado Counties with Potential Provider Capacity Issues

County	Region	# Births (# Medicaid Births) (2007)	Medicaid PNC Available?	FP, Ob/Gyn, CNM Providers Available?	FQHC in County?	Hospital in County?	1 st Trimester PNC (Medicaid 1 st Trimester PNC)	Entered PNC as early as wanted? (2007) ^{lxv}
Crowley	SE	31 (18)	No	1 FP, no PNC	No	No	84.4% (100%)	Not enough data
Elbert	NE	164 (26)	No	0	No	No	81.3% (53.8%)	13.1%
Grand	NW	154 (51)	Yes-limited	.4FTE Ob/Gyn	No	Yes	78.6% (66.7%)	12.2%
Jackson	NW	9 (0)	No	1 FP, no PNC	No	No	100% (n/a)	Not enough data
Larimer	Central	3439 (935)	Yes	Yes, longer than average waits for initial appt. (2.5-3 weeks)	Yes	Yes	80.1% (66.7%)	19%
Las Animas	SE	174 (80)	No; non-clinical prenatal care education available thru public health	FPs, no PNC; some women go to 1 Ob Raton, NM	No	Yes (no deliveries; Women on Medicaid deliver in Pueblo or NM)	62.6% (65.4%)	14%
Park	Central	128 (42)	No	3 FPs	Yes 2 days/wk	No	76.2% (63.6%)	16.9%
Rio Blanco	NW	101 (23)	No	3 FPs, no PNC	No	Yes	80.2% (69.6%)	32.7%
San Juan	SW	4 (0)	Yes-limited; some women go to Durango for care	San Juan Health Dept	No	No	80% (n/a)	
Washington	NE	40 (21)	No	2 FPs, no PNC	No	No	75% (71.4%)	Not enough data
TOTAL		4244 (1196)					78.1% (66.4%) CO statewide rate	17.1% CO statewide rate

Data Sources: EPSDT Case Manager Survey; Birth Certificate (2007), AAFP Map, CHI hospital map, CCHN Colorado's Community, Migrant, School-Based and Homeless Health Centers Map

Las Animas/Huerfano Case Study

To better understand prenatal care access and dynamics in rural counties with limited providers, Health Policy Solutions interviewed staff at the Las Animas Huerfano District Health Department. Las Animas County is an example of county that has both primary care providers and a hospital but has neither county-based prenatal care nor delivery services. Local providers do not provide prenatal care and the hospital does emergency deliveries only. Trinidad is the main population center within the county, and Trinidad women who desire prenatal care services typically go to Pueblo or Raton, NM for care.

Las Animas has a higher than average poverty rate, unintended pregnancy rate, and Medicaid-paid births. All Las Animas women, irrespective of insurance status, are also less likely to receive early prenatal care than the statewide average. According to the health department, the Trinidad hospital recently noticed an increasing pattern of women showing up in the emergency room in advanced stages of labor, leading to precipitous (emergency) deliveries. For example, the hospital experienced three such deliveries in one month in 2008, including two sets of twins. Because there is no postpartum nursing care available at the hospital in Trinidad, women delivering there are sent via Life Watch (helicopter) to Pueblo as soon as possible after delivery.

The health department responded to these concerns with a new education-only program known as the Ready, Educate, Access, Delivery (READY) program, which has been underway for approximately a year. Program goals include educating women about recognizing signs of labor, identifying where to go for delivery services, and pre-registering at the intended delivering hospital. While this program has been successful in reducing emergency deliveries in Trinidad, health department staff believes that greater client outreach efforts and county-based access to prenatal care will be required to improve first trimester prenatal care rates.

The health department indicated that prenatal care access is somewhat better in neighboring Huerfano which has a similar demographic and provider profile. Better prenatal care access is attributed to two factors: the Pueblo Community Health Center (an FQHC) sends a certified-nurse midwife (who lives in Trinidad) once a week to provide prenatal care services at the local hospital's Women's Outreach clinic. Delivery remains in Pueblo. In addition, a Huerfano-based family medicine physician provides limited, early prenatal care services to women. According to the health department, establishing similar services would be desirable in Trinidad.

Family physicians are central to the rural workforce strategy for prenatal care

According to Peregrine Management Corporation (a health information vendor), there are no ob/gyn physicians or certified nurse midwives practicing in any of the counties identified in Figure 8. However, all counties (except Elbert) have family physicians, many of whom do not provide prenatal care at all or limit services. Providing care within the county limits will therefore require engaging this provider community or importing providers from neighboring counties.

The HMC prenatal care provider survey encouraged responses from family medicine physicians who were not currently providing prenatal care to explain their decision. Several respondents indicated that they had provided prenatal care at one time, but had since quit doing so. The main reasons offered for electing not to provide prenatal care include: long hours/lifestyle concerns, competition with other providers, and lack of ob/gyn back-up. One family physician, responding from one of the counties highlighted in Figure 8, described the sacrifices inherent in a small rural practice: “ I did Ob work for 16 years. I was devoted to giving the best care possible for all Ob patients in the area. The majority of this was high risk and operative Ob. I was on call every day for the last 5 years that I did Ob.” Another rural family physician offered similar sentiments, “I delivered babies in my practice for 15 years, but the time commitment was overbearing. For the last seven years I did Ob, I was on call every other night and every other weekend. I literally did not have a life. Now I am happily remarried.”

One person surveyed and knowledgeable about malpractice issues suggested that the malpractice barrier could be addressed through collaboration with malpractice insurance companies, such as COPIC. There are certain private providers who would like to provide prenatal care but not be the delivering provider. Currently, if family medicine physicians provide prenatal care to women beyond the early months of her pregnancy, they must pay malpractice rates as if they are also the delivering provider. An alternative model might be to consider physicians as part of an “integrated system,” and subject to lower malpractice rates, so long as they establish clear care transition and referral relationships with the delivering hospital.

Recommendations to improve capacity to provide clinical prenatal care services for publicly-insured and privately-insured in targeted, under-served rural counties

- Support community and regional planning meetings that include patients and providers to assess local options, including:
 - **Encourage private providers to see Medicaid patients for prenatal services.** Support family medicine physicians in rural counties who do not currently see pregnant women on Medicaid to begin doing so. This support could take many forms including: increased training opportunities for family medicine physicians in Colorado counties with no prenatal care services for women on Medicaid, professional education for existing providers, working with malpractice carriers to lower malpractice premiums for physicians who provide prenatal care but who are not involved in the labor and delivery.
 - **Encourage nearby FQHCs to provide satellite services or expand in areas without prenatal care services.** The Huerfano hospital clinic collaboration with a Pueblo-based FQHC to share CNM services is a model that could be replicated elsewhere.
 - **Expanded practice opportunities for CNMs.** Although no CNMs currently practice the counties listed in Figure 8, some believe expanded practice opportunities could encourage some CNM providers to locate and practice in more rural settings.

STATEWIDE CAPACITY TO PROVIDE COMPREHENSIVE PRENATAL CARE SERVICES TO WOMEN ON MEDICAID

As noted earlier, recommendations to provide Colorado women with an “enhanced package of maternity services” including case management, as needed, date back to at least 1988.⁶⁶ Enriching standard prenatal care with targeted ancillary services has the potential to address psychosocial risk factors that put pregnant women at risk as well as provide an opportunity to stress health promotion. Research has shown pregnancy is a time when women are especially motivated and receptive to advice from health care providers to initiate healthy behaviors.⁶⁷ For example, in focus groups with pregnant women in Colorado, women identified “lack of education from health care providers, especially doctors” and body image concerns as barriers to achieving recommended weight gain during pregnancy.⁶⁸

Several enhanced prenatal care services programs exist in Colorado -- including Nurse-Family Partnership, Prenatal Plus, Healthy Start, and Centering Pregnancy™ – that have demonstrated that focus on nutrition, tobacco cessation, and other non-clinical risk factors during pregnancy can improve birth outcomes. In addition, because many pregnant women on Medicaid are previously uninsured, the prenatal care period becomes a time to address unmet dental, mental health, and other women’s health needs.

The extent to which Colorado prenatal care providers are providing enhanced services was unknown and thus, the HMC provider survey sought to describe current service

delivery practices. It asked generally about a range of enhanced services as identified by the HMC Task Force. It also probed about the use of evidence based models. Figures 9-11 display results and reveal that most current Medicaid prenatal care providers responding to the HMC survey aim to connect pregnant women in some way to needed clinical and non-clinical services, including insurance coverage, case management and care coordination services.

