The Minnesota Prenatal Care Coordination Project: Successes and Obstacles

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Synopsis

The Minnesota Prenatal Care Coordination Project was a statewide effort to present systematically education and technical support to providers as they implemented the Minnesota Prenatal Care Initiative for expanded services to high-risk women. Educational methods included holding 12 regional workshops throughout the State, one-to-one contacts by nurse consultants, and newsletters and a guidebook (manual) were distributed to reach community providers. Analysis of the implementation was conducted using site visits, interviews with providers, and reviews of medical records, claims data, and other project documents.

Successes in the first year were a twofold increase in the numbers of Medicaid-enrolled women who received risk assessment and enhanced services, more than one-third increase in provider participation, greater collaboration among multidisciplinary providers at the community level, and improved communication between State and local health care agencies.

Obstacles included provider resistance to changes in practice, dissatisfaction with the enhanced services package and level of reimbursement, and problems with implementation protocols. The project demonstrated that prenatal care providers will change; they will improve practices and collaboration as a result of personalized education and support.

"HEALTHY PEOPLE 2000" indicates that poor women still lack comprehensive and risk-appropriate prenatal care services in the United States (*1*). A major barrier to obtaining prenatal care for low-income women has been low provider participation in State programs (*2,3*). However, several States have developed initiatives to address the clients' needs and to focus on provider factors associated with prenatal care use (*4–6*). Recent program findings in Washington State (*4*), North Carolina (*5*), and Florida (*6*) have shown that funding improvements and special activities do increase provider participation and satisfaction, provider services to pregnant women are enhanced, and birth outcomes are improved.

Background

It is important that States continue to document and evaluate innovative programs designed to address provider participation leading to improvements in prenatal care for high-risk women. The Minnesota Department of Human Services (MDHS) began the Minnesota Prenatal Care Initiative (MPCI) in July 1988. The goal of MPCI was to improve and expand prenatal care services for Medicaid-enrolled women at high risk for poor birth outcomes.

The MPCI was authorized under the 1985 Federal Consolidated Omnibus Budget Reconciliation Act (COBRA) that provided State Medicaid Programs the option to offer enhanced prenatal care services to

Medicaid-enrolled women. The objectives of the Minnesota initiative were to encourage providers to use a prenatal risk assessment, provide care coordination, and offer a package of enhanced services to improve patient education and care. Providers and other collaborators would receive additional reimbursement for the supplemental services.

At that time, Minnesota also took advantage of the Omnibus Budget Reconciliation Act (OBRA) 1987 legislation that gave States the flexibility to expedite eligibility and expand Medicaid up to 185 percent of the Federal poverty level. The MPCI and expanded eligibility standards were funded by Federal and State Medicaid dollars.

Concurrently, in the fall of 1988, the Minnesota Department of Health (MDH) received a 3-year SPRANS (Special Projects of Regional and National Significance) grant from the Maternal and Child Health Bureau of the Public Health Service for the Minnesota Prenatal Care Coordination Project. The goal of the Coordination Project was to establish statewide a locally based prenatal care coordination system that included comprehensive, risk-appropriate care for pregnant women receiving Medicaid; the care was to be provided by a multidisciplinary team of medical care providers and public health professionals.

The Coordination Project objectives were to (*a*) educate prenatal and other health providers on the specific components of the Prenatal Care Initiative, (*b*) increase the use of risk assessment and the enhanced package of services for women receiving Medicaid-reimbursed care, and (*c*) increase and improve the provision of coordinated prenatal care services for high-risk, low-income women. The MPCI and Coordination Project were complementary efforts (see box). This report describes the MPCI and Coordination Project and the successes and obstacles of implementation; it is based on analysis of project data.

Methods

Minnesota Prenatal Care Initiative. Under the MPCI, medical providers who offer prenatal care services to Medicaid-enrolled women are asked to complete a prenatal risk assessment provided by the MDHS (*7*). A modified version of the Creasy Risk Assessment (*8*) was selected; it included medical, obstetric, and psychosocial factors. Women who score 10 or more points are categorized as high risk and eligible for the enhanced services. It is possible to score 10 or more points for psychosocial factors such as cigarette smoking, street drug use, and alcohol use

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(during this pregnancy), late prenatal care, and poor social situation (including abuse, inadequate support system, and similar issues).

