Colorado Medicaid Prenatal Care
External Quality Review Focused Study
Legislative Summary
August, 2000

Prepared by First Peer Review of Colorado
For the State of Colorado
Department of Health Care Policy and Financing

Introduction

Purpose

The following study was conducted by First Peer Review of Colorado (FPRC) for the Colorado Department of Health Care Policy and Financing (HCPF or State). The study evaluates the quality of the care related to prenatal risk assessment for women enrolled in the Colorado Medicaid program in Health Maintenance Organizations (HMOs), the Primary Care Physicians (PCP) Program, and the Unassigned Fee-For-Service (UFFS) populations. It evaluates provider assessment, intervention, and follow-up for prenatal medical risk factors and for socioeconomic and behavioral risk factors and education and referral.

Background

A comprehensive prenatal care program involves a coordinated approach to medical care and psychosocial support that optimally begins before conception and extends throughout the prenatal period.

- Early and ongoing risk assessment should be an integral component of prenatal care because it may identify conditions associated with maternal and fetal morbidity and mortality and enable the provider to establish interventions that improve maternal, fetal, and newborn outcomes. (The American Academy of Pediatrics (AAP) and the American College of Obstetricians and Gynecologists (ACOG), 1997).
- Several expert panels (US Public Health Service, 1989; March of Dimes, 1993) have emphasized the importance of initial and ongoing medical and behavioral risk assessment, including the psychosocial aspects of care.
- The Colorado Medicaid program requires all managed care eligible clients to enroll in managed care, either in the Primary Care Physician (PCP) Program or in a Managed Care Organization (MCO).
- Women who are required to enter managed care but do not choose a Primary Care Physician (PCP) or an MCO within the required time frame are auto-assigned into a managed care plan.
- A pregnant woman' s care can begin in one program (i.e., Unassigned Fee for Service (UFFS) or under commercial insurance), and complete their care in another program.

Study Focus

This study evaluates risk assessment, intervention, and follow-up provided to Colorado Medicaid prenatal patients who delivered between April 1, 1998 and March 31, 1999. It specifically addresses assessment for:

- Medical risks (e.g., hypertension, diabetes, anemia)
- Socioeconomic risks (e.g., domestic abuse, family size, financial difficulties)

- Behavioral risks (e.g., smoking, alcohol use, drug use)
- Education/Referral such as WIC (Women, Infants, and Children) Program or childbirth education

The study considers:

- The degree to which documented risk assessment activities are consistent with specified indicators.
- When risk factors are identified, whether interventions are documented.
- When interventions are undertaken, whether there is documentation of follow-up.

The study examines general patterns and variation of risk assessment, intervention, and follow-up among HMO, PCP, and UFFS programs within the categories listed. It does not analyze variations among programs for specific assessment, nor does it address specific interventions for risks discovered during the assessment process. Although the study may incidentally identify medical quality of care issues, which are referred to a medical director for review and determination, it is focused primarily on evaluation of risk assessment, intervention, and follow-up activities.

Methods

Involvement of Stakeholders

In conducting this project, First Peer Review of Colorado (FPRC) has sought the input of relevant stakeholders in order to provide a broad base of experience to provide recommendations and guide decisions. These stakeholders have been given an opportunity to review and comment on the study design and protocols.

Sample Population

The sampling frame for the study population consists of female Medicaid clients who delivered single or multiple live or stillborn fetus(es):

- at greater than or equal to 22 weeks gestation;
- between April 1, 1998 and March 31, 1999.

These women must also:

- have been enrolled in an HMO, the UFFS, or the PCPP at the time of delivery;
- have had continuous enrollment in that HMO, the UFFS, or the PCPP for at least ninety (90) days prior to delivery; and
- have had at least one prenatal visit in their enrolled program.

The sample population was derived from lists of deliveries submitted by the HMOs for payment and claims for deliveries submitted by the PCP and UFFS programs.

Sampling

The sample design for this study was a random sample drawn from the three Medicaid Programs: (a) HMO, (b) PCPP, and (c) UFFS. Sub-levels were defined for each of the five HMOs: 1) Colorado Access (CA), 2) Community Health Plan of the Rockies (CHPR), 3) Kaiser Permanente (KP), 4) Rocky Mountain HMO (RM), and 5) United Health Care (UHC). The United Health Care plan, new to Medicaid in Colorado, had no members meeting study criteria and is therefore not included in the study.