Figure 9 reveals that FQHCs and CNM practices are most likely to use evidence-based models for providing care coordination and family medicine practices are least likely to do so. Here, “evidence-based” means that the case management or care coordination approach has been formally evaluated with results published in a peer-reviewed academic journal or governmental publication.

Figure 9: Provide/Refer to Evidence-Based Care Coordination Programs

	Most CNM Practices	Most Family Medicine Practices	Most FQHCs	Most Family Medicine Residency Programs
Prenatal Plus⁶⁹	√		√	
Nurse-Family Partnership⁷⁰	√		√	
Healthy Start⁷¹			√	
Centering Pregnancy™⁷²			46.9%	
Presumptive Eligibility for Medicaid or CHP+⁷³	√	√	√	√

Note: Check mark means $\geq 50\%$ provide or refer to this program.

With regard to other types of ancillary services, some are typically provided on-site, while others are more commonly referred. As with care coordination services, the balance of on-site provision versus referral varies considerably by provider type. (See Figure 11.)

Across all respondents, the following “enhanced” services were most commonly provided on-site (by at least two-thirds of respondents): after hours nursing, nutrition services, mental health and substance abuse screening, tobacco cessation, and interpretation services. Also, most current Medicaid providers have access to administrative functions that facilitate serving this population, including reminder systems, eligibility assistance services, and computer access to Medicaid. Enhanced services most commonly provided by referral only (by at approximately one-half of respondents) were: high-risk ob and other specialty services, substance abuse treatment, and oral health services.

Parent “support” services stand out as services that tend to be provided by referral or not at all and include:

- Parent education
- Peer support/mentoring
- Home visitation
- Group prenatal visits
- Transportation

Of respondents NOT providing these services, approximately one-third to one-half felt these services were important, even though they were not provided. For example, just half of Medicaid prenatal care providers responding provide mental health services directly and forty percent refer only for these services. Among the 8.4% of respondents that do not provide mental health treatment services, a majority felt that these services are important. Cultural competency classes emerged as a bit of an exception. Across the respondents, it was the service least commonly provided. However, and despite the diversity of Medicaid enrollees, 43.3% of providers do not provide cultural competency classes, and a majority do not believe it is important to do so.

The HMC survey did not attempt to assess the quality of these enhanced prenatal care services. Provider interviews revealed that quality likely varies substantially. Tobacco cessation efforts, for example, ranged from providing brochures with the Colorado Quit Line phone number to implementation of targeted, evidence-based programs. Many providers, especially private providers, expressed frustration with referrals. Specifically, they cited incomplete information about the range of options and programs available to low-income pregnant women and how to access them. Navigating the Medicaid mental health system was identified as particularly problematic by providers. In addition, they report rarely receiving follow-up information and admitted not knowing whether referrals

services were received. However, were referrals to increase substantially, many programs clearly lack capacity to serve all women who qualify.

Figure 10: Comprehensive Service Provision for Medicaid Prenatal Providers (All providers combined)

	Provide On-Site (some refer also)	Refer Only	Do Not Provide (Service Important)	Do Not Provide (Service Not Important)
High-Risk OB	22.4%	73.9%	1.5%	2.2%
Other Specialty Services (e.g., cardiology, neurology)	12.9%	76.5%	2.3%	8.3%
After Hours Nursing	80.2%	6.9%	5.3%	7.6%
Nutritional Services	66.2%	26.2%	6.9%	0.8%
Mental Health Screening Services	69.7%	22.7%	4.5%	3.0%
Mental Health Treatment Services	52.7%	38.9%	4.6%	3.8%
Substance Abuse Screening Services	72.7%	18.8%	7.6%	0.8%
Substance Abuse Treatment Services	17.6%	70.2%	6.1%	6.1%
Tobacco Cessation Services	69.5%	22.9%	4.6%	3.1%
Oral Health Services	18.9%	67.4%	6.8%	6.8%
Peer Support/Mentoring	24.4%	45.7%	9.4%	20.5%
Parent Education	30.0%	55.4%	6.9%	7.7%
Home Visitation	21.1%	48.4%	8.6%	21.9%
Group Prenatal Visits	26.8%	22.8%	13.4%	37.0%
Social Services Help	59.8%	28.0%	8.3%	3.8%
Transportation	28.5%	38.5%	11.5%	21.5%
Appointment Reminder System	68.8%	3.9%	13.3%	14.1%
Eligibility Assistance	65.9%	18.6%	7.0%	8.5%
Computer Access to Medicaid	71.4%	10.1%	11.8%	6.7%
Affordable Interpretation Lines	67.2%	9.2%	9.2%	14.5%
Cultural Diversity Classes	42.5%	14.2%	17.3%	26.0%

Data Source: HPS Prenatal Care Survey 2009

On-site service provision and referral patterns vary by provider type

As noted, significant differences exist across provider types in terms of the range of services offered and how they are offered (e.g., directly or by referral only). Because non-ob/gyn providers provide the majority of prenatal care services to women on Medicaid, their practice patterns are of particular interest. Most non-ob/gyn providers do not provide on-site high risk obstetrical services. No private family practice physicians and less than 10% family medicine residencies have high risk ob services on-site. Just one-third of CNM practices and FQHC practices have on-site options. As noted, ob/gyn consultation and high-risk referrals were identified by non ob/gyn physician providers as a limiting factor in the amount of prenatal care they can provide.

Similar differences by provider type exist for other services. As Figure 11 illustrates, federally qualified health centers (FQHCs), family medicine residencies, and certified nurse midwife practices are more likely to provide directly (on-site) case management and a variety psychosocial services, whereas private ob/gyn and family medicine practices are more likely to refer for these services. The former are also more likely than the latter to provide on-site cultural competency classes for staff. FQHCs are the most likely to have co-located mental and oral health services, as compared to other types of providers. Group prenatal care visits (e.g., Centering Pregnancy and similar programs) are commonly used by CNM practices and FQHCs but are less common among other practice types.

Figure 11: Comprehensive Service Provision for Medicaid Prenatal Providers by Provider Type

	Provided on-site by most CNMs	Provided on-site by most private Family Medicine practices	Provided on-site by most FQHCs	Provided on-site by most Family Residency Programs	Referral Only by most CNMs, FP, FQHCs, FMRPs
High-Risk OB					√
Other Specialty Services (e.g., cardiology, neurology)					√
After Hours Nursing	√	√	√	√	
Nutritional Services	√		√	√	
Mental Health Screening Services	√	√	√	√	
Mental Health Treatment Services		50%	√	√	
Substance Abuse Screening Services	√	√	√	√	
Substance Abuse Treatment Services					√
Tobacco Cessation Services	√	√	√	√	
Oral Health Services			45%		
Peer Support/Mentoring	42%		42%		
Parent Education				41%	
Home Visitation					
Group Prenatal Visits	40%		√		
Social Services Help	√		√	√	
Transportation			47%		
Reminder System	√	√	√	√	
Eligibility Assistance	√		√	√	
Computer Access to Medicaid	√	√	√	√	
Affordable Interpretation Lines	√		√	√	
Cultural Diversity Classes	43%		√	√	

Data Source: HMC Prenatal Care Survey (2009). Check mark indicates >=50% provide the enhanced service.

Although the Ob/Gyn respondents represented too small a sample to report quantitative estimates, their responses were reviewed for general trends and appeared to reflect a cross between CNM responses and private family medicine physician responses.

Recommendations to improve statewide capacity to provide comprehensive prenatal care services – including case management and enhanced services -- to all Medicaid and CHP+ pregnant women who need them.

- **Strengthen connections and referral relationships between enhanced service providers and clinical providers of prenatal care, especially private providers.** HMC survey and interviews reveal that most current prenatal care providers have established some relationships with other community partners that provide services for pregnant women. However, many providers, especially private providers, would welcome additional information on community resources. Furthermore, existing partnerships could be strengthened by formalizing and improving referral relationships to ensure that pregnant women actually receive referred services and providers share relevant information. Improving referrals, coordination, and communication between prenatal providers and community mental health centers and other providers of mental health services is an especially high priority. Opportunities to co-locate services whenever possible should be explored.
- **Encourage providers that provide on-site enhanced prenatal care services to adopt evidence-based models or evaluate their quality and effectiveness.** A myriad of programs and models exist for providing enhanced prenatal care services. However, not all are equally effective, and many are unevaluated. “Home grown” programs are especially likely to lack formal evaluation data. Recognizing that some of these “home grown” models are innovative programs of the future while others are ineffective, providers should be encouraged to collect data to establish their quality and effectiveness. Effective models should be shared with other providers. In addition, providers should be encouraged to implement evidence-based programs whenever possible – such as the adoption of the Centering Pregnancy program by several Colorado FQHCs -- to ensure that the well-recognized advantages of co-located services are actualized.
- **Increase funding for enhanced prenatal care services.** Stand-alone programs like Prenatal Plus and Nurse-Family Partnership may be especially attractive to providers that do not offer on-site case management and enhanced services for women who need them. However, funding for such programs is limited and, as a result, many do not have capacity to serve all of the women who could potentially qualify for services. Colorado should ensure that sufficient capacity exists to provide enhanced services for all who need them. Pay-for-performance models could be considered. In addition, expanding the adult dental benefit on Medicaid and CHP+ is recommended to address unmet dental needs of pregnant women.