The MDHS Initiative guidelines suggest a package of additional services for the prenatal care of high-risk women and reimbursing providers for the services, in addition to standard medical prenatal care payment. The initiative components include the following services and the 1988 and 1990 reimbursements:

- risk assessment ($5 – $6.32),
- high-risk antepartum management ($66 – $75.90),
- care coordination ($26.40 – $30.36),
- Prenatal Health Education I (preterm birth prevention) ($66 – $75.90),
- Prenatal Health Education II (lifestyle and parenting support) ($56.10 – $64.51),
- Prenatal Nutrition Education ($16.50 – $18.97),
- one followup home visit after delivery to women with high-risk pregnancies ($52.80 – $61.75).

At the outset, if all services were offered, the provider could receive an additional $283.80 for prenatal care for each woman. After the MPCI had been in place for 3 years, the potential reimbursement amount was increased to $327.39. Medical providers can select any or all of these services for a high-risk woman. Providers have the option of offering any of the enhanced care services themselves or referring the patient for some or all of the services to another prenatal provider, usually a public health nurse or hospital-based prenatal education program.

The MPCI was designed as an open system that allows any prenatal care provider to participate who meets basic MDHS standards. Unlike many other States (for example, California), no special certification process was involved. The rationale for an open approach was to promote provider acceptance of the MPCI and encourage high levels of participation. This policy decision was viewed as a critical strategy in a State with decentralized and primarily private Medicaid maternity care services.

In addition to an open approach, it was also

Expansion of Prenatal Care in Minnesota

Expanded and expedited eligibility

- Expand Medicaid eligibility up to 185 percent of Federal poverty level.
- Implement short form for Medicaid eligibility and determine eligibility within 5 working days.

Minnesota Prenatal Care Initiative

- enhanced prenatal services for high-risk women
- increased reimbursement to providers for provision of enhanced services
- public-private partnership in provision of services (1988-present)

Minnesota Prenatal Care Coordination Project

- educational and technical support services
- facilitate development of public and private collaboration at community level (1989–91)

anticipated that intensive provider education and support would be needed to promote acceptance and optimal implementation of the MPCI. In Minnesota, medical providers have had a high level of autonomy in their decision-making on care for Medicaid-enrolled clients, and they were unaccustomed to receiving patient care recommendations from the State. The Coordination Project was conceived in response to this concern.

Prenatal Care Coordination Project. The Minnesota Prenatal Care Coordination Project was designed to encourage changes in the provision of service to meet the objectives of the Prenatal Care Initiative, using a comprehensive public health model rather than a medical model. The project provided information on strategies for outreach and services to high-risk pregnant women and encouraged increased coordination among medical care, community public health, and social support services.

During the 3-year span of the Coordination Project, October 1988 to September 1991, a variety of educational and technical assistance strategies were used to reach prenatal providers throughout the State. A perinatal nurse specialist was hired by MDH to develop and coordinate the project. In addition, the MDHS hired a nurse coordinator who was available for personal and phone consultation. The nurse coordinator worked closely with the Coordination Project to provide education to local communities. The MDHS coordinator served as a direct conduit for interpretation of guidelines and policy development and became an important liaison among MDH, MDHS, and providers.

Phase I Strategy (year 1) included 12 educational workshops for medical and public health prenatal care providers and other associated professionals. A curriculum was developed with assistance from an advisory work group that emphasized the multiple factors that affect birth outcomes including nutrition and lifestyle and medical risk factors. The curriculum included models depicting coordination of care between medical clinics and community services for hard-to-reach pregnant women.

Twenty-five physicians, selected from different areas of the State, attended a "educate the educator" session at the State medical society when the curriculum was presented. Following the initial session, teams of two physicians supported by staff from the medical society, MDHS, and MDH presented the curriculum in their communities. The community level workshops were attended by 313 persons who included physicians, public health, clinic and hospital nurses, nutritionists, social workers, office staff, and several legislators.