Sampling sizes were established using a level of precision of 95% and an allowable error of $\pm$ 8%. Sample sizes of 150 clients were drawn for each level. A degree of oversampling was determined to allow for missing and unusable patient charts and to allow for the deletion of clients who did not have at least one prenatal visit during the study period. A total of 978 client records were reviewed for the study.

Review Tool

A record review tool was developed to abstract information from the sampled medical records. Approximately seventy (70) indicators were chosen and grouped according to common sections of prenatal medical records and other areas of special interest as follows: demographic information, maternal characteristics and prior obstetrical (OB) history, initial history and physical, medical risk factors, socioeconomic risk factors, behavioral risk factors, screening and surveillance, patient education and referral for special programs, and provider and record transfer issues.

A written protocol was developed to provide reviewers with instructions for completing medical record reviews. A pilot study was carried out and inter-rater reliability was measured throughout the study. Client records were reviewed onsite or via copies sent to FPRC offices and abstracted information was entered into the FPRC database.

All personally identifiable information was treated as privileged and confidential in accordance with federal and state laws and regulations as well as the ethical standards of the professions involved in conducting all FPRC activities.

Provider Accountability

Evaluation of program or plan performance was based on the premise that the HMO or Medicaid provider is "responsible" only for care provided during a client's enrollment in that plan or program. Because patient transfers during prenatal care may complicate the medical record abstraction process, composite records were developed to determine the total care for the patient within the plan. Nurse reviewers combined all prenatal records of clients with multiple providers to prevent duplication of analysis.

Data Analysis

This study is "client based" in that it was designed to track a client's care while the client was continuously enrolled in a particular HMO, PCP, or UFFS program. A composite record was developed for clients with more than one provider within a plan. The number of composite records per plan or program was insufficient to provide statistically significant information regarding the record transfer process.

Collected data were entered into specially designed Microsoft Access databases for secured storage and analysis. Software used for data analysis includes Microsoft Access and Statistical Analysis System (SAS) software version 6.12.

This study analyzes general patterns of care and significant differences between specific HMO, PCPP, and UFFS study strata. Statistical methods were used to evaluate differences between study groups at the 95% confidence level. No effort was made to evaluate variation among plans or programs for individual indicators within the sections of the study. Such a study is more appropriate for larger sample sizes addressing more focused issues.

A summary evaluation method was used to aggregate results for further interpretation of data. Overall performance measures for each plan were not determined. It was felt that such scores would be inappropriate in the absence of a predetermined system, agreed upon by the programs and plans, for weighting indicators and sections. Results were aggregated based on the three primary study focus areas (assessment, intervention, and follow-up) for each section of the data abstraction tool, without weighting. No further aggregation was undertaken.

Statistical significance was evaluated by comparison of confidence limits such that two proportions were considered statistically identical if any part of their confidence limits overlapped. Conversely, if no part of their confidence limits overlapped, they were considered to be significantly different.

Limitations

Difficulty with analysis is compounded by the broad range of types of assessment possible during a prenatal course, including medical history, past and present obstetrical complications, and the host of screening tests normally performed in an uncomplicated pregnancy. Added to this are social and economic concerns common in the Medicaid client population and behavioral problems that may also complicate pregnancy. Interventions may range from simple routine follow-up appointments to complex medical or surgical testing or procedures. The importance of these factors is not consistent across pregnancies and is highly specific to each individual according to the number and severity of factors present.