SECTION 4: PERFORMANCE OF COLORADO PRENATAL CARE DELIVERY SYSTEM

In addition to questions about the delivery system's capacity to provide comprehensive prenatal care, the HMC Task Force was interested in exploring how well this care is coordinated and how well it performed generally. In particular, they wanted to understand barriers to better communication and coordination among all providers involved in the care of pregnant women before and after delivery. The task force recognizes that the need for better coordination is not a concern specific to pregnant women but rather stems from general tendency toward fragmentation and over-specialization in the U.S. health care system as well as payment policies that do not reward (pay for) collaboration.

Key Findings:

- Conflicting laws and hospital policies are barriers to providers sharing sensitive information (e.g., about maternal substance abuse, domestic violence, and mental health issues)
- Coordination of care between maternal and child providers is also hampered by conflicting loyalties and lack of routine means to communicate.
- While most Medicaid adults are satisfied with their main provider, some are not satisfied with their health plan;
- Medicaid health plan performance -- as measured by client satisfaction and timeliness of prenatal care -- is highly variable;
- The state-run, fee-for-service enrollment options have the largest enrollment and the least favorable health outcomes, whereas Medicaid health plans (Denver Health and Rocky Mountain Health Plan) have the lowest enrollment and best health outcomes;
- Recent state efforts to apply managed care strategies to the state-run, fee-for-service enrollment option have the potential to improve prenatal care performance;
- No easily accessible data exist to assess CHP+ performance on pregnant women and basic information on Medicaid delivery system characteristics, necessary for monitoring capacity and performance, is not collected;
- Medicaid information on prenatal care use, delivery, and early infant care for Medicaid clients are stored in multiple databases, resulting in gaps and conflicting evidence;
- Some states routinely link data from multiple sources to get a more complete picture of an episode of care, its costs, and outcomes.

COORDINATION OF CARE

In interviews with providers, many focused on the need to improve communication between maternal providers and child providers, when they are not the same person or entity (e.g., not a family practice or FQHC). Several pediatricians, for example, stressed that important information gleaned by prenatal care providers about maternal health and family dynamics – e.g., maternal substance abuse, depression, domestic violence -- does not get shared with the newborn’s provider, even when relevant to child health. In addition, changes in insurance status before and after birth may trigger a change in maternal providers with the potential for a similar loss of information.

Care transitions literature may provide a conceptual framework and models for improving provider-to-provider communications

Academics refer to the above phenomena as “care transitions” which is defined as “the movement patients make between health care practitioners and settings as their condition and care needs change.”^{lxxiv} Although the care transitions literature has focused on persons with special needs or complex chronic conditions, many of the strategies that have been developed to improve “transitional care” could be applied to pregnant women. These strategies include care planning that anticipates the transition in care, coordination among health professionals involved in the transition, education of the patient and family about issues likely to arise during the transition, and an overall emphasis on continuity of care.

Barriers to provider-to-provider communication include legal concerns

Provider-to-provider communication is simplified in a family practice setting because the same provider (or group of providers) see the entire family for care. It also tends to work in small communities, because, as several people noted, “everyone knows everyone’s business anyway.” In these environments, existing personal relationships rather than formal paper processes govern communication. However, this informal model for information-sharing is harder to generalize to larger communities. Relationships alone are typically not sufficient; formal systems and processes are needed. In these settings, three main barriers to better provider-to-provider communication emerged from discussions with providers: conflicting loyalties, as well as legal and practical considerations.

On the one hand, providers expressed concern about what happens to sensitive information (e.g., maternal substance use) they share with other providers, and specifically, whether information may be used in ways that are harmful to their patient. On the other hand, even providers who are motivated to share information may be uncertain about whether they are at liberty to do so. Conflicting laws, hospital policies regarding patient privacy, child welfare, and criminal justice are barriers to providers sharing sensitive information. For example, providers may not share certain information (e.g., mental health information) without written patient consent. On the other hand, providers are “mandatory reporters” when other types of information (e.g., suspected child abuse) is discovered. It is not just that providers are confused about what rules govern the sharing information -- although that is certainly the case -- it is that policies

actually conflict and need reconciliation. For example, substance abuse by a pregnant woman raises both criminal justice as well as child welfare issues, especially if the woman already has children. Yet, whereas the criminal justice system may be required to enforce mandatory sentencing penalties, the child welfare system may hold out family reunification as its goal. Providers are caught in the middle of these conflicting imperatives.

Some efforts are underway to reconcile the competing legal considerations. For example, one Denver-based initiative aims to develop policy and procedures that help states to enforce current federal law that requires states to have policy in identifying substance abused newborns.^{lxxv} Currently, most hospitals do not permit mandatory testing of pregnant women who are suspected substance abusers without patient consent because may be a prosecutable crime. Under these circumstances, prenatal care providers are less willing to report suspected substance abusers and any identified patients are unlikely to consent to testing. However, the project aims to craft a policy that balances the maternal and child interests. For example, one policy under consideration require drug testing of infants with certain risk factors , the results of which may be used for child welfare purposes, but would also stipulate that positive test results may not serve as the sole basis for a criminal prosecution of the pregnant woman. Many feel that such policy clarity is a precondition for provider-to-provider sharing of sensitive information.

Providers need practical tools to better communicate

Beyond legal concerns, practical means for communicating is often lacking, although several possible strategies were identified:

- **Care planning processes** that encourage women to identify the expected provider for the baby and plan for the transition in care by obtaining patient consent to transfer key maternal health information to the identified provider
- **Standardized hospital discharge summary formats** that collect more information on prenatal care, key maternal health information, and birth outcomes (e.g., low birth weight) that would be forwarded to the baby’s provider to be attached to the baby’s medical chart
- **Shared medical records and/or registries.** In the short-term, shared medical records may be most feasible within provider groups affiliated with the same hospital system. Also, health information exchange capacity is available in certain community networks and is being built statewide. Piggy-backing on existing, commonly-used registries such as the Colorado Immunization Information System (CIIS) may present another opportunity to convey critical information between providers.
- **Hospital perinatal committees** exist in most hospitals and could set policy with regard to information sharing and, in smaller communities, may be a forum to discuss individual cases
- **Case managers** that follow women from pregnancy through early childhood. Alternatively, for case management programs that end with delivery, creating a transition opportunity – providing a written report to the baby’s provider or

attending the first well-child appointment -- to ensure that key information is not lost.

Providers felt that communication would be more likely if it were “easy,” that is, clear procedures were in place. They were, however, concerned about information gathering that was time-consuming or bureaucratic. Finally, providers acknowledged that closer working relationships between maternal and child providers would likely be mutually beneficial. For instance, pediatricians are well-positioned to screen women for post-partum depression and counsel them on preconception issues.

Recommendations to Address legal and logistical barriers to better communication and coordination among providers before and after delivery

- **Clarify legal parameters for communicating sensitive information between providers.** Lack of clarity in the rules is silencing. Providers need to feel safe to share information.
- **Standardize, routinely collect, and share key information about prenatal care services**
- **Encourage prenatal providers to implement or connect pregnant women to case management services.** In addition to helping women navigate to needed services, case managers can provide continuity of care when providers change.

THE EXPERIENCE OF CARE FOR PREGNANT WOMEN

Given the diversity of prenatal care providers and the range of care models employed, one might expect that the women’s experiences of care might differ by setting and according to the range of services offered. Unfortunately, however, standardized, detailed site-specific data on consumer satisfaction and perceptions of quality is not consistently available for the Medicaid and CHP+ programs. FQHCs collect annual utilization and quality data for clients, including timeliness of prenatal care, but similar data is not available for other types of prenatal care providers.