Phase II Strategies (years 2 and 3) were designed to follow up and reinforce the initial educational interventions. Three perinatal nurse specialists, assigned to different regions of the State, provided direct outreach, education, and technical support to prenatal health care personnel. The nurse specialists worked with local communities to assist them in the development of implementation strategies. In conjunction with local public health nurses, they presented workshops and made individual contacts to prenatal care providers.

A provider manual and educational bulletin were also developed and distributed in Phase II. The provider manual included protocols for services, referrals, and billing and was used by the project staff and local public health agencies in the initiative education to local medical clinics staff. The educational bulletin, "The Perinatal Connection," was developed by project staff and widely disseminated to providers, administrators, and policy makers. Each quarterly bulletin focused on a specific topic such as preterm labor prevention, preconception care, and social support during pregnancy.

Analysis strategies. A variety of strategies were used to gather process data (*9,10*). These strategies included a telephone survey of providers, four

community site visits in different regions of the State, medical record reviews, analysis of MDHS claims data, and analysis of other documents.

Interviews were conducted through two different strategies; one was the telephone survey, and the second was inperson interviews during the site visits. The telephone survey was conducted with 31 medical providers throughout the State, with sampling based on a maximum variation strategy (*10*).

Maximum variation sampling is a purposeful sampling strategy that aims at capturing and describing the central themes or principal outcomes that cut across much of participant or program variation. The primary aim of maximum variation sampling is to identify both program variations and significant shared patterns within variation. Cases are selected by identifying diverse characteristics for constructing the sample.

In this study, selected characteristics were community size, community location in the State, dominant model of providing prenatal care in the community, and relationship of public health nursing to the medical providers in the community. Maximum variation sampling is a sound and logical alternative strategy when limited resources prohibit random sampling of a sufficient number of sites to generalize to the entire State. Providers who had submitted a minimum of 10 risk assessments to the MDHS were selected from varied geographic areas in proportion to the number of births per health region. The rationale for this selection criteria was an MDHS priority to understand program implementation concerns and problems among providers who had had experience working with the MPCI.

Given limited resources, investigation of provider nonparticipation in the MPCI was deferred at the time of this analysis. A structured interview questionnaire was designed and pretested prior to use with selected health care providers. Telephone interviews were scheduled with providers and took approximately 1 hour per interview.

Another analysis strategy was the site visits to four communities with contrasting demographic characteristics. The visits included preplanned semistructured interviews with providers, review of medical records, and interviews with selected MPCI clients. The provider interviews were conducted with staff (physicians, nurses) from 11 medical clinics and staff (public health nurses, prenatal educators, and private home health nurses) from 5 other agencies that provided MPCI services.

The review of medical records was done to determine accuracy of the risk assessment process and to identify documentation of the enhanced services. Before the site visit, a listing was obtained of all women who received Medicaid reimbursed care and had been risk assessed within the last 6 months. All medical records of women who were categorized as high risk (more than 10 points) and a blinded random selection of records of one-third of all low-risk women were reviewed, for a total of 106 records. Twelve clients, whose records were part of the random sample, were available; they consented to an interview in their home. The goal of the semistructured client interview was to assess perception of the components and their effectiveness.

A final strategy was review and analysis of Coordination Project documents which included contact reports kept by the Coordination Project perinatal nurse specialists and the MDHS nurse coordinator. Birth outcome data were not available because of the lack of a system linking medical assistance data and birth certificate data.

Table 1. Women who received pregnancy-related or Minnesota Prenatal Care Initiative (MPCI) services, or both: changes between FY 1989 and FY 1990

Service	*FY 1989*	*FY 1990*	*Change*
Women who received any pregnancy-related service[1]	21,440	24,869	+3,429
MPCI risk assessment[2]	1,242	2,875	+1,633
MPCI enhanced services:[2]			
High-risk management	923	1,950	+1,027
Care coordination	770	1,693	+923
Prenatal Education I or II or both	666	1,513	+847
Prenatal Nutrition Education	297	821	+524
High-risk followup home visit	129	513	+384

[1] Based on an unduplicated count of women with any of 3 Minnesota Department of Human Services (MDHS) pregnancy-related diagnosis codes.
[2] Based on MDHS claims information file data.