Findings

All Programs

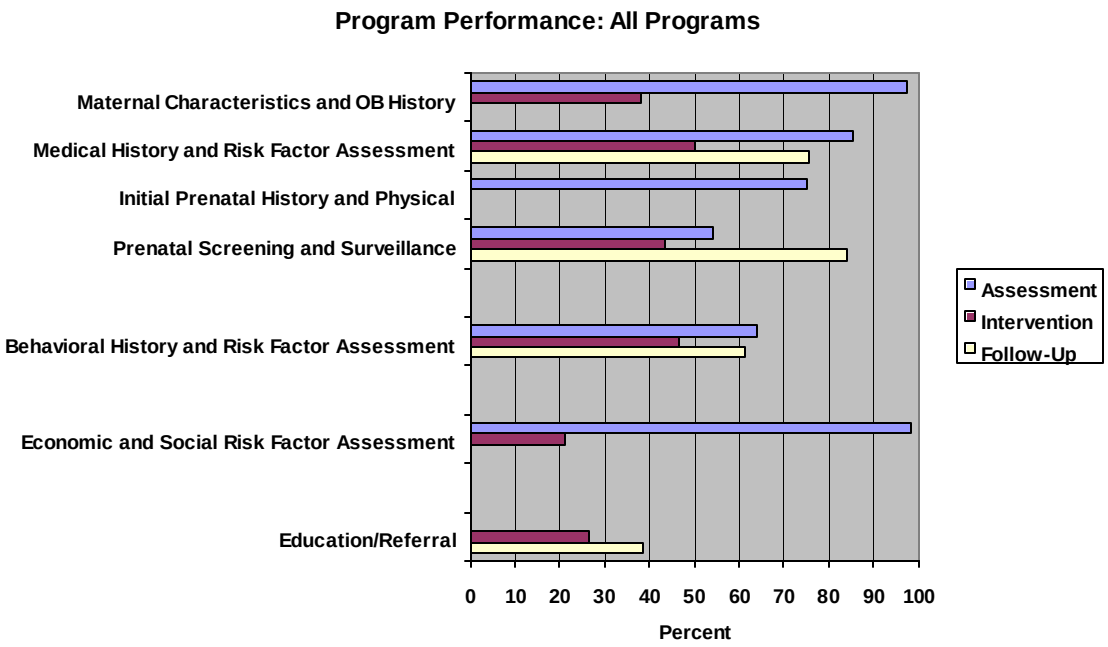
Note that throughout this report the term "program" refers to the HMO program as a whole, the PCPP, the UFFS program, or the entire Colorado Medicaid program. The term "plan" refers to the appropriate HMO plan under discussion. The term "All HMOs" refers to the aggregate data and statistics of all HMOs combined. The term "All Programs" refers to the aggregate data and statistics of all plans and programs.

The following sections address findings for the Colorado Medicaid Program as a whole, considering medical, behavioral, and socioeconomic risk factors and education and referral. These findings, with some variation, are reflected throughout all of the Colorado Medicaid programs. General trends are noted for assessment, intervention, and follow-up for each of the areas evaluated. In some cases a given program or plan may outperform or under-perform its peers, although, there is only occasional statistically significant difference among plans and programs for assessment, and almost none for interventions and follow-up of identified risk factors.

Ideally, performance for each area should be 100%, however, for the sake of further discussion, "good" or "high" performance is considered to be a level of 95% or greater, "fair" performance is considered to be at a level of 75%-94%, and "poor" or "low" performance is considered to be less than 75%.

Assessment for All Programs is inconsistent, ranging from good to poor. In the areas where risks were identified, intervention was poor. Performance for follow-up ranged from fair to poor in all aspects.

Findings for assessment, intervention, and follow-up for the Medicaid program as a whole are summarized in the following chart, grouped as to medical, behavioral, and socioeconomic risks.



The following graphic summarizes the performance of the Colorado Medicaid Program as a whole, based upon the set criteria.

All Programs

		Assessment	Intervention	Follow-up
Medical Risks	Maternal Characteristics and OB History	Good	Poor	N/M
	Initial Prenatal History and Physical	Fair	N/M	N/M
	Medical History and Risk Factor Assessment	Fair	Poor	Fair
	Prenatal Screening and Surveillance	Poor	Poor	Fair
Behavioral Risks		Poor	Poor	Poor
Economic and Social Risks		Good	Poor	N/M
Education and Referral		N/A	Poor	Poor

N/M: Not Measured
N/A: Not Applicable

Individual programs differ little from the results above.

- For assessment, performance is uniformly good for Maternal Characteristics and OB History and for Economic and Social Risks. For Medical History and Risk Factor

Assessment, performance is uniformly fair. For Initial Prenatal History and Physical assessment is fair to poor. For the remainder of the assessment areas, performance is poor.