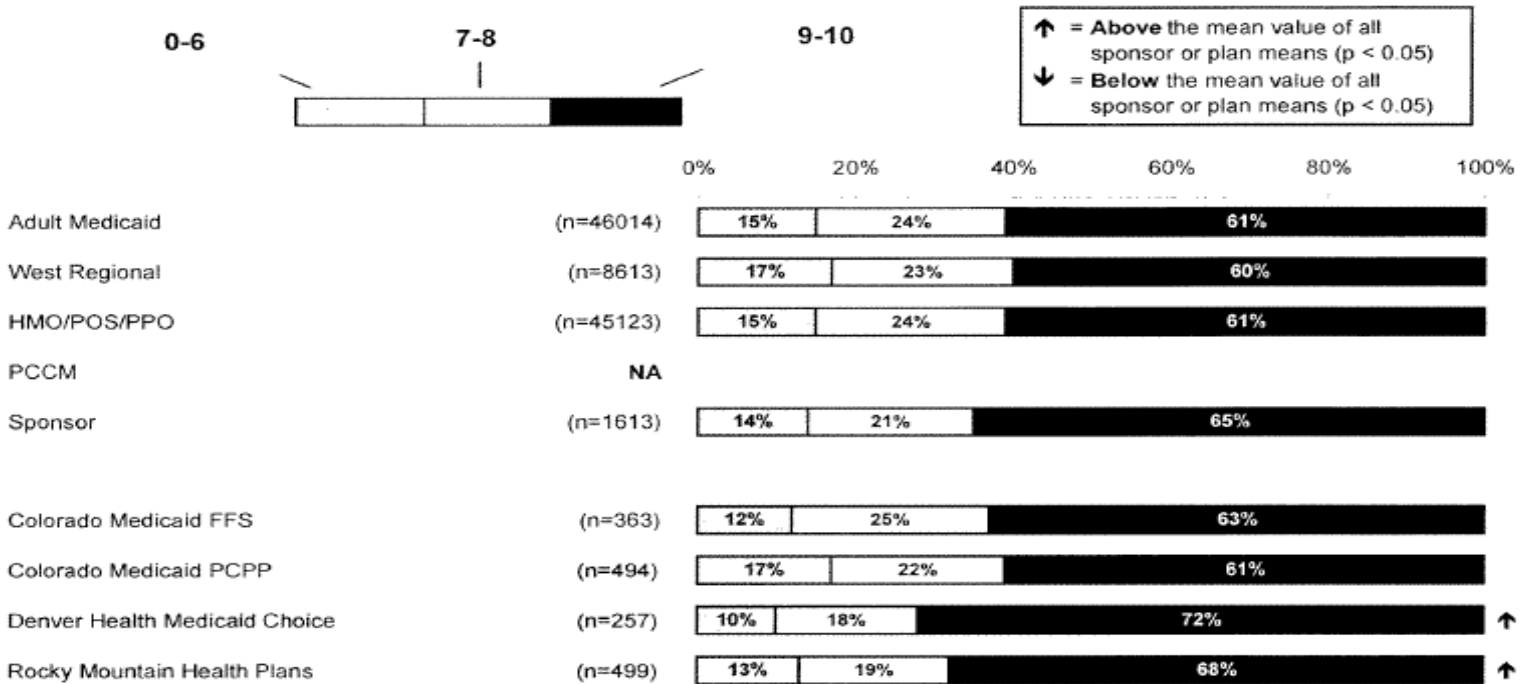
However, Medicaid does administer annual consumer satisfaction surveys to its adult enrollees. Unfortunately, pregnant women are not polled separately, but reported as part of the overall adult Medicaid population. Assuming that all adult respondent views are consistent with those of pregnant women, they are overall, largely satisfied with their maternity care providers, with 85-90% of women giving their “personal doctor” a score of 7 or above on a 10-point rating scale.

Figure 12: Adult Medicaid Consumer Ratings of Health Care Colorado Health Plans vs. National and Regional Benchmarks

Colorado Dept. of Health Care Policy

Overall Rating of Personal Doctor

Q21. Of those respondents who reported having a personal doctor: "Using any number from 0 to 10, where 0 is the worst personal doctor possible and 10 is the best personal doctor possible, what number would you use to rate your personal doctor?"



Data Source: HCPF, CAHPS Survey, 2008.

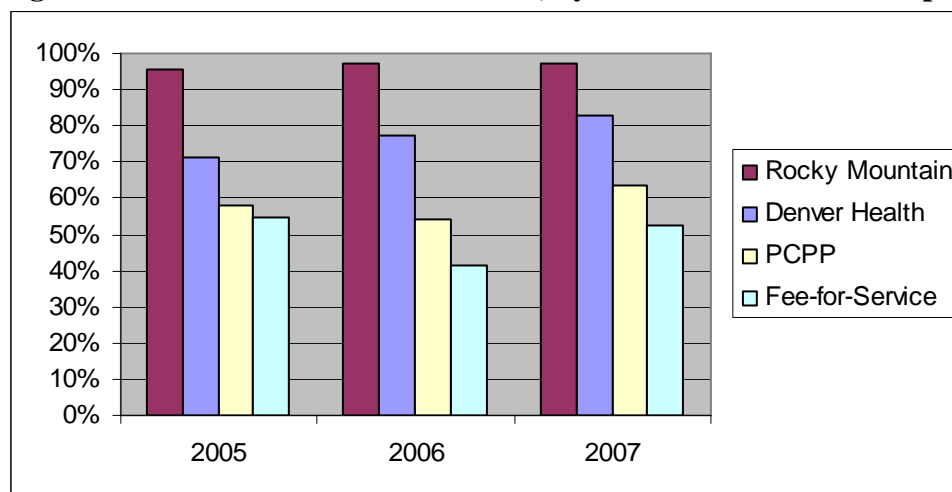
Although CHP+ collects quality data for its child population, it has not historically collected HEDIS or consumer satisfaction (CAHPS) data on pregnant women. It plans to begin collecting HEDIS data on timeliness of prenatal care and receipt of postpartum care beginning in 2010.

Increase enrollment of pregnant women in Medicaid and CHP+ plans that have high quality results

Despite consistently high ratings for their personal providers, pregnant women showed much less consistency in reviews of their enrollment options. Medicaid enrollees currently have four options for accessing their Medicaid services. In all areas of the state, Medicaid enrollees may elect to enroll in one of two state-run programs, the Primary Care Physician Program (PCPP) or the fee-for-service (FFS) program. The main difference between the programs is that enrollees in the PCPP program must select a specific primary care physician or clinic from a state-approved list, and this PCP is responsible for managing their care needs. The FFS program has no such requirement and enrollees are sometimes characterized as “unassigned,” meaning that they are “unassigned” to a primary care provider. For Denver-based enrollees or those on the Western Slope, they have the additional option of receiving services through a health plan, Denver Health Medicaid Choice and Rocky Mountain Health Plans, respectively.

Across a number of maternal and child health quality measures, the state-run PCPP and FFS enrollment options report consistently lower marks than managed care plans.⁷⁶ Results for pregnant women are no exception to this pattern. For example, pregnant women gave Rocky Mountain Health Plans the highest overall rating, whereas enrollees in the state-run FFS program expressed the lowest levels of satisfaction. (CAHPS, 2008). These satisfaction reports are consistent with other measures of quality including timeliness of prenatal care. As illustrated in Figure 13, both health plan options -- Denver Health and Rocky Mountain -- report much higher first trimester prenatal care rates and a more consistent trend toward improvement, than either state-run plan. Rocky Mountain’s timeliness of prenatal care rates for Medicaid exceed Healthy People 2010 standards (90 percent receiving care in the first trimester) and approach rates for privately insured women, whereas FFS rates hover around 50 percent. Enrollment is highest (around 70 percent) in this low-performing FFS enrollment option.

Figure 13: Timeliness of Prenatal Care, by Medicaid Enrollment Option



Data Source: HCPF HEDIS (All Medicaid Timeliness)⁷⁷

- **Increase enrollment in high-performing health plans;**
- **Recruit high-performing health plans to serve the Medicaid population.**
Historically, other Medicaid health plans such as Kaiser and Colorado Access have reported higher quality performance than FFS.
- **Improve the performance of Medicaid fee-for-service options for pregnant women;**
- **Include focus on pregnancy within HCPF's Accountable Care Collaborative (ACC) Program.** ACC is a major strategy for improving performance in the FFS program. Pregnancy is a major qualifying event for Medicaid and a key cost driver. ACC presents an opportunity to focus attention on this important issue.

Data necessary to monitor performance are often not collected or adequately used

Throughout this report, definitive statements about delivery system capacity and performance have been hampered by data quality concerns for Medicaid and missing data for CHP+.