Results

Initiative successes. Achievement of the goals and objectives of the MPCI were documented by the following. First, in FY 1990 more than twice as many eligible women, 2,875, were risk-assessed as in FY 1989, 1,242 (table 1). Among the private and public medical providers who were interviewed by phone or during the site visits, 89 percent indicated that they completed the MDHS Risk Assessment on all Medicaid-enrolled pregnant women. In contrast, only 48 percent indicated that they routinely completed risk assessments prior to the initiative. Occasionally, providers would not complete the risk assessment if they thought a woman would score less than 10 points.

Second, the number of women who received en-

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hanced services doubled for all components (table 1). The numbers of women that received high-risk management increased from 923 in FY 1989 to 1,950 in FY 1990. These statistics were based on service claims data submitted to the MDHS. Analysis of the data revealed two dominant service models: (*a*) enhanced services were provided by clinic staff, including physicians, certified nurse-midwives, nursing staff or (*b*) the patients were routinely referred to public health or private home agency nurses for the services.

A third success was an increase in medical provider participation in the initiative by more than one-third between FY 1989 and FY 1990 (table 2). In 1989, 33 percent (113 of 339 Medicaid eligible providers) submitted initiative claims for pregnant women compared with 45 percent (158 of 351) of eligible providers in 1990. In addition, participation by other health professionals, including public health nurses and private home health workers, doubled indicating that more referrals were made for provision of enhanced services to providers outside of medical clinics. Overall, provider participation increased by 43 percent between FY 1989 and FY 1990 (table 2).

Finally, a majority of interviewed providers noted that the initiative had increased their understanding of the role and contributions of other health care providers in the community, especially public health nurses. The increase in referrals was generally seen as beneficial because of the increased capacity for continuity of care and ability to address systematically and comprehensively the complex needs of high-risk, low-income pregnant women.

In addition, providers indicated that they appreciated the extra reimbursement and recognition for their work with these women. Interviews with providers indicated that many would agree with a physician who said, "I had initial doubts, but the initiative has helped me appreciate the benefits of a multidisciplinary approach, especially with women who have multiple social problems."

Coordination Project successes. The Coordination Project demonstrated successes in three important areas. First, 90 percent of the interviewed providers reported making changes in their prenatal care practices as a result of personal contacts with perinatal nurse specialists. In addition to the MDHS risk assessment and MPCI enhanced services, changes in practice reported by providers included increased referrals to outside agencies, expansion of clinic-based prenatal educational services, addition of nursing staff to coordinate the implementation of the MPCI, and more attention to psychosocial as well as physical needs of prenatal patients.

Second was the increased communication and cooperation between State agencies and local providers. These efforts were facilitated through the 12 workshops attended by physicians, nurses, nutritionists, and social workers that were co-sponsored by the MDH–MDHS and the State medical association. In addition, a total of 348 inperson contacts were made by the perinatal nurse specialists, primarily through contacts with individual providers at the local level. Providers noted that the availability of the perinatal nurse specialists and easy phone access to nurses at the MDHS and MDH "gave the bureaucracy a human face." This access was viewed as a unique aspect of this project which improved the level of cooperation and communication between State agencies and local providers.

Another success was the increased communication and collaboration between public and private providers at the community level. In three of four site visit communities, public health nurses had contacted providers and worked to promote a public health model of perinatal care and implementation. In these communities, referrals for initiative services increased more than 50 percent in the first year of the project. Lastly, more than 50 percent of the interviewed medical providers indicated that they had increased their awareness of the importance of comprehensive prenatal care and the complex medical and social needs of high-risk, low-income pregnant women.

Initiative obstacles. A variety of obstacles were encountered as the MPCI was implemented. First, less than 50 percent of the interviewed providers thought that the enhanced services adequately addressed the needs of high-risk, Medicaid-enrolled pregnant women. Comments included, "This education and these methods of handling the problems are often insufficient." and "These services are really not helpful to the noncompliant Medicaid women who really need the help." Critics thought the services should be more open-ended and individu-

alized to be more effective. Others commented on the potential for duplication of services because other programs such as Special Supplemental Food Program for Women, Infants and Children (WIC) offered similar education.