- For intervention, performance is poor for all medical, behavioral, and economic and social risks (although there are undoubtedly study design problems for the Prenatal Screening and Surveillance section as noted in the Discussion section of this report).

- For follow-up, performance is fair to poor in all aspects.

Medical Risks

Maternal Characteristics and Obstetrical History

Assessment for All Programs is good at 97.43%. However, records documenting a plan of intervention are poor at 38.10%. Examination of individual indicators for this section finds low performance for all areas, but particularly for indicators of maternal age, fetal macrosomia, and history of habitual abortion. The low rate of intervention for maternal age is consistent with low performance for education and referral found later in this discussion. Additional concerns are noted in low level of intervention for previous Cesarean Section and history of preterm labor and preterm delivery. For Cesarean Section, a discussion of options for delivery or some note to address the issue closer to term would be expected. For preterm labor risk, intervention such as education for signs and symptoms of preterm labor, screening for bacterial vaginosis, and where appropriate, evaluation for cervical length would be expected.

Medical History and Risk Factor Assessment

Assessment for risks based on medical history is fair at 85.31%. Especially low are assessments regarding history of hepatitis at 74.54% and blood transfusion 75.44%. Of additional concern for pregnancy outcome, is the lack of assessment for history of herpes and history of uterine anomaly.

Interventions for positive findings are poor at 50.12%. Note that the number of positive responses for each plan and program are low. Especially low are interventions for a history of hepatitis at 27.78% (hepatitis screening would be expected) and blood transfusion at 6.25% (hepatitis screening and HIV screening would be expected). Of special concern is low level of plan of intervention for seizure disorders at 53.35%, where evaluation of medications and possibly adjustment of medications would be indicated.

Overall, follow-up of interventions is fair at 75.74%. Note that if no intervention is carried out, then no follow-up can be performed. Numbers for individual indicators are too low for statistical analysis. Higher levels of follow-up would be expected for such indicators as genital herpes, hepatitis, and heart disease.

Initial Prenatal History and Physical

Only assessment was evaluated via the medical record abstraction tool. Overall, performance is fair at 75%. Lowest findings are related to sexual history at 8.14% and counseling regarding high risk sexual behavior at 1.68%. Other low levels relate to urine screening for urinalysis at 68.47% and urine culture and sensitivity at 62.19%. Note that screening for Hepatitis B, syphilis, and rubella immunity are all less than 95%.

Prenatal Screening and Surveillance

Statistics for overall performance for prenatal screening assessment are low at 54.37%. A substantial portion of this low result appears to be due to study design related to the data abstraction tool for certain of the indicators. Repeat Rh (D) antibody screening, Rho (D) immune globulin administration, sickle cell screening, and AFP3 testing all represent interventions for specific risk groups rather than assessments for the sample population. For example, the population requiring repeat antibody screen is the sub-population of clients who are Rh (D) negative, not the population as a whole. Thus, the denominator for the indicator proportion was inaccurate. The same concern applies to intervention for these indicators. The issues can only be accurately resolved with focus studies for each indicator type.

Diabetes screening is low at 68.61%. Regular testing for proteinuria after 24 weeks is also low at 70.35%. Documentation of offering of HIV testing is fair at 84.85% Overall, interventions are low at 43.72%. Note that intervention for abnormal diabetes screen is only fair at 89.86% and that intervention for issues regarding proteinuria is low.

Overall, follow-up for interventions is fair at 84.04%. Follow-up for proteinuria is low at 69.33%. Follow-up for intervention for abnormal glucose screen is good at 96.77%.

Behavioral Risks

Assessment for behavioral risk is low at 64.03%. Specific assessment for THC (marijuana) and cocaine use is low at 25.28% and 22.42%, respectively. However, as per the record review protocol, such assessment may also have been included under "Other Substance Abuse" at 81.97%. Note that screening for physical and domestic abuse is low at 70.14%

Interventions for behavioral risks are uniformly low with a total of 46.36%, as is follow-up at 61.29%.