Whereas the previous administration viewed the HCPF role as a passive one – primarily as a bill-payer – the current administration is interested in more actively managing the health of its enrollees. This organizational shift is visible in, for example, the creation of the Center for Improving Value in Health Care and the planned Accountable Care Collaborative (ACC) program.

However, for these and similar efforts to be able to achieve their full potential, HCPF will need to pair them with more consistent and intentional data collection strategies. Improving the quality of care received by Medicaid enrollees necessarily requires intervening at the level of the delivery system. This in turn requires having detailed information about the delivery system -- its components and their relative performance -- that is largely unavailable at this time.

For example, pregnancy is a major qualifying event for Medicaid and CHP+. Pregnant women represent a large proportion of the Medicaid population and all adult enrollees on CHP+ are pregnant women. Yet, basic questions about the prenatal care delivery system are not easily answered with routine reports. They require special data requests that, even then, only partially answer questions, such as:

- Which providers and provider types provide the most prenatal care services to enrollees?
- Which are the largest providers of prenatal care services in each region?
- Are there regions with too few or no prenatal care providers?
- Have there been recent changes in the delivery system, e.g., former prenatal care providers that are no longer providing services?
- Are current prenatal care providers accepting new Medicaid and CHP+ patients? How much capacity do they have to do so?

Without this basic, baseline information about the delivery system, it is going to be very difficult to address important policy questions that are likely to arise with HCPF's renewed focus on quality of care and population health outcomes. For example, does the current prenatal care delivery system have the capacity to absorb more clients, either as a result of coverage expansions or successful outreach campaigns to encourage first trimester prenatal care? If provider capacity needs to be increased in certain regions, what are the options for doing so that build on the current system? If payment policies are adjusted (upward or downward) for a particular set of providers, how many women and which counties will be affected by this change?

Why is this information so difficult to obtain? It is not for lack of interest. HCPF staff and analysts were very helpful and creative in their attempts to gather information for this project. Rather, information easily available about the delivery system reflect HCPF's historical orientation as a bill-payer. That is, the information most readily available is that which is required to handle reimbursement requests. For example, HCPF can easily produce a list of providers with which it has contracts. However, this list is unable to provide information about volume, that is, how many patients are seen by each contracted provider. A list of contracted providers does not distinguish between a large, Medicaid-only practice and a provider that sees one or two Medicaid patients but otherwise does not accept new Medicaid patients. Under a contract agreement with Peregrine, HCPF can also produce a list by region of available child and prenatal care providers that accept Medicaid and are accepting new Medicaid clients. However, this list is unable to provide any detail on the scope of services provided by contracted providers. Thus, a Peregrine list will identify by county family medicine physicians who are accepting new Medicaid patients, but it will be unable to identify which are providing prenatal care services and to how many patients.

Additionally, some information cannot be obtained because the desired information is not collected by the state. FQHCs, for example, are not currently required by Medicaid to provide detailed information about the type of service provided in a medical encounter. Thus, FQHC-based prenatal care visits cannot be distinguished from other types of care

that may be received by pregnant women in an analysis of Medicaid billing data. The premise in this report that FQHCs provide prenatal care services to the greatest number of women rests on FQHC Uniform Data Set (UDS) data, which does not report results separately by payer source. Disaggregating Medicaid clients and from uninsured pregnant clients seen at FQHCs would require a special data request. Also, billing information for CHP+ and Medicaid enrollees of health plans are considered proprietary not available to state analysts.

Finally, existing data could be better harnessed for quality purposes. Many states routinely link individual data sets that are currently separate in Colorado. Colorado's approach is akin to going to one source to find a phone number and another source to look up an address, instead of having both sets of information integrated in a phone book. Opportunities to integrate data include linking birth certificate data and/or PRAMS data with other data sets such as Medicaid billing information (claims data), and hospital discharge data, and census geographical data. Birth certificate/PRAMS data are typically the best source of information on maternal risk factors, prenatal care history and birth outcomes, while other data sets have better information on specific health service utilization, cost and demographics. Linked data sets are also helpful for reconciling inconsistencies – such as prenatal care rates -- across data sets. Such reconciliation helps determine which questions are best answered by which data and ultimately better enables end users to leverage information for policy purposes.

To illustrate the possibilities of linked data sets, consider a question that arose during the study that could be better investigated with linked data. Did the increase in NICU admission in 2005 result from significant Medicaid eligibility disruption in 2004, or does this NICU increase amount to “noise,” normal year-to-year variations in admission rates? The birth certificate data clearly shows that first trimester prenatal care by high-risk women went down shortly after implementation of the policy in 2004. However, only by linking birth certificate data to Medicaid billing data (the source of the NICU information) is one able to connect the dots. For example, were most of these “high risk women” with late prenatal care actually covered by Medicaid? Was it this group of high risk women that were disproportionately driving the increase in NICU admissions? Cost-benefit analysis, disparity analysis, regional analysis, and many other types of inquires would similarly be facilitated by integrating information from many sources into a single data set.

HCPF is proposing to contract with a statewide data and health information technology entity in the context of the ACC. This entity has potential to address some of these data challenges, particularly if HCPF worked collaboratively with it to address some of the highlighted data quality issues.

Recommendations

- **Better leverage existing data by linking existing data sets;**
- **Routinely collect data on prenatal care delivery system capacity and performance;**

- **Routinely collect data on CHP+ performance relative to pregnant women** CHP+ is typically the main vehicle for coverage expansions and yet little is known about its performance. Collecting program specific information for CHP+ is especially important because few other data sources exist. For example, while birth certificate and PRAMS data may be used to evaluate Medicaid performance, it is difficult to do the same for CHP+ due to small sample sizes and the difficulty in accurately identifying CHP+ enrollees in these data sets.
- **Report and summarize information in formats useful to state agency program staff and other stakeholders (e.g., CIVHC, Accountable Care Collaborative participants).** Staff and vendors who are hired to mine existing data should do so with an eye toward the policy questions the data will aim to answer.

SECTION 5: CONSUMER DEMAND FOR COMPREHENSIVE PRENATAL CARE: THE ROLE OF OUTREACH

At the HMC Task Force request, information gathering focused on the prenatal care delivery system capacity and performance, as reviewed in previous sections of the report. Task force members focused the needs assessment in this manner because while many national and state analyses exist that describe consumer-level barriers to care and how to respond to these barriers, less was known about the current Colorado prenatal care delivery system. However, many key informants interviewed for this project stressed that indicators like first trimester initiation of prenatal care have many drivers, including consumer demand for services. Several voiced the specific concern that Colorado's average-to-low performance on early prenatal care not be solely attributed to inadequate provider capacity, or even to just delivery system issues. As one key informant phrased it,

“It is important to know whether high rates of late prenatal care stem from an inability to access services or whether they result from women not coming in for services until the second or third trimester. We prioritize appointments for pregnant women in our clinic, they never have to wait. If you try to solve the problem of late prenatal care by recruiting additional providers, you could be solving the wrong problem. In some areas, it may be that better consumer outreach is required.”

Thus, for context and balance, this final section of the report is intended to *briefly* review what is known about consumer demand for comprehensive prenatal care services in Colorado. The reader is encouraged to consult endnotes for resources that provide more exhaustive analyses of consumer barriers and recommendations for addressing them.

Key Findings:

- **Very few CO Medicaid women say they did not get prenatal care because they “did not want it;”**
- **Consumers say that financial and logistical barriers are more responsible for late prenatal care than lack of knowledge;**
- **Success in improving early prenatal care rates will require improving high unintended pregnancy rates;**
- **Other states have improved early receipt of prenatal care by pairing systems change with aggressive outreach efforts and by creating strong links between family planning and prenatal care programs.**

Financial and logistical barriers are the major obstacles to early prenatal care, not lack of knowledge

Annually, CDPHE surveys women who have recently given birth in Colorado about their prenatal care history and barriers to care, among other topics, and produces an annual surveillance report. This report typically analyzes trend separately for policy-relevant subgroups of women, for example women who are first time mothers or are poor (many of whom have Medicaid-paid births). It tallies various barriers to getting prenatal care including financial barriers, logistical barriers (scheduling, day care and transportation), and other barriers. PRAMA survey data are available on the CDPHE website, dating back to 1997, permitting trend analysis.

Figure 14 summarizes a special data request in which CDPHE staff provided a breakdown of these prenatal care barriers for women on Medicaid according to whether they received early care or late care. First highlighting a couple of interesting findings that are *not* included on the table, very few women (n=17 in 2 years) report getting no prenatal care. Also, among these few women, even fewer say that they did not get prenatal care because they “did not want it” (n=7 in 2 years). This suggests that most Colorado women are aware of the recommendation to get prenatal care services. While exceptions may exist among teens and recent immigrant groups, the main barrier to receiving early prenatal care does not appear to be lack of knowledge about its importance.