A second obstacle was that the initiative guidelines were interpreted and implemented inconsistently by providers, as documented by interviews and the medical record review. To promote maximum provider participation, these inconsistencies were anticipated and accepted by MDHS. Quality assurance was included under standard MDHS procedures and was not a part of this project. Less than half of the interviewed providers indicated that they had used the MDHS guidelines to develop their MPCI educational curriculum, especially for the lifestyle and parenting education component. A majority of providers noted that they discussed alcohol, smoking, and drug use with women. However, a minority indicated that they included information about parenting, stress management, communication, and self-esteem.

In addition, inconsistencies were noted in the completion of the risk assessments in all 11 clinics where medical records were reviewed. Review of medical records during site visits indicated that underscoring on risk assessments was more prevalent than overscoring. The most frequent error was to find information documented in the medical record, especially regarding lifestyle and social factors, that was not reflected by point allocation on the risk assessment. While 84 percent of the interviewed providers indicated that they offered care coordination to all eligible women, more than 50 percent were unable to explain the activities that they performed. The majority of providers required some prompting by the interviewer to describe care coordination activities or directly asked the interviewer for an explanation.

Coordination of initiative services at the local level was an obstacle mentioned by more than half of the interviewed providers. Three of the four site visit communities were successful in negotiating referral mechanisms and division of responsibilities between medical and public health providers. However, all commented on the amount of time and energy consumed by this endeavor. Turf issues, a history of poor or no communication between private medical providers and public health agencies, and lack of understanding of the role of public health nurses were all obstacles that required attention before a successful working partnership could be developed. In one site visit community, resistance by the largest private medical provider successfully blocked a public-private partnership for providing initiative services despite concerted efforts by county public health nurses.

Table 2. Provider types who submitted Minnesota Prenatal Care Initiative claims and changes between FY 1989 and FY 1990

Provider	*FY 1989*	*FY 1990*	*Percent*
Medical providers (public and private)	113	155	37.2
Home care providers (public and private)	10	21	110
Total	123	176	+43.0

Another frequently cited barrier was provider dissatisfaction with reimbursement rates. Although actual medical provider participation rates rose between FY 1989 and FY 1990, the interviewed providers commented that rates remained unreasonably low. Providers also indicated at least some dissatisfaction with the risk assessment tool, the enhanced services, and the structure and cumbersome paperwork associated with the initiative. Their dissatisfaction was often related to not being included in the development of the MPCI. Providers also commented about the difficulty, frustration, and sense of inadequacy they felt in working with women who have complex psychosocial problems.

Despite increases in numbers of eligible women who received MPCI services between FY 1989 and FY 1990, risk assessment claims were submitted to MDHS for less than 12 percent of women who received Medicaid-reimbursed prenatal care services. However, interviews with providers indicated that many did not submit claims for completed risk assessments due to women's scoring less than 10 on the tool, low reimbursement for tool completion, or lack of time or interest in the initiative.

Coordination Project obstacles. Overall, there were relatively few obstacles to the implementation of the Coordination Project. One issue was that, despite careful strategizing to encourage physician attendance at the statewide educational workshops, only 50 physicians attended. In contrast, 237 clinic and public health nurses attended. Many additional physicians (247) were reached through the followup contacts or phone contacts by the perinatal nurse specialists. Others received information about the MPCI at medical conferences and county medical association meetings. The implementation process was also facilitated by involvement and support from local public health nurses. Distribution of the "Initiative

'. . . the MDHS risk assessment and MPCI enhanced services, changes . . . increased referrals to outside agencies, . . . and more attention to psychosocial as well as physical needs of prenatal patients.'

Manual'' and the ''Perinatal Connection'' educational bulletin provided additional information to providers.

Discussion

The Minnesota Prenatal Care Coordination Project demonstrated that planned educational interventions were associated with changes that improved and expanded services to pregnant women in need. The successes and obstacles encountered in the implementation process indicate strategies that have a high success potential and those that are less effective.