Economic and Social Risks

Overall, assessment of economic and social risks is good at 98.31%. However, interventions for identified risks is only 11.87%, and follow-up is only 21.05%

Education and Referral

Patient education and referral for special services such as the WIC Program and childbirth education are low at 26.47%. Note that referral for prenatal plus or case manager/pregnancy coordinator may represent a sub-population of patients. Note however, that childbirth class referral is only 30.78%, and that preterm labor education is low at 56.34%. Follow-up is low at 38.54%

Program Comparisons

The following tables compare the performance of each of the Colorado Medicaid Programs and Plans for assessment, intervention, and follow-up for prenatal risk factors. Detailed discussion and graphics are found in the body of the comprehensive report. Minimal statistically significant variation was found in assessment activities, and virtually none in intervention and follow-up. The results for the various aggregated indicators follow the same pattern as noted above for All Programs. "NM" (Not Measured) in the tables means that the attribute was not included in the data abstraction tool and was therefore not measured.

Records with Documented Assessment

Performance Measure (%)		Medicaid Plan/Program							
		CA	CHPR	KP	RM	All HMOs	PCPP	UFFS	All Programs
Medical Risks Assessment	Maternal Characteristics and OB History	99.54	94.01	98.61	99.33	97.94	95.21	97.84	97.43
	Initial Prenatal History and Physical	76.52	70.30	77.75	78.33	75.80	72.71	74.22	75.00
	Medical History and Risk Factor Assessment	90.08	75.80	97.57	78.87	85.69	84.28	84.87	85.31
	Prenatal Screening and Surveillance	56.37	51.67	55.79	57.09	55.30	51.94	53.24	54.37
Behavioral Risks Assessment		66.16	55.21	71.87	61.15	63.69	64.10	65.49	64.03
Economic and Social Risks Assessment		97.86	98.86	99.05	99.39	98.77	97.35	97.45	98.31
Education and Referral		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

N/A Not Applicable

Records with Documented Interventions

Performance Measure (%)		Medicaid Plan/Program							
		CA	CHPR	KP	RM	All HMOs	PCPP	UFFS	All Programs
Medical Risks Intervention	Maternal Characteristics and OB History	41.48	27.78	50.00	30.28	38.03	34.92	42.86	38.10
	Initial Prenatal History and Physical	NM	NM	NM	NM	NM	NM	NM	NM
	Medical History and Risk Factor Assessment	59.02	35.85	60.24	52.38	53.02	41.98	47.06	50.12
	Prenatal Screening and Surveillance	44.95	49.28	40.43	42.47	44.06	46.67	37.93	43.72
Behavioral Risks Intervention		41.90	30.95	60.47	53.10	46.91	48.89	38.60	46.36
Economic and Social Risks Intervention		23.50	18.00	10.71	19.23	20.91	22.22	20.45	21.05
Education and Referral		37.77	15.90	25.45	27.78	27.08	24.11	26.67	26.47

NM Not Measured

Records with Documented Follow-Up

Performance Measure (%)		Medicaid Plan/Program							
		CA	CHPR	KP	RM	All HMOs	PCPP	UFFS	All Programs
Medical Risks Follow-up	Maternal Characteristics and OB History	NM	NM	NM	NM	NM	NM	NM	NM
	Initial Prenatal History and Physical	NM	NM	NM	NM	NM	NM	NM	NM
	Medical History and Risk Factor Assessment	80.56	73.68	72.00	85.00	77.93	63.64	79.17	75.74
	Prenatal Screening and Surveillance	73.81	87.88	80.65	90.32	82.48	84.38	94.74	84.04
Behavioral Risks Follow-up		72.73	23.08	75.00	53.33	59.89	56.82	81.82	61.29
Economic and Social Risks Follow-up		NM	NM	NM	NM	NM	NM	NM	NM
Education and Referral Follow-up		34.38	32.72	50.18	46.47	41.10	38.25	27.17	38.54

NM Not Measured

Recommendations

In order to improve performance in assessment, intervention, and follow-up of risk factors for Medicaid prenatal clients, providers for the programs must address the specific areas of weakness. These areas of weakness include 1) assessment of risk factors for initial prenatal history and physical and medical history risk factors; 2) all areas of intervention; and 3) all areas of follow-up. FPRC believes that the Colorado Medicaid program can proactively facilitate this improvement through the use of quality improvement strategies that provide a framework for prenatal care consistent with current standards. FPRC believes that Colorado Medicaid should consider the following initiatives undertaken in collaboration with the HMO plans and the providers for the PCP and UFFS programs.