Figure 14: Barriers to Prenatal Care for Women with a Medicaid-paid Birth who did not get Prenatal Care “as early as wanted”

	LATE Medicaid-paid Prenatal Care (1st visit in 2nd or 3rd trimester)
Not enough money/ No insurance	48.2%
Couldn't get earlier appt.	27.9%
Keep pregnancy secret	16.4%
No transportation	21.7%
MD/Health plan would not start earlier	18.7%
Didn't have Medicaid card	43.3%
No one to care for the children	3.6%
Too many other things going on	15.7%

Data Source: PRAMS 2006-2007

However, many Colorado women on Medicaid face financial or logistical barriers to obtaining timely prenatal care. Specifically, among those that obtained care late, but wanted to obtain care earlier, approximately half cited financial barriers, more than one-quarter said that they couldn't get an earlier appointment, and one-in-five cited transportation issues. Arguably, many of these barriers that appear to operate at the client level – no insurance/transportation – often have systemic causes such as public coverage policies/systems (as discussed in Section 2) and lack of public transportation options. Also, almost nineteen percent who received late prenatal care reported that their physician or health plan would not allow them to initiate care earlier.

The appointment scheduling barrier is an interesting finding because it contrasts with feedback from EPSDT case managers that report that a 10-week pregnant woman can generally get an appointment within 2 weeks in most parts of the state. Existing data point to several possible explanations for this apparent contradiction. Given the difficulty the state has in generating a list of Medicaid prenatal care providers, it is entirely plausible that Medicaid enrollees may not be aware of all of the prenatal care options available to them and have trouble identifying providers that can get them in quickly.

Furthermore, wait times are longer for private providers than for FQHCs. Private providers also have fewer after-hours options. (See Section 3.) Yet, some Medicaid enrollees may prefer to receive care from a private physician and elect to wait for an appointment, rather receive first trimester care from an FQHC. Finally, ESPDT case managers provided estimates of average time to the first available appointment. For some women, the first available appointment may not be compatible with her work or school schedule so timely access is theoretical given her life constraints. Because each of

these explanations points to different interventions, community-specific data collection would be an important next step to intervening.

The above findings on financial and logistical barriers may help explain the often significantly lower rates of early prenatal care among Medicaid as compared to the privately insured in urban/suburban areas, despite apparent capacity. (See Appendix F.) This suggests that public messaging and outreach efforts around prenatal care need to focus not only on the importance of prenatal care but also provide information about how to surmount financial and logistical barriers to care. For example, this might include providing information about how and where to enroll in Medicaid, advertising specific care options especially those that accept women on Medicaid without waits, and highlighting public transportation options (if they exist) to get to care.

HPS acknowledges and defers to a vast social marketing and program evaluation literature that provides more specific strategies about how best to target and implement such outreach and public education campaigns. For example, the National Academy for State Health Policy (NASHP) recently completed an exhaustive review of state Medicaid eligibility and outreach strategies to improve care for pregnant women. Several successful state models, including Louisiana's innovative community-based outreach to that has led to a stunning 87% early prenatal care rate, are highlighted.⁷⁸ In Colorado, only Medicaid enrollees in Rocky Mountain Health Plan boast similar levels of early prenatal care, due in large part to the award-winning B4Babies outreach and enrollment program in Mesa County.

Success in improving early access to prenatal care will involve addressing the issue of unintended pregnancy

Finally, several interviewees suggested that Colorado's high rate of unintended pregnancy is implicated in its stagnant prenatal care initiation rates. Statewide among all women, 40% of pregnancies are unintended. Nearly six in ten of Medicaid pregnancies are unintended, yet only one-third of women were using birth control at the time of the pregnancy. Several studies link unintended pregnancy with later prenatal care, especially for teen pregnancies and unwanted pregnancies.⁷⁹ In Figure 14, for example, women who received late care were more likely to cite their desire to keep pregnancy a secret, as a reason. The fact that high rates of unintended pregnancy are linked to elevated rates of late care suggests an important intervention: preventing unintended pregnancy is likely to reduce late initiation of prenatal care.

Thus, improving access to family planning services may be as important as access and outreach focused on prenatal care. Some states, such as Rhode Island, that enjoy high rates of early prenatal care (84.5%) have successfully reduced unintended pregnancy, specifically, repeat teen births.⁸⁰ In addition, several states highlighted in the Urban/NASHP report on Medicaid outreach and enrollment strategies have improved early access to prenatal care through close collaboration with family planning programs.⁸¹ Some believe that Title X family planning dollars could be better leveraged to improve access to family planning services.

Recommendations:

- **Conduct focus groups with pregnant women to identify key messages about overcoming access barriers and appropriate outreach strategies;**
 - **Fund and implement statewide campaigns that:**
 - **promote early prenatal care**
 - **provide information on public insurance options;**
 - **Fund and implement local media and provider-based campaigns that:**
 - **promote early prenatal care**
 - **provide information about care options, esp. free and reduced-price care;**
- Encourage the Medicaid agency to adopt successful models used in other states that improve access to and leverage collaboration with family planning clinics to prevent unintended pregnancy and to facilitate the early initiation of prenatal care.**

ENDNOTES

¹ Expert Panel on the Content of Prenatal Care. Caring for our future: The content of prenatal care. Washington, DC: U.S. Public Health Service, 1989, pp. 80–89.

² 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.

³ Expert Panel on the Content of Prenatal Care. Caring for our future: The content of prenatal care. Washington, DC: U.S. Public Health Service, 1989, pp. 80–89.

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.

⁵ Prenatal, Labor, and Delivery Care in Colorado. Progress Report. March 1991. Reporting on recommendations from the Governor’s Task Force on Prenatal, Labor and Delivery Care (1988).

⁶ Tipping the Scales: Weighing in on Solutions to the Low Birth Weight Problem in Colorado. CDPHE. August 2000.

⁷ Ibid.

⁸ 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.

⁹ <http://www.nursefamilypartnership.org/content/index.cfm?fuseaction=showContent&contentID=4&navID=4;>

<http://www.nursefamilypartnership.org/content/index.cfm?fuseaction=showContent&contentID=113&navID=101>

¹⁰ Glazner et al. The Effects of the Prenatal Plus Program on Infant Birth Weight and Medicaid Costs. CDPHE. December 2002.

¹¹ Prenatal Plus Program 2007 Annual Report. CDPHE. November 2008. In 2007, the low birthweight rate for infants born to Prenatal Plus participants who remained in the program through delivery was 10.7 percent. Without Prenatal Plus services, the low birthweight rate for the Prenatal Plus population was expected to be 13.8 percent. This expected rate is based on the outcomes for women on Medicaid with the same risks who did not receive Prenatal Plus services. The Prenatal Plus rate is 22.5 percent *lower* than the expected rate. Six out of 10 (61 percent) Prenatal Plus Program participants were able to resolve **all** of their risks, and the resulting low birthweight rate for their infants was 7.2 percent. Compared to the low birthweight rate for Colorado in 2007 of 9 percent, this is a significant achievement. This reduction in the low birthweight rate resulted in an estimated savings of \$2.7 million dollars in health care costs for Medicaid during 2007.

¹² Devaney, B., E. M. Howell, M. McCormick, and L. Moreno, Reducing Infant Mortality: Lessons Learned from Healthy Start, Final Report, Princeton, N.J.: Mathematica Policy Research, Inc., July 2000.

¹³ <http://www.centeringhealthcare.org/pages/research/research-evaluation.php>

¹⁴ One of the few data sources identified that address the content of prenatal care services is a series of questions within the Colorado PRAMS survey that address anticipatory guidance given to pregnant women during a prenatal care visit: how smoking/drinking alcohol could affect baby, breast-feeding, how much weight you should gain, etc.

¹⁵ Johnson T and Schulte S. Kids’ Health Care Access: Diagnosis and Prescription for Improvement. Health Policy Solutions. December 2006.

¹⁶ Kaiser State Facts, <http://www.statehealthfacts.org/comparemaptable.jsp?ind=44&cat=2>

¹⁷ Ibid.

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- ¹⁸ Leff M et al. The Health Status of Colorado's Maternal and Child Healthy Population. CDPHE. June 2005. www.cdphe.state.co.us/ps/mch/healthstatus2005.pdf
- ¹⁹ Colorado Health Foundation 2008 Report Card. "Delayed prenatal care, and smoking while pregnant are among the factors that contribute to low birth weight and to babies who die in the first year of life." <http://www.coloradohealthreportcard.org/ReportCard/2008/subdefault.aspx?id=2764&linkidentifier=id&itemid=2764>
- ²⁰ 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. Although skeptical overall of the assumption that prenatal care prevents low birth weight births, authors cite several examples of how prenatal care might reduce infant mortality, including "Prenatal care may well play an important role in assuring transfer to and delivery in a facility providing a risk-appropriate level of delivery care."
- ²¹ This is a statistically significant difference. Analysis of 2007 Birth certificate data, by CDPHE analyst Kirk Bol. Note: "Medicaid" status on the birth certificate refers to Medicaid-paid births, including Emergency Medicaid. Emergency Medicaid recipients are not eligible for prenatal care services.
- ²² Gilbert W et al. Birth Outcomes in Teenage Pregnancies. J Matern Fetal Neonatal Med. 2004 Nov;16(5):265-70.
- ²³ This is a statistically significant difference. Analysis of 2007 Birth certificate data, by CDPHE analyst Kirk Bol. Note: "Medicaid" status on the birth certificate refers to Medicaid-paid births, including Emergency Medicaid. Emergency Medicaid recipients are not eligible for prenatal care services.
- ²⁴ The PRAMS Survey is an ongoing, population-based surveillance system designed to supplement vital records and to generate state-specific perinatal health data. Each month, a stratified random sample comprised of approximately 5 percent of Colorado women who recently had a baby are selected from eligible birth certificates. Donovan K et al. Maternal Indicators for Women on Medicaid in Colorado: An Analysis of Pregnancy Risk Assessment Monitoring System (PRAMS) Survey Data. Health Watch. CDPHE. February 2009.
- ²⁵ http://www.who.int/social_determinants/thecommission/finalreport/en/index.html
- ²⁶ Donovan K et al. Maternal Indicators for Women on Medicaid in Colorado: An Analysis of Pregnancy Risk Assessment Monitoring System (PRAMS) Survey Data. Health Watch. CDPHE. February 2009.
- ²⁷ Donovan K et al. Maternal Indicators for Women on Medicaid in Colorado: An Analysis of Pregnancy Risk Assessment Monitoring System (PRAMS) Survey Data. Health Watch. CDPHE. February 2009.
- ²⁸ Analysis of 06-07 PRAMS by CDPHE analysis Ricky Tolliver.
- ²⁹ No statistical difference was observed for Medicaid and non-Medicaid groups re: weight gain during pregnancy. Donovan K et al. Maternal Indicators for Women on Medicaid in Colorado: An Analysis of Pregnancy Risk Assessment Monitoring System (PRAMS) Survey Data. Health Watch. CDPHE. February 2009.
- ³⁰ Donovan K et al. Maternal Indicators for Women on Medicaid in Colorado: An Analysis of Pregnancy Risk Assessment Monitoring System (PRAMS) Survey Data. Health Watch. CDPHE. February 2009.
- ³¹ Pregnancy experiences of African and African Americans/Black in Colorado: Survey Results. CDPHE. 2004.
- ³² http://www.unnaturalcauses.org/assets/uploads/file/Braveman_NIH_Summit_12-12-08.pdf
- ³³ According to 2007 birth certificate data, 2.38% of privately insured women had a birth related to infertility treatment as compared to .08% of women on Medicaid. Infertility treatment dramatically increases the risk of multiple gestation births. Analysis of 2007 birth certificate data by CDPHE analyst Kirk Bol.
- ³⁴ Women not on Medicaid were more than twice as likely to drink during the last 3 months of pregnancy as compared to women on Medicaid (13.7% vs. 6.8%). Donovan K et al. Maternal Indicators for Women on Medicaid in Colorado: An Analysis of Pregnancy Risk Assessment Monitoring

System (PRAMS) Survey Data. Health Watch. CDPHE. February 2009.

³⁵ Children whose mother was on Medicaid at the time of birth are guaranteed eligibility for the first year of life. However, the fact that their mothers often lose eligibility shortly after delivering may affect infant health. For instance, untreated maternal postpartum depression can have significant health implications for the infant as well as the mother. Field T. Maternal depression effects on infants and early interventions. *Prev Med* 1998;27(2):200–3.

³⁶ <http://www.nlm.nih.gov/medlineplus/preconceptioncare.html>

³⁷ http://www.cclponline.org/ccs/documents/CCLPBooklet_FINAL.pdf

³⁸ Pregnancy-related coverage under Medicaid terminates at the end of the month in which the 60th day following the end of her pregnancy occurs. HCPF Benefits Collaborative Policy Statement. Maternity Services. 2009.

³⁹ Special data request by HPS to HCPF Business Analysis Section. The Business Analysis Section tailors data to specific internal and external customer needs that are not met through existing reporting. Thus, calculations may differ from existing published figures due to several factors that may include, but are not limited to: the specificity of the request, retroactivity in eligibility determination, claims processing and dollar allocation differences between MMIS and COFRS.

⁴⁰ Adams KE et al. Transitions in Insurance Coverage from before Pregnancy through Delivery in Nine States, 1996-1999. *Health Affairs*. 2003;22(1):219-229

⁴¹ American Academy of Periodontology Statement on Periodontal Disease and Preterm Low Birthweight <http://www.perio.org/consumer/nejm-statement.htm>

⁴² <http://www.cdc.gov/STD/treatment/2006/genital-warts.htm>

⁴³ The Children’s Health Insurance Program Reauthorization Act (CHIPRA 2009) legislation provides for a new “state plan amendment” (non-waiver) option to cover pregnant women that requires states to use the Medicaid funds (and not CHP+ funds) to cover women between 133-185% FPL. However, Colorado currently covers this group of pregnant women under CHP+ (and thereby enjoys a two-thirds federal matching rate, rather than the fifty percent match normally allowed by Medicaid). Thus, to continue to receive the enhanced CHP+ match for this population, Colorado will not be able to exercise the state plan amendment option but must renew its waiver instead. Other states are in the same position as Colorado and are actively pursuing federal renewal of such waivers. Although HCPF is optimistic about federal approval, until the waiver is renewed, the issue bears monitoring.

⁴⁴ Hill I et al. Medicaid Outreach and Enrollment for Pregnant Women: What is the State of the Art? Prepared for the March of Dimes Foundation. The Urban Institute and NASHP. March 2009.

⁴⁵ The private health plan timeliness rate reflects data reported by the Colorado Business Group on Health. It includes data from private managed care plans: HMOs, PPOs, POS plans. These rates are higher than the private timeliness rates reported in 2007 for the birth certificate, so they may overestimate the timeliness of prenatal care for the privately insured. (Birth certificate data on private coverage was not used because the question for insurance is available only for 2007.)

⁴⁶ The “all Medicaid” line takes the individual HEDIS measures for each of the state’s enrollment options (PCPP, FFS, Rocky Mountain Health Plan, Denver Health Plan) and weights them according to enrollment. Overall Medicaid enrollment (rather than enrollment specific to Medicaid women) is used for weighting. Managed care plans did not report quality data (including timeliness of prenatal care) in 2004. For that year (2004), the prenatal care timeliness indicator includes just FFS and PCPP. The “timeliness of prenatal care” measure calculates the percentage of deliveries that received a prenatal care visit as a member of Medicaid in the first trimester or within 42 days of enrollment into Medicaid. The data were collected via the hybrid method. The “hybrid” augments administrative (claims) data with random sample of members of the eligible population is selected, and medical review is conducted on the records of those members whose claims data show a negative administrative result (e.g., no claims are found) for the measure. The medical records are reviewed to potentially augment the claims data with evidence the service in question is actually received, but not documented in the administrative claims database.

⁴⁷ As part of its vital records data collection, CDPHE collects a variety of information about all births that occur in the state, including when prenatal care was initiated. Since birth certificate years correspond to the year of birth, whereas the prenatal care timeliness data from other sources correspond to the year of prenatal care, this graph adjusts the birth certificate data. Specifically, it assumes that births in 2007 represent prenatal care delivered in 2006, and so on.

⁴⁸ ESPSDT case manager survey 2009.

⁴⁹ Analysis of 06-07 PRAMS by CDPHE analysis Ricky Tolliver. 48.16% Not enough money/ No insurance; Didn't have Medicaid card 43.34%

⁵⁰ HCPF HEDIS. (See additional details in endnote 46.)