The Coordination Project had an impact on effecting change at the community level. In many communities, the coordination project staff played an integral role in linking the public and private sectors of the community health care system. In some cases, the initiative and the Coordination Project were the first efforts at public-private cooperation and communication in a community. In some areas, public health nurses and physicians met together for the first time to work out a cooperative plan where the unique contributions of each discipline were recognized and maximized to provide comprehensive services to high-risk pregnant women. Referral systems were developed and communication improved so that pregnant women were the beneficiaries of more coordinated and comprehensive health care. Communities that successfully linked private and public health care services accomplished this with substantial determination and work. Multiple meetings, phone calls, negotiation, and compromise were required to work out systems that satisfied all providers and met patient needs.

A secondary gain of the project was the collaboration of the State medical society with the MDH and MDHS in offering the statewide workshops. The participation of the medical society provided credibility that many private medical providers respected. Second, local communities are now more familiar with persons from State agencies and can turn to them for questions and concerns.

Other accomplishments related to the project were specific practice changes documented by MDHS data. Between year 1 and 2 of the project, there were substantial increases in the numbers of eligible women who were risk assessed and received enhanced services. Overall comments from interviewed clients indicated mixed responses to the individualized attention. Clients appreciated the services but identified issues such as repetition of information from providers.

An additional positive outcome was the increased awareness and sensitivity among providers and communities to the complex needs of high-risk prenatal clients. The project directed attention to the assessment of both medical and psychosocial high risk needs of the women. Equally important, providers became more aware of community services available to address these needs and used more multidisciplinary collaboration.

Sources of frustration for the Coordination Project staff were the length of time and multiple contacts required to stimulate and support system changes in many communities. In communities where collaborative linkages were not successfully negotiated, Coordination Project staff usually had less involvement or were thwarted in their efforts. In these communities, opposition to government interference in medical practice was frequently a dominant issue. Consequently, there was little or no openness to efforts to make changes that involved government programs and cooperation with the public sector. These were the communities where reviewers encountered resentful physicians and public health nurses who criticized the ''mandated change'' they associated with the MPCI. Provider issues, such as low participation rates and dissatisfaction with reimbursement rates, require ongoing negotiation and dialogue with MDHS.

Although a wealth of information was gathered through provider interviews, site visits, and document analysis, there are limitations to this review. First, it is likely that the reported numbers are an underestimate of participating providers and of women who received services. Providers may have offered services, such as performing a risk assessment and then failed to follow up with a claim submission. Several interviewed providers indicated that claims were not submitted for a variety of reasons, including misunderstanding of claims procedures and the belief that submission was not cost-effective because of personnel time required and the low level of reimbursement.

Second, public health nursing agencies often used funds from their Maternal Child Health block grants for MPCI services. In some cases these agencies did not understand claims processes but, more frequently,

reimbursement levels were higher when claims were submitted to alternative funding sources. These problems may have been alleviated by the improved planning and consultation with providers.

Although the funding for the Coordination Project has ended, there are numerous benefits that continue in the State. First, the publication of the project educational bulletin, "The Perinatal Connection" has continued. Many public and private providers requested the continuation of the bulletin because it provided an excellent source of information on program updates and current maternal child health literature. As a result, the Maternal Child Health Division of MDH, the Minnesota Healthy Mothers Healthy Babies Coalition, and the Minnesota chapter of the March of Dimes collaborated to continue funding the publication and distribution of the bulletin.

Second, a unified pregnancy risk assessment form is being developed. While providers were not completely satisfied with the initiative risk assessment, it served as an incentive for debate about the importance of risk assessments and the need for a tool that would be used by all providers across the State. Although providers were aware of the benefits of risk assessments, they were frustrated with the variety of different forms that needed to be completed for different payers. As a result, the Minnesota Council of HMOs, the Minnesota Medical Association, and the MDHS, with consultation from MDH and the University of Minnesota Maternal and Child Health Major, have collaborated to develop a new, more comprehensive tool that includes additional psychosocial items.

Finally, the initiative and the Coordination Project raised statewide awareness of the importance of prenatal care and moved it to the top of the agenda as a priority for reform. The successes and obstacles encountered in the implementation of the MPCI and Coordination Project can provide valuable information for States as they plan to improve their prenatal services. This unique effort can also provide a model for an effective strategy to promote provider support and cooperation in the implementation of new health care initiatives.

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