Health Canada Santé Canada

Health Canada Evaluation of the Canada Prenatal Nutrition Program (CPNP)

Final Report

Prepared by:
PRA Inc. Information Info Strategy

Presented to

Health Canada
Departmental Audit and Evaluation Committee

May 6, 2004

Canada

Action Plan
in Response to the 2003 Departmental Evaluation of the Canada Prenatal Nutrition Program

Introduction

The following Action Plan responds to the recommendations for the Canada Prenatal Nutrition Program (CPNP) provided by the Departmental Program Evaluation Division (DPED), Applied Research and Analysis Directorate (ARAD) in the Information, Analysis and Connectivity Branch (IACB) and are extracted from the document: ***Health Canada Evaluation of the Canada Prenatal Nutrition Program: Final Report, October 17, 2003.***

Evaluation Approach

The CPNP evaluation approach is consistent with the program's Guiding Principles and the field of health promotion and population health. The approach is consultative, participatory, and collaborative. It reflects the three jurisdictions of CPNP implementation: national, regional, and local. Finally, it is evidence based, and integrates data collection with capacity building, two essential elements of population health and health promotion.

Background

The national evaluation strategy for CPNP began to take shape shortly after the announcement of the program in 1994. The evaluation framework was prepared based on a three part literature review. A National Evaluation Working Group was formed, including federal, regional, provincial, municipal, First Nations, and Inuit representation. Federal representation included both PPHB-CPNP, FNIHB-CPNP staff and staff from the Departmental Evaluation Division.

The National Evaluation Framework was approved by Health Canada in 1996 and is based on extensive collaboration with stakeholders including Joint Management Committees (JMCs), prenatal/nutrition experts, CPNP projects, Health Canada regional offices, the Program Evaluation Division, and community groups.

Data collection began in 1997, following pilot testing of the evaluation tools and staff training. Ongoing training has been provided to projects as the evaluation tools have evolved.

One of the main evaluation tools, the Individual Client Questionnaire (ICQ) was modified following consultations with projects, academics, and other experts, and re-launched in 2001 as the ICQ2. With the introduction of the new tool, data collection requirements were modified to improve data quality. In addition to the ICQ2, a Welcome Card was launched so

that demographic information on all participants could be obtained within 4 months of a participant's entry into the program. The ICQ2 is completed and submitted when a woman's participation in the program ends or within 6 weeks of delivery of her infant.

Ongoing evaluation has allowed the program to improve on a continual basis. This is done formally and informally. CPNP projects undergo a rigorous renewal process when Contribution Agreements come to an end. Project renewal is based on evaluation results.

The program has also reported evaluation results in many formats including participation and presentations at national and international conferences, peer reviewed journal articles, and "popular reports" of evaluation findings which are distributed to projects and other stakeholders. CPNP has been the subject of research by graduate students and was the subject of a doctoral dissertation.

The program recognizes the need for a new evaluation framework, given the requirement for a Results Based
Management and Accountability Framework (RMAF) for Grants and Contributions programs.

The following section contains the recommendations that follow from the integration and analysis of several lines of evidence. They are based on the findings and conclusions in component evaluation reports and address both program implementation and evaluation.

It is important to note that the quantitative data analysis which was conducted as part of this evaluation is largely comprised of preliminary work and is not able to support recommendations for adjustment of program activities or target groups at this time. The need for additional work is identified in the body of the report; however, future changes are contingent upon addressing the first recommendation.

Action Plan

The Action Plan below includes a total of six (6) recommendations extracted from the IACB synthesis evaluation report and the context provided by DPED for each recommendation. It also offers a context for the CPNP interpretation of each recommendation; describes the action planned in response; designates a responsible group and time for completion of each identified action.

Program Recommendations

Recommendation 1: Program rationale and objectives should be revisited.

DPED Context:

The CPNP has evolved to include a range of services that extend beyond food supplementation and dietary assessment. Program rationale and objectives should reflect this evolution. Program objectives and project activities should be linked, and the relationship between the program objectives and the projects should be clear. Important components include:

1a. Development of a program logic model
1b. Expert review and program evaluability assessment
1c. Communication of changes to program staff.

CPNP ACTION in response to recommendation 1:

1a. Logic Model - final draft complete March 31, 2004.
1b. Program Evaluability Assessment Report received March 31, 2004.
1c. Communication strategy confirmed, December 2003; implementation ongoing.

CPNP Context:

Contrary to "evolving to include a range of services", the CPNP anticipated and engendered a comprehensive range of services extending beyond food supplementation and dietary assessment. These were just two of ten suggested program elements outlined in the Guide for Applicants (1995, ongoing). The wide range of program implementation approaches and activities is reflective of community based programming and consistent with available evidence supporting effective health promotion practice.

Development of a **program logic model** for the CPNP has created an opportunity to further define the program objectives and distinctly link them to program activities. The logic model was developed with input from CPNP Regional Program consultants, Evaluation Analysts and Children's Managers and from CAPC, FASD, FNIHB and MPSD. Completed March 31, 2004, the logic model will be part of the CPNP Results-based Management and Accountability Framework (RMAF) submission to Treasury Board, Fall/04.