Standardize Prenatal Records

In order to encourage consistency of prenatal care, FPRC recommends standardization of the prenatal record used by Medicaid providers. Appropriate forms can systematize collection of information to assure that all needed information is recorded. Collaboration of the State Medicaid program with the HMO plans and the providers in the non-HMO programs (PCPP and UFFS) can assure that providers are knowledgeable of State expectations for specific assessment activities. Standardized forms are essential for implementation and evaluation of specific quality of care initiatives by associating risk assessment results, interventions and follow-up. Ease of evaluation of the health care record can enable consistent data abstraction.

- Representatives from HCPF and physicians from the HMOs, PCP, and UFFS programs should convene a panel to develop standardized forms to enhance medical record documentation. Ideally, this process should include the evaluation of current "best practices", such as those published by the American College of Obstetricians and Gynecologists (ACOG).

- Providing standardized forms to the plans and programs would assist in systematizing the collection of information to assure that all needed information is recorded and assessed, thus aiding in the necessary intervention and follow-up of identified risks.

- Providers that currently use computerized medical records could add appropriate fields without necessarily changing the overall format of the record.

Dissemination of Information Regarding Current Standards of Care

Standards of care for pregnancy constantly change as new knowledge and technology replace old. It should be possible to collect and regularly disseminate to plans and providers information from an authoritative organization, such as ACOG. Implementation of these standards would enhance quality of care to Medicaid clients thus improving pregnancy outcomes.

- HCPF should collaborate with the HMOs, PCP, and UFFS programs to identify major areas of concern regarding prenatal care based upon high volume, high cost, and problem prone diagnoses.

- A panel should convene with representatives from HCPF, the HMOs, PCP, and UFFS programs to establish current standards of care related to the identified areas of concern.

- HCPF should disseminate these standards to the PCP and UFFS providers. The HMOs should disseminate these standards to the HMO providers.

- Provider education should be provided by the plans and programs to incorporate these standards of care into the prenatal record.

Focus on Behavioral Risks

Risk assessment, intervention, and follow-up for behavioral risk factors is less than optimal. FPRC recommends the following:

- HCPF should conduct provider education through newsletters and seminars to the HMOs, PCP and UFFS programs to emphasize awareness of behavioral risk factors that effect pregnancy outcomes. The HMOs should distribute this information to their providers.

- HCPF should disseminate information to providers regarding State and community resources available for referral of clients with identified behavioral risks. This should include resources specific for geographical areas. The referral process and appropriate contact information should be supplied. This information should include mental health benefits available under the Medicaid program.

Focus on Economic and Social Risks

Although risk assessment for economic and social risk is good, intervention is poor. The low level of referral for education and social welfare programs suggests a need for improved education of plans and providers. Colorado Medicaid should emphasize the need for interventions for social and economic risk factors and their effects on pregnancy and newborn outcomes. FPRC recommends the following:

- HCPF should conduct provider education through newsletters and seminars to the HMOs, PCP and UFFS programs to emphasize awareness of economic and social risk factors that effect pregnancy outcomes. The HMOs should distribute this information to their providers. This would facilitate participation of clients in the assessment process.

- HCPF should disseminate information to providers regarding community resources available for referral of clients with identified economic and social risks. This should

include resources specific for geographical areas. The referral process and appropriate contact information should be supplied.

Strategies for Provider Education

Provider education should include identification of high occurrence risk factors in the Medicaid population. Providers should be made aware of the association of risk factors with specific outcomes of pregnancy and their associated social and economic costs. Education should be targeted toward screening methods that aid in establishing a therapeutic relationship with the patient. This should include assessment of physical, emotional, and behavioral signs that may not necessarily be revealed during the taking of the initial history. The development of education and training materials should include input from behavioral health professionals to suggest techniques that enhance patient involvement and cooperation in recommended intervention and follow-up.