⁵¹ The "all Medicaid" line takes the individual HEDIS measures for each of the state's enrollment options (PCPP, FFS, Rocky Mountain Health Plan, Denver Health Plan) and weights them according to enrollment. Overall Medicaid enrollment (rather than enrollment specific to Medicaid women) is used for weighting. Managed care plans did not report quality data (including timeliness of prenatal care) in 2004. For that year (2004), the prenatal care timeliness indicator includes just FFS and PCPP. The "timeliness of prenatal care" measure calculates the percentage of deliveries that received a prenatal care visit as a member of Medicaid in the first trimester or within 42 days of enrollment into Medicaid. The data were collected via the hybrid method. The "hybrid" augments administrative (claims) data with random sample of members of the eligible population is selected, and medical review is conducted on the records of those members whose claims data show a negative administrative result (e.g., no claims are found) for the measure. The medical records are reviewed to potentially augment the claims data with evidence the service in question is actually received, but not documented in the administrative claims database.

⁵² Timeliness of prenatal care in the UDS is defined as prenatal care received in the first trimester. The estimates consist of the combined total of women having first visit with the FQHC and women having first visit with another provider.

⁵³ Uniform Dataset (UDS) analysis completed by CCHN staff. FQHC visits were higher in and 2005 (18,652) than in 2004 (17,291) and 2006 (18,159). This is equivalent to an 8% increase in prenatal care patients between 2004 and 2005. (The eligibility policy changes occurred at the end of calendar year 2004 and thus their greatest effects were felt in 2005.)

⁵⁴ Special data request by HPS to HCPF Business Analysis Section. The Business Analysis Section tailors data to specific internal and external customer needs that are not met through existing reporting. Thus, calculations may differ from existing published figures due to several factors that may include, but are not limited to: the specificity of the request, retroactivity in eligibility determination, claims processing and dollar allocation differences between MMIS and COFRS.

⁵⁵ Special data request by HPS to HCPF Business Analysis Section. The Business Analysis Section tailors data to specific internal and external customer needs that are not met through existing reporting. Thus, calculations may differ from existing published figures due to several factors that may include, but are not limited to: the specificity of the request, retroactivity in eligibility determination, claims processing and dollar allocation differences between MMIS and COFRS. Women receiving "emergency Medicaid" (Medicaid services for delivery only) were excluded from this analysis, since they are not eligible for prenatal care services.

⁵⁶ Hill I et al. Medicaid Outreach and Enrollment for Pregnant Women: What is the State of the Art? Prepared for the March of Dimes Foundation. The Urban Institute and NASHP. March 2009.

⁵⁷ Benefit Collaborative Policy Statement. Maternity Services. HCPF 2009.

⁵⁸ However, it is possible that some listed delivery providers that provide prenatal services directly also have relationships with other prenatal care providers to provide delivery services. Some FQHCs, for example, provide prenatal care services but contract with another entity for deliveries.

⁵⁹ Special data request by HPS to HCPF Business Analysis Section. The Business Analysis Section tailors data to specific internal and external customer needs that are not met through existing reporting.

⁶⁰ According to HCPF eligibility data, there were 24,000 Medicaid-paid births in FY07-08. According to HCPF eligibility data, approximately 16,500 births were eligible for Medicaid-paid prenatal care. However, approximately 7500 women who had a Medicaid-paid birth did not receive Medicaid-paid prenatal care, 6000 of which were ineligible for these services. Some women who do not qualify for Medicaid-paid prenatal care pay for prenatal care out-of-pocket. Based on 2007 birth certificate data, no more than 1,000 Medicaid-births report having had no prenatal care, and this group is assumed to come from this group of 7500 women who received no Medicaid-paid care. According to surveys of women who have recently delivered (PRAMS 06-07), 31 percent (or approximately 5000) of those who received Medicaid-paid prenatal care obtained it from a private physician's office and 69% (11,500) received care from clinics or another source.⁶⁰ The remaining women are allocated to FQHCs and hospital-based clinics according Figure 7 and FQHC data on prenatal care encounters. Prenatal care may be provided by other providers, such as public health departments and other non-FQHC clinics, but the volume is assumed to be low.

⁶¹ FQHCs are designated to provide health care services to populations considered to be medically underserved, which is defined by the Bureau of Primary Health Care (BPHC) as "all people who face barriers in accessing services because they have difficulty paying for services, because they have language or cultural differences, because there is an insufficient number of health professionals/resources available in their community...or people who have disparities in their health service status.

<http://www.machc.com/mOGchapter2.aspx>

⁶² While most WIC offices are located at county health departments. At least three FQHCs – Valley-Wide Health Systems, Denver Health, and Sunrise Community Health Center – have co-located their clinical services with WIC services. <http://www.cdphe.state.co.us/ps/wic/clinicdirectory.pdf>

⁶³ HCPF Benefits Collaborative Policy Statement. Maternity Services. 2009.

⁶⁴ American Academy of Family Physicians and the American College of Obstetricians and Gynecologists issued an AAFP-ACOG Joint Statement on Cooperative Practice and Hospital Privileges.

^{lxv} Where necessary, multiple years of data were combined to obtain a sample size of n=50.

⁶⁶ Prenatal, Labor, and Delivery Care in Colorado. Progress Report. March 1991. Reporting on recommendations from the Governor's Task Force on Prenatal, Labor and Delivery Care (1988).

⁶⁷ http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6WB2-4M04HVH-1&_user=10&_rdoc=1&_fmt=&_orig=search&_sort=d&_docanchor=&view=c&_searchStrId=952230316&_rerunOrigin=google&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=6a5f8897ffa74c95c4ac2432958af4c0

⁶⁸ Pregnant Women Focus Group Results. CDPHE. Summer 2002

⁶⁹ Glazner et al. The Effects of the Prenatal Plus Program on Infant Birth Weight and Medicaid Costs. Colorado Department of Public Health and Environment. December 2002.

⁷⁰ <http://www.nursefamilypartnership.org/content/index.cfm?fuseaction=showContent&contentID=4&navID=4> [Includes a list of academic publications.]

⁷¹ Devaney, B., E. M. Howell, M. McCormick, and L. Moreno, Reducing Infant Mortality: Lessons Learned from Healthy Start, Final Report, Princeton, N.J.: Mathematica Policy Research, Inc., July 2000. <http://www.mathematica-mpr.com/PDFs/healthyfinal.pdf> [References include a list of academic, university, and governmental publications.]

⁷² <http://www.centeringhealthcare.org/pages/research/research-evaluation.php> [Includes a list of academic publications.]

⁷³ Presumptive eligibility is not a care coordination program per se, but an administrative mechanism to expedite Medicaid enrollment. However, it is included here because it is an evidence-based strategy to facilitate access to care for women on Medicaid. Espeseth AH et al. Wisconsin's recent BadgerCare enrollment decline: how administrative rules can set off unanticipated change. *J Ambul Care Manage.* 2006 Oct-Dec;29(4):300-9.

^{lxxiv} <http://www.caretransitions.org/definitions.asp>

^{lxxv} Child Abuse Prevention and Treatment Act demonstration grant, Kathryn Wells, MD, principal investigator.

⁷⁶ Johnson T and Schulte S. Kids' Health Care Access: Diagnosis and Prescription for Improvement. Health Policy Solutions. December 2006.

⁷⁷ The "all Medicaid" line takes the individual HEDIS measures for each of the state's enrollment options (PCPP, FFS, Rocky Mountain Health Plan, Denver Health Plan) and weights them according to enrollment. Overall Medicaid enrollment (rather than enrollment specific to Medicaid women) is used for weighting. Managed care plans did not report quality data (including timeliness of prenatal care) in 2004. For that year (2004), the prenatal care timeliness indicator includes just FFS and PCPP. The "timeliness of prenatal care" measure calculates the percentage of deliveries that received a prenatal care visit as a member of Medicaid in the first trimester or within 42 days of enrollment into Medicaid. The data were collected via the hybrid method. The "hybrid" augments administrative (claims) data with random sample of members of the eligible population is selected, and medical review is conducted on the records of those members whose claims data show a negative administrative result (e.g., no claims are found) for the measure. The medical records are reviewed to potentially augment the claims data with evidence the service in question is actually received, but not documented in the administrative claims database.

⁷⁸ Hill I et al. Medicaid Outreach and Enrollment for Pregnant Women: What is the State of the Art? The Urban Institute and NASHP. March 2009.

⁷⁹ Hulseley T et al. The Influence of Attitudes about Unintended Pregnancy on Use of Prenatal and Postpartum Care. Journal of Perinatology. December 2000;20(8):513-519.

⁸⁰ Johnson T and Schulte S. Kids' Health Care Access: Diagnosis and Prescription for Improvement. Health Policy Solutions. December 2006.

⁸¹ Ibid.