An independent contractor (Bart Millson, M.A., of Orbis Partners Inc., Ottawa) was contracted to complete a comprehensive data quality analysis - **evaluability assessment** - of the CPNP surveys; data holdings; databases and evaluation system corresponding with the Individual Project Questionnaire (IPQ), the Individual Client Questionnaire 2 (ICQ2) and the Welcome Card (WC). A final report was submitted March 31, 2004. The findings and recommendations of this assessment inform RMAF development and guide the continuous improvement of the CPNP evaluation system. An additional assessment of the data generated by the original participant survey - ICQ1, as well as earlier IPQ reporting periods, is now under consideration as this would strengthen the capacity of the CPNP to complete both intermediate and summative impact assessments and to explore trends in program impact.
Effective **communications** to program and project staff continue to be a priority for National office. A reference group was established for the development of the CPNP RMAF/RBAF, including representation from Regional and National office, National Evaluation Team for Children (NETC), Community Action Program for Children (CAPC), First Nations and Inuit Health Branch (FNIHB), Departmental Program Evaluation Division (DPED), the Fetal Alcohol Spectrum Disorder (FASD) Initiative and Management and Programs Services Directorate (MPSD) of PPHB. As part of their role, these representatives act as key players in the communication of changes and advancements to program staff. In addition, monthly teleconferences with all Regional CPNP leads and with NETC have resumed and create an additional opportunity to keep program staff as well as regional evaluation analysts and Children's Managers informed of CPNP program and evaluation developments and changes.
A successful communication strategy was developed and implemented to inform project staff of the upcoming change in contractors for the CPNP evaluation. In addition, the Request for Proposals for a new contractor to manage the ongoing performance measure and evaluation data collection system for CPNP includes the requirement for toll-free telephone support to project staff and for liaison with Regional Evaluation Analysts and Program consultants on issues related to ongoing data collection, storage, entry, analysis and reporting.
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Recommendation 2: National leadership should be strengthened.

DPED Context:

Key informants identified needs for additional training and national guidelines for program staff, and wish information sharing to be coordinated among regions. The CPNP should be situated within the context of ECD, and alliances should be encouraged in order to encompass determinants of health that are beyond the mandate of the CPNP or Health Canada. Relationships within Health Canada with DPED and CPSS could be strengthened to expand the gathering, monitoring, assessment, and sharing of evidence.

CPNP ACTION in response to recommendation 2:

- **National Office manpower has been increased resulting in increased capacity, leadership and communication from national office.**
- **Regular training events for projects and for regional staff have been established and will continue on a regular, on-going basis.**
- **National guidelines have been/are being established: Standard Operating Procedures manual completed March 2004; mid-term review framework underway for 2006/07 implementation.**
- **Regular opportunities for coordinated information sharing have been established and will continue to be maintained and enhanced.**
- **CPNP will continue to maintain and nurture strategic alliances within and outside of the Department. Current examples include collaboration with the FASD Initiative; the Canadian Diabetes Strategy; the Breastfeeding Committee for Canada; the Tobacco Control Program of the Healthy Environments and Consumer Safety Branch, and a National Advisory Committee on Food Security.**
- **Through their joint membership in NETC, DPED and CPNP have an established mechanism for continuous communication and collaboration. Opportunities for further strengthening the relationship will continue to be pursued.**
- **The CPNP continues to consult with CPSS on issues related to surveillance, research and knowledge development in the domain of maternal and infant health.**
- **Health Canada continues to recognise the CPNP as a component of the federal investment in the Early Child Development Agreement to promote healthy pregnancy, birth and infancy.**

CPNP Context:
During and prior to the collection of information for the DPED report, CPNP national office experienced a number of **staffing shortages**. Since that time, most of these staffing issues have been resolved, with the current CPNP national office complement consisting of 4 FTEs (3 Program Consultants, 1 Evaluation Analyst), a CPNP/CAPC team leader and the imminent addition of a CPNP/CAPC evaluation team leader. Maintenance of this staffing complement is required to support adequate capacity for **communication and leadership** from national office.
Since 2002/03, a 1-day **training event for regional and national staff** has been incorporated into one CPNP/CAPC National meeting each year. Prior to each meeting, regions identify priorities of focus for the training. A consultation was held with national and regional CPNP Staff in November 2003 to further assess training needs.
Regular **training opportunities for project-level staff** have also been established through funding from the CPNP/CAPC National Project Fund (NPF). Regional training events take place every 3-4 years and showcase products produced from the National Project Fund as well as other priorities identified by regional training committees. One such event was completed in 2003/04 and the next is planned for 2006/07.
The introduction of an ***Evaluation Guidebook*** for project staff in 2001/02 provides a coordinated mode for on-going training in evaluation. The guidebook includes detailed descriptions of the data collection requirements and answers frequently asked questions in a user-friendly, accessible format. The guidebook is updated regularly to keep the information current, with the next revision planned for summer/fall 2004. In addition, project staff receive periodic training on evaluation. National office conducted training events in all regions in the Fall of 2001, and supports and participates in regionally organized evaluation training events through regional CAPC/CPNP conferences on an on-going basis.
A ***Standard Operating Procedures Manual*** **(SOP)** for regional and national CPNP, CAPC and Aboriginal Head Start (AHS) staff has been created. The manual is a reference tool of **established national guidelines** on a variety of issues including project monitoring and renewal, evaluation, as well as role descriptions of national and regional program and evaluation staff. The SOP was completed and launched April 1, 2004 and will be revised on an on-going basis.
In addition to the SOP, a **mid-term review framework** is being created to assist regional staff in assessing projects between contribution agreement renewal periods. The framework will set out standards and guidelines against which projects are evaluated and their progress monitored. A working group consisting of Children's Program Managers, Program Consultants and Evaluation Analysts, with representation from each region, has been established; the framework will be implemented in 2006/07.
As mentioned previously, regular monthly teleconferences with all regional CPNP leads and Evaluation Analysts (NETC) have been established, providing an opportunity for **coordinated information exchange** among regions. In addition to the monthly teleconferences, two face-to-face meetings take place each year for CPNP lead Program Consultants, as well as three face-to-face NETC meetings per year.

CPNP national and regional staff continue to collaborate informally and formally with colleagues in the Department. Monthly meetings are held between CPNP-FNIHB and CPNP-PPHB staff at the National level. In addition, periodic coordination of dates and locations for National meetings of CPNP-FNIHB and CPNP- PPHB create opportunities for regional leads from both funding streams to connect.

National and Regional CPNP evaluation and program staff participate on the RMAF Reference Group. The DPED is also represented on this group, as well as on the NETC. **Strategic alliances** have been developed with the Fetal Alcohol Spectrum Disorder (FASD) initiative, Health Canada's Healthy Pregnancy Strategy, the Canadian Diabetes Strategy; the Breastfeeding Committee for Canada; the Tobacco Control Program of the Healthy Environments and Consumer Safety Branch, and a National Advisory Committee on Food Security.

CPNP continues to work to influence the gathering of program-relevant data such as risk factors for low birthweight and vulnerable populations by the **Canadian Perinatal Surveillance System (CPSS)**, as well as databases in provinces/territories and disseminates relevant publications to CPNP stakeholders.

Recommendation 3: The program approach is widely regarded as valuable and should be continued.

DPED Context:

Staff and participants value the flexible, customized approach and the core services provided by projects. The principles of community development should be preserved. The trade-offs between the flexibility of this approach and standardization, accountability, etc. must be acknowledged.

CPNP ACTION in response to recommendation 3:

The principles and approach of the CPNP will be maintained.

CPNP Context:

The flexible implementation approach of CPNP is a cornerstone of community based programming and consistent with more than 20 years of evidence supporting effective health promotion practice. While flexibility may challenge epidemiologically-based approaches to evaluation, flexibility and accountability are not *"trade-offs"*. As outlined in the response to recommendation 2 above, CPNP has standardized procedures in place to assure accountability and program integrity while allowing for

flexibility in program delivery at the local level. And, as outlined in the response to recommendation 5 below, the CPNP has made some refinements to the evaluation system strengthening the capacity to generate the evidence required to assess impact. The CPNP will maintain efforts to generate evidence through ongoing evaluation and performance measurement strategies to demonstrate program relevance, accountability, fiscal responsibility and effectiveness including positive health and social impacts on the lives of participants.
With increased recognition of the program at the community level and growing health disparities nationwide, demand for access to the CPNP is increasing steadily. While communities have had considerable success leveraging financial and in-kind contributions from provincial partners and other stakeholders, Health Canada investment in the program has remained fixed since the 1999 budget enhancement and program sustainability is becoming an issue.
To further support program sustainability, future CPNP evaluation and performance measurement efforts will also focus on forging stronger linkages with broader research and policy initiatives exploring the effectiveness of population health promotion and of community health interventions in particular.

PERFORMANCE MONITORING AND EVALUATION RECOMMENDATIONS:

Recommendation 4: Program success/impact needs to be redefined in light of program objectives.
DPED Context:
All objectives should lead to objective measures. Measures must be realistic in terms of data collection and in terms of the ability to attribute impacts to CPNP funding or support. Objective measures must be: • consistent with and reflective of all program goals and objectives; • reasonably expected to result from program activities as outlined in a program logic model (Recommendation #1a); • identified for both intermediate outcomes (e.g., smoking reduction/cessation) and final outcomes (e.g., reduction in low birth weight); • reflected in a revised evaluation framework (Recommendation #5); • able to be collected and analyzed within the bounds of program performance measurement and evaluation.

CPNP ACTION in response to recommendation 4:
A Results Based Management and Accountability Framework (RMAF) and a Risk Based Accountability Framework (RBAF) will be completed for the CPNP by June 2004. **A subsequent revision of the CPNP Evaluation Framework is planned for FY 2005/06.**
CPNP Context:
Precise impact **attribution** to federal funding will continue to be a challenge in an intentionally collaborative program model founded on joint Federal, Provincial/Territorial ministerial protocols that are jointly managed by both jurisdictions at the Regional level. The CPNP will continue to pursue adequate measures to describe the Federal ***contribution*** to health impacts.
The CPNP RMAF will be included as one of thirteen (13) initiatives corresponding to the Umbrella RMAF for the ***Promotion of Population Health Grants and Contributions***. It will include a program profile, a program logic model (completed, March 31, 2004), a performance measurement strategy, an evaluation strategy, a reporting strategy and a costing strategy. These strategies will require the identification of performance and evaluation indicators, the confirmation of evaluation issues and questions, the identification of data requirements, and the elaboration of a data collection strategy. The CPNP RMAF is well underway and will be completed by June 30, 2004, for submission to the Branch Audit and Evaluation Committee (BAEC) on July 9, 2004 and to Treasury Board in the Fall of 2004. A reference group of key stakeholders has been established to participate in the RMAF and RBAF development.

The CPNP Evaluation Framework will also be revised (see CPNP Action and Context, Recommendation 5). A consultation is scheduled for the in-person NETC meeting in the Fall of 2004 to begin identification of membership in a reference/advisory group for the development of a revised CPNP Evaluation Framework.

Recommendation 5: The approach to performance measurement and program evaluation must be refined.

DPED Context:

The Evaluation Framework should be revised in accordance with the recommendations above. ***Quantitative*** data analysis must be undertaken to improve the understanding of program performance.

An analysis plan should be produced, and should consider:

- the capabilities and limitations of a reasonable ICQ and IPQ data collection plan (e.g., census, random sample of projects, random sample of participants, etc.) and the dataset which will result from the chosen plan;
- the principles and limitations of social science research, acceptable limitations, risk assessment, and contingency planning (e.g., consideration of sampling, non-response, representativeness, bias, and weighting);
- the appropriate analysis to isolate program impact, assess success of key activities, and support cost-effectiveness or cost-benefit analysis if possible;
- the need for significant ***qualitative*** data collection and analysis for a program of this nature.

CPNP ACTION in response to recommendation 5:

- **A Baseline Data Study, completed in January 2003, demonstrated a significant program impact on breastfeeding initiation rates but was, unfortunately, not considered in this report.**
- **Ongoing *quantitative* data collection on participants was reassessed and revised over a period from 1999-2001 to address data quality issues inherent in the original participant survey system.**
- **A revised survey system including standardized random sampling was introduced in 2001.**
- **An evaluability assessment of this revised survey system was completed (March 31, 2004) to inform the development of an evaluation strategy (RMAF); a new evaluation framework and an evaluation analysis plan. The merits of expanding the evaluability assessment to review ICQ1 data is currently under consideration.**

- **The CPNP Evaluation Framework will be revised, planned completion March 31, 2006.**
- **Analysis plans will be developed in consultation with NETC and other technical experts.**
- **Analysis plans exploring within program comparisons of impact on maternal and infant health and social outcomes for participants of varying risk profiles, receiving varying levels of CPNP service will be implemented: on the final set of 36,000 ICQ1 surveys in 2005/2006, if appropriate; and on ICQ2 and Welcome Card surveys in 2006/2007.**
- **Opportunities for *qualitative* data collection will be explored to correspond with 10 year anniversary events for CPNP in 2005/06.**
- **An additional series of case studies, based on the model carried out as part of the IACB evaluation of CPNP, are planned for 2008/09.**

CPNP Context:

Early in the implementation of the CPNP, a ***Baseline Data Study*** was designed by an expert working group to compare the health outcomes for CPNP participants with those of women at comparable risk who did not have access to CPNP or similar programs. This pioneering study design relied on primary data collection to identify a comparison group after it was determined that existing perinatal databases did not contain most of the information required. While it was recognized that the population intended for the CPNP were difficult to identify for programming that included social supports, the experience confirmed it was even more challenging to identify a comparison group for survey only. Nonetheless, the Baseline Data Study did provide a sufficiently robust sample to make a statistically significant conclusion about the impact of the program on breastfeeding initiation rates.

When risk factors were adjusted, in order to make the two study groups more comparable, there was a significant difference in breastfeeding initiation with the odds nearly double that mothers in the CPNP would initiate breastfeeding. In particular, this association of breastfeeding initiation favouring mothers in the CPNP was strong and consistent for mothers in the low income level.

The ongoing CPNP **data collection plan** was **reassessed and revised** to address limitations that emerged with the original system. The process began in 1999 and involved numerous consultations. A revised ICQ (the ICQ2) and a new instrument (the Welcome Card), as well as a standardized, random sampling strategy were introduced in 2001. The ICQ2collects data that allows for greater precision in the measurement of changes in health behaviours during program participation (e.g. change in smoking behaviour).

A shorter time for the survey in the field and the introduction of a **standardized random sampling** approach strengthened data quality by:

- reducing burden on projects;
- increasing reliability and representativeness of the data;
- reducing resource expended on quantitative, individual measures and therefore increasing opportunity for investment in qualitative or other evaluation tools that detect program impact on broader health determinants and intermediate outcomes.

Results indicate the new instruments are working well and have been embraced by projects, with a 94% return rate on the Welcome Card in the first year of use.

The CPNP **Evaluation Framework** will be revised. Work will commence in late 2004/05, with the bulk of the work taking place in 2005/06 and a targeted completion date of March 31, 2006.

As mentioned previously, an **Evaluability Assessment** was conducted (completed March 31, 2004) that included an examination of the capabilities and limitations of the ICQ2, WC and IPQ datasets, and made preliminary recommendations for an analysis plan for CPNP data. The merits of expanding the evaluability assessment to review ICQ1 data is currently under consideration.

A technical advisory committee, including NETC, will be formed to include more stakeholder and expert advice to support the **technical authority** in the design and execution of analysis plans and report generation.

Attempts to identify comparison groups through secondary data sources for **impact determination** have proven illusive. Building on the ***Baseline Data Study***, the most promising approach currently is an exploration of within program comparisons of maternal and infant health outcomes for participants of varying risk profiles, receiving varying levels of CPNP service. This work will be repeated following steps to address the limitations identified by peer reviewers of preliminary attempts. Further analysis will be done on 36,000 ICQ1s now in the database to determine potential program impact on birth weight and breastfeeding initiation. It is anticipated that this will be carried out by March 31, 2006. Subsequently, a similar analysis will explore more than 50,000 ICQ2 and WC surveys and include an examination of impact on other outcomes such as tobacco use and food security. This activity is planned for 2006/07. Key to the realization of a definitive quantitative impact assessment of the CPNP, will be a move to decrease the number and frequency of administering quantitative data surveys. A shift to an episodic approach would free up resources to pursue more in depth analyses and to collect qualitative data.

It is agreed that there is a need for more **qualitative data** collection and analysis. Opportunities will be explored to incorporate this into 10 year anniversary events (to be carried out in 2005/06). Potential activities include focus groups and retrospective exit surveys. The long term plan regarding qualitative data is to repeat an additional set of case studies based on the model carried out as part of the DPED evaluation of CPNP (potentially in 2007/08 or 2008/09).

Recommendation 6: The program is unable to support cost-effectiveness analysis at this time.

DPED Context:

To conduct cost analysis, two challenges must be overcome:

Cost-effectiveness requires detailed data on both (incremental) program impacts and program/project costs. A reasonable approach may be to conduct a detailed study of a project or a small sample of projects with proven management and well-defined activities in order to validate the program approach.

If program objectives and indicators of success are revised to include measures of well-being (improved self-esteem, improved parenting, reduced stress and isolation, etc.), cost analysis will become more complicated, and it is possible that not all elements will be able to be included.

CPNP ACTION in response to recommendation 6:
The CPNP is engaged in the development of a research proposal in partnership with Canadian researchers experienced in the design, implementation, analysis and publication of cost-effectiveness studies of community-based health and social support initiatives.
CPNP Context:
The work done by IACB during the cost-effectiveness study highlighted the challenges in conducting this type of study on a national, community based program dealing with vulnerable populations such as the CPNP.
On Sept. 2, 2003 a Letter of Intent was sent to the Canadian Institute for Health Research (CIHR) for a 5 year study of CPNP entitled, *"The Effects and Expense of Three Approaches to the Canada Prenatal Nutrition Program on Healthy Developmental Trajectories of At-risk Infants, Children, Youth and their Families."* The research team for this proposal includes Carolyn Byrne, PhD, Ellen Vogel PhD, Gina Browne, PhD, Jacqueline Roberts, PhD, Amiram Gafni, PhD, and Canada Prenatal Nutrition Program National and Regional Investigators.
The proposed research is a 5-year longitudinal study designed to assess the effects (biological, behavioural, cultural and environmental) and expense of adding a mix of provider-initiated health and social service interventions to programming offered through the CPNP. The outcomes associated with a comprehensive and multifaceted CPNP approach will be compared to two other less extensive approaches to community-based programming. The research design will involve multiple CPNP sites across Canada selected because they provide components strongly associated with successful comprehensive prenatal programs. The proposed research will be the first to evaluate the cost effectiveness of an enhanced CPNP and demonstrate that more comprehensive care averts the use of other costly crisis services in an at-risk population.
While not accepted for that round of funding, one reviewer recommended the researchers go on to develop a full proposal. The researchers are now planning to develop a full proposal by July 2004 and resubmit for consideration by the Randomized Control Trial review committee of the CIHR.

HEALTH CANADA EVALUATION OF THE CANADA PRENATAL NUTRITION PROGRAM: FINAL REPORT

October 17, 2003

Prepared for:
Health Canada

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EXECUTIVE SUMMARY

Introduction

Health Canada launched the Canada Prenatal Nutrition Program (CPNP) in 1994. As one of the initiatives identified in *Creating Opportunity* ("Red Book I"), the CPNP was designed to provide funding for communities across the country to initiate or expand prenatal programs for pregnant women. Since that time, the CPNP funding process has been administered through Health Canada. The First Nations and Inuit Health Branch (FNIHB) of Health Canada manages projects for First Nations women living on reserve and Inuit women in some northern communities (the First Nations and Inuit Component, or FNIC), while the Population and Public Health Branch (PPHB) manages all others.

The CPNP supports broad and flexible health promotion programming, however the program does have specific goals. CPNP funds local communities to develop or enhance programs for pregnant women whose poor health, inadequate nutrition, or social or economic circumstances place them at particular risk for poor birth outcomes. The projects can continue providing assistance until infants are six months of age, up to a total of 12 months for an individual woman.

The program's target population includes women with low income; pregnant and parenting teens; women living in conditions of violence; women who use alcohol or tobacco; women who engage in substance abuse; women who are Aboriginal;[1] recent immigrants or refugees; and women who are socially or physically isolated or with inadequate access to services.

PPHB program objectives are as follows:

1. "to reduce the incidence of babies born with unhealthy (low or high) birth weights;
2. to improve the health of pregnant women;
3. to promote the initiation and duration of breastfeeding;
4. to increase the accessibility of services for:
   - less adequately served high-density urban and isolated-rural Northern areas;
   - culturally or linguistically hard-to-reach at-risk mothers and infants;
5. to proliferate partnerships, linkages and collaboration in the community in order to increase the recognition and support for the needs of at-risk mothers and infants and to increase the number of effective community resources and programs for them."

[1]The First Nations and Inuit component of CPNP is mandated to serve women living on-reserve and in most Inuit communities. The Population and Public Health Branch component of CPNP targets Aboriginal women living off-reserve and in some Inuit communities.

The FNIC is available to all women in First Nation/Inuit (FNI) communities who are expecting a child or of childbearing age. The objectives and guidelines of the FNIC are consistent with those of the off-reserve community component, but are customized to reflect the needs of FNI women. Since 1999, the objectives of the CPNP FNIC have been to:

1. "Improve the adequacy of the diet of prenatal and breastfeeding First Nations and Inuit women;
2. Increase access to nutrition information, services, and resources to eligible First Nations and Inuit women, particularly those at high risk;
3. Increase breastfeeding support, initiation, and duration rates;
4. Increase knowledge and skill building opportunities for those involved in the Program;
5. Increase the number of infants fed age-appropriate foods in the first 12 months."

Methodology

The purpose of this evaluation is to assess the success of the program in achieving its objectives and to provide program management with objective information to guide decision making. Health Canada engaged Prairie Research Associates (PRA) Inc. to review the component evaluation reports and prepare a final report.

PRA prepared the report based on six component evaluation reports, as well as a range of additional documents, which provided context and methodological descriptions. A complete list of the documents is in Appendix A. While the final evaluation report includes a description of the First Nations and Inuit Health Branch component of CPNP, the findings of this study pertain to the Population and Public Health Branch component of CPNP only.

PRA synthesized information from various documents and reports to compile a description of the program and the evaluation design. Evaluation findings were drawn from the six component evaluation reports which provided multiple lines of evidence[2]. These were drawn together by:

- comparing findings across reports,
- noting instances of consensus or lack of consensus,
- using quantitative data to provide descriptive information for projects or respondents
- integrating qualitative data to help explain findings from quantitative data
- using individuals' quotations from interviews or case studies to capture key insights or commonly held beliefs.

[2]The component reports for the economic evaluation and the intermediate outcomes remained in draft for at the time this evaluation report was developed.

This final report emphasizes findings that appear across more than one component report, or where several sources (e.g., several interviewees or interviews and focus groups) provided similar observations or findings. Health Canada staff provided direction and supplementary information on an as-needed basis, and findings were evaluated by considering reports from peer reviewers on the qualitative and quantitative data and analysis.

Evaluation Findings

Program Relevance

The CPNP was created when Canada's low birth weight rates were higher than in some other comparable counties. The program was designed to provide funding to initiate or expand programming at the community level in order to create linkages and increase access to services, ultimately improving maternal and infant health and promoting breastfeeding. Recent statistics indicate that unhealthy birth weights persist in Canada, and the literature supports access to comprehensive programming, such as that provided by CPNP, to address known risk factors, such as smoking.

Evaluation component reports indicate that there has been success in improving access to services and providing comprehensive care to women. They also describe projects with multiple partners that are well integrated into the community, successfully providing services that are unique in their approach or target group. Federal involvement in the area of prenatal care is valued, and staff and participants are enthusiastic about the program.

Implementation

The CPNP has successfully enrolled and received data on women with many of the targeted risk factors, such as being of low income or education, a teenager, single parent, Aboriginal women or recent immigrant, or using harmful substances such as alcohol and tobacco. It is estimated that 7% of all pregnant women and 60% of low-income women participated in the program.

The CPNP improves access by providing new or expanded services in high-risk communities and by linking women to a range of other services through partnerships or referral. Customizing services to meet needs (e.g., for an interpreter, child care or transportation, peer support, etc.) is also key to reaching women who may be isolated.

Resource shortages limit program reach, and 16% of projects reported excess demand. In addition, some interviewees believe that the more highly structured projects in Quebec are less likely to increase access for the most marginalized women. However, when CPNP particpant data is combined with data from the Canadian Community Health Survey (CCHS) on the number of reported births, Quebec appears to have good "penetration."

The Program is described as being well managed overall. Challenges include program and project human resource needs, sharing resources with a much larger program (CAPC), and participatory community development approach.

Program management was specifically evaluated along three lines: coordination, monitoring and evaluation. Coordination occurs through a variety of positions and committees that link regions and the national office, as well as various stakeholders within a region. Overall, relationships are described as positive and successful. However, the program may require work to achieve coordination among regions and to form alliances with other governments or initiatives. Additional challenges include: limited time and resources devoted to coordination activities, a need for additional training, and gaps in national guidelines and practices.

Monitoring activities are undertaken by Regional Program Consultants and through the project renewal process. The Auditor General's Report in 2001 found the monitoring of projects to be adequate and the large proportion of projects approved for renewal would suggest that these activities have been effective.

Key informants reported that the CPNP has created a culture of evaluation within the program, and considerable training and capacity-building has taken place. Evaluation activities have faced several challenges: the program has evolved and evaluation issues and questions have not kept up; the national evaluation activities have focused on health outcomes and not studied other program impacts in depth; and quantitative data collection was not designed as a sample, but as a census, which was not achieved. Key informants identified increased communication, review of the evaluation framework, and further integration of national, regional, and other program evaluation as areas for further work.

Program data suggest that projects regularly partner with a range of other organizations including health professionals, businesses, non-profit organizations, schools, government, and individuals. Nearly all projects received in-kind support from another organization, and most also encourage participants to become active volunteers. In-depth information on these relationships was not available for all projects, but case studies describe: formal partnerships with program sponsors, co-location or shared space, shared staffing, and linkages and referrals to a wide range of other services. Partnerships can require a lot of work from projects but increase community capacity and access to services for program participants in exchange.

Program Success

The CPNP has delivered comprehensive programming to women at risk of poor pregnancy outcomes. The economic evaluation component of this evaluation attempted to statistically estimate program impact on birth weight, other infant health indicators, maternal health, and breastfeeding. Results, however, of the quantitative components of this study are treated as exploratory rather than conclusive, so quantitative analysis of success is not available.

Program participants who participated in case studies provided qualitative assessment of the program and services and are overwhelmingly pleased with the services. They reported all major aspects of the program — the nutritional component, information and education, and social support — to be important and valuable. They reported a range of outcomes that are consistent with program objectives — including improved access to services, reduced isolation, improved nutrition, healthier pregnancies and outcomes, more information on breastfeeding, better parenting, reduced stress, and more self-confidence

Cost-effectiveness

The evaluation framework indicated that cost-effectiveness analysis would be undertaken; however, the literature review for this evaluation highlighted the challenges of cost-effectiveness analysis for prenatal nutrition programs. Although the economic evaluation component of this study does touch on cost-effectiveness with respect to breastfeeding preparation, the proper data foundation does not exist at this time to examine cost-effectiveness with a high degree of confidence.

Three pieces of information are required for cost-effectiveness or cost-benefit analysis. First, program impacts must be determined. One must be able to measure and attribute desired outcomes to a particular intervention or set of interventions. To study cost-effectiveness, costs must be calculated for the intervention or set of interventions. For cost-benefit, program outcomes must be translated into dollar terms (e.g., savings to the health care system). Currently, the data are unable to support a cost analysis.

Recommendations

This section contains the recommendations that follow from the integration and analysis of all lines of evidence. They are based on the findings and conclusions in component evaluation reports and address both program implementation and evaluation.

It is important to note that the quantitative data analysis which was conducted as part of this evaluation is largely comprised of preliminary work and is not able to support recommendations for adjustment of program activities or target groups at this time. The need for additional work is identified in the body of the report; however, future changes are contingent upon addressing the first recommendation.

Program Recommendations

1. **Program rationale and objectives should be revisited.** The CPNP has evolved to include a range of services that extend beyond food supplementation and dietary assessment. Program rationale and objectives should reflect this evolution. Program objectives and project activities should be linked, and the relationship between the program objectives and the projects should be clear. Important components include:

   1a. Development of a program logic model
   1b. Expert review and program evaluability assessment
   1c. Communication of changes to program staff.

2. **National leadership should be strengthened.** Key informants identified needs for additional training and national guidelines for program staff, and wish information sharing to be coordinated among regions. The CPNP should be situated within the context of ECD, and alliances should be encouraged in order to encompass determinants of health that are beyond the mandate of the CPNP or Health Canada. Relationships within Health Canada with DPED and CPSS could be strengthened to expand the gathering, monitoring, assessment, and sharing of evidence.

3. **The program approach is widely regarded as valuable and should be continued.** Staff and participants value the flexible, customized approach and the core services provided by projects. The principles of community development should be preserved. The trade-offs between the flexibility of this approach and standardization, accountability, etc. must be acknowledged.

Performance Monitoring and Evaluation Recommendations

4. **Program success/impact needs to be redefined in light of program objectives**. All objectives should lead to objective measures. Measures must be realistic in terms of data collection and in terms of the ability to attribute impacts to CPNP funding or support. Objective measures must be:

   - consistent with and reflective of all program goals and objectives;

- reasonably expected to result from program activities as outlined in a program logic model (Recommendation #1a);
- identified for both intermediate outcomes (e.g., smoking reduction/cessation) and final outcomes (e.g., reduction in low birth weight);
- reflected in a revised evaluation framework (Recommendation #5);
- able to be collected and analyzed within the bounds of program performance measurement and evaluation.

5. **The approach to performance measurement and program evaluation must be refined.** The Evaluation Framework should be revised in accordance with the recommendations above. Quantitative data analysis must be undertaken to improve the understanding of program performance. An analysis plan should be produced, and should consider:

   - the capabilities and limitations of a reasonable ICQ and IPQ data collection plan (e.g., census, random sample of projects, random sample of participants, etc.) and the dataset which will result from the chosen plan;
   - the principles and limitations of social science research, acceptable limitations, risk assessment, and contingency planning (e.g., consideration of sampling, non-response, representativeness, bias, and weighting);
   - the appropriate analysis to isolate program impact, assess success of key activities, and support cost-effectiveness or cost-benefit analysis if possible;
   - the need for significant qualitative data collection and analysis for a program of this nature.

6. **The program is unable to support cost-effectiveness analysis at this time.** To conduct cost analysis, two challenges must be overcome:

   - cost-effectiveness requires detailed data on both (incremental) program impacts and program/project costs. A reasonable approach may be to conduct a detailed study of a project or a small sample of projects with proven management and well-defined activities in order to validate the program approach.
   - If program objectives and indicators of success are revised to include measures of well-being (improved self-esteem, improved parenting, reduced stress and isolation, etc.), cost analysis will become more complicated, and it is possible that not all elements will be able to be included.

1.0 Introduction[3]

Health Canada launched the Canada Prenatal Nutrition Program (CPNP) in 1994. As one of the initiatives identified in *Creating Opportunity* ("Red Book I"), the CPNP was designed to provide funding for communities across the country to initiate or expand prenatal programs for pregnant women,[4] particularly those with low income or who are otherwise at risk of a poor pregnancy outcome. Since that time, the CPNP funding process has been administered through Health Canada. The First Nations and Inuit Health Branch (FNIHB) of Health Canada manages projects for First Nations women living on reserve and Inuit women in some northern communities, while the Population and Public Health Branch (PPHB) manages all others.[5] Currently, CPNP services are delivered by more than 900 projects across the country, about 350 of which are administered by the PPHB and approximately 550 of which are administered by the FNIHB.[6]

While the community-based projects are the core of the CPNP, the program also includes a Fetal Alcohol Syndrome/Fetal Alcohol Effects (FAS/FAE) Component and the Canada Perinatal Surveillance System, which provides relevant health information to the program.[7]

The purpose of this evaluation is to assess the success of the program in achieving its objectives and to provide program management with objective information to guide decision making. The evaluation has both formative and summative elements, and investigated each of the five program objectives. Specifically, the evaluation was designed to respond to the existing evaluation framework by employing a range of qualitative and quantitative methods, including the analysis of a large program database of individual and project records. The

[3]This report contains information found in six component evaluation reports as well as a range of other program documents. For accuracy, information in this report closely resembles the documents on which it is based.

[4]CPNP Document Review Report, Terms of Reference, p. 2.

[5]CPNP Evaluation Overview, p. 1.

[6]http://www.hc-sc.gc.ca/dca-dea/programs-mes/cpnp_goals_e.html

[7]CPNP Document Review Report, p. 3.

evaluation findings form the basis for recommendations to improve the program, and identification of the data required to support further evaluation and program refinement.

Health Canada engaged Prairie Research Associates (PRA) Inc. to review the component evaluation reports and prepare a final report. PRA prepared the report based on six component evaluation reports, as well as a range of additional documents, which provided context and methodological descriptions. A complete list of the documents is in Appendix A. The final evaluation report pertains **only** to the community-based prenatal nutrition programming component of the CPNP. Both PPHB and FNIHB processes are described, but findings focus on the program as administered by the PPHB. The program as administered by the FNIHB is being evaluated separately.

PRA synthesized information from various documents and reports to compile a description of the program and the evaluation design. Evaluation findings were drawn from the six component evaluation reports, which correspond to the six Health Canada evaluation methods (these are described in Section 2.3, below). The six component reports provided multiple lines of evidence. These were drawn together by:

- comparing findings across reports,
- noting instances of consensus or lack of consensus,
- using quantitative data to provide descriptive information for projects or respondents
- integrating qualitative data to help explain findings from quantitative data
- using individuals' quotations from interviews or case studies to capture key insight or commonly held belief.

The final report emphasizes findings that appear across more than one component report, or where several sources (e.g., several interviewees or interviews and focus groups) provided similar observations or findings. Health Canada staff provided direction and supplementary information on an as-needed basis,[8] and

[8]Comments provided on a draft final report have been incorporated into this report as provided, and without citation unless provided by Health Canada staff.

findings were evaluated by considering reports from peer reviewers on the draft qualitative and quantitative data and analysis.

The final report draws on the content of the component evaluation reports within their limitations as described in Section 2.4.

The report is organized into four sections. This first section provides the background and description of the CPNP. Section 2 describes the evaluation and its methodologies. Section 3 presents the evaluation findings and responds to each evaluation framework question. Section 4 provides recommendations.

1.1 The Canada Prenatal Nutrition Program

1.1.1 Background and rationale

Population health recognizes a range of determinants of health.

Since the early 1990s, Health Canada has adopted a population health approach, which recognizes that determinants of health, or factors that influence health, extend beyond the mandate of Health Canada and include the effects of social and economic conditions. It was recognized that population health programs should address the range of conditions affecting health, including gender, education, culture, socio-economic status, income, and available social support. Accordingly, Health Canada tried to initiate programs to preserve or improve the health of the population as a whole, as well as to close gaps and reduce inequality in health among subsets of the population. To do this, programs were often directed toward "at-risk" groups and involved collaboration with partners in order to be able to provide comprehensive support.[9]

Introduced in 1994, the CPNP is rooted in this population health approach.[10] Health Canada's review of prenatal care literature found that comprehensive programs had the most success in

[9] CPNP Document Review Report, pp. 6-7.

[10] The population health approach has widespread support as an effective means of assisting individuals or families "at-risk", and was reinforced by the terms and conditions of the population health funding stream in 1999. This approach, however, is not mandated by the Program, and is not a requirement for funding.

Comprehensive prenatal care and breastfeeding are associated with improved health of children.

terms of pregnancy outcomes for high-risk expectant mothers. These programs included food and nutrition components (supplements, counselling), which were shown to be important in reducing low birth weight. Other important programming includes support for expectant mothers in areas that include education, referral, and counselling on lifestyle issues such as alcohol, substance abuse, smoking, family violence, and stress.[11] Several studies found such comprehensive prenatal care to improve birth outcomes and result in corresponding savings in neonatal care. After birth, breastfeeding has been associated with improved health (lower incidence of illness and disease, improved cognitive development) and reduced health care costs.[12]

It is important to distinguish between the program and funded projects.

At the time the CPNP was introduced, all provinces and territories offered some type of prenatal programming for "at-risk" or "high-risk" women expecting a child, but the extent of support varied among jurisdictions, and programs may or may not have included a nutritional component that provided food supplements. "The CPNP for high risk women... [was intended]...to support comprehensive community-based services, specially designed to build upon existing prenatal health programs across Canada."[13] The program has been structured to do this. The CPNP or "the program" funds individual community projects that deliver the program by providing services to expectant mothers. Projects partner with other governments and local organizations and typically receive funding from several sources in addition to the CPNP.

1.1.2 Program objectives

While the CPNP supports broad and flexible health promotion programming, it has specific goals. Through the CPNP, the federal government funds local communities to develop or enhance programs for pregnant women whose poor health, inadequate nutrition, or social or economic circumstances place

[11] CPNP Document Review Report, CPNP Evaluation Framework, p. 2.

[12] CPNP Prenatal Care: Effectiveness, Cost-Effectiveness and Cost Benefit Analysis Literature Review, p. 3, breastfeeding (a) main findings, CPNP Evaluation Framework.

[13] CPNP Document Review Report, p. 6.

them at particular risk for poor birth outcomes. The projects can continue providing assistance until infants are six months of age, up to a total of 12 months for an individual woman.[14]

The program's target population includes women with low income; pregnant teens; women suffering from violence; women who use alcohol or tobacco; women who engage in substance abuse; women who are Aboriginal;[15] recent immigrants or refugees; and women who are socially or physically isolated or with inadequate access to services.

Program objectives are as follows:

1. "to reduce the incidence of babies born with unhealthy (low or high) birth weights;
2. to improve the health of pregnant women;
3. to promote the initiation and duration of breastfeeding;
4. to increase the accessibility of services for:
   - less adequately served high-density urban and isolated-rural Northern areas;
   - culturally or linguistically hard-to-reach at-risk mothers and infants;
5. to proliferate partnerships, linkages and collaboration in the community in order to increase the recognition and support for the needs of at-risk mothers and infants and to increase the number of effective community resources and programs for them."[16]

As mentioned above, at the local level, the CPNP funds a wide range of projects. Helping to unify these projects are the guiding principles of the CPNP:

CPNP's guiding principles help provide unity to diverse projects.

- "mothers and babies first
- strengthening and supporting families

[14]CPNP Case Study Component Final Report, p. 1; CPNP Terms of Reference, p. 2.

[15]The First Nations and Inuit component of CPNP is mandated to serve women living on-reserve and in most Inuit communities. The Population and Public Health Branch component of CPNP targets Aboriginal women living off-reserve and in some Inuit communities

[16]CPNP Case Study Component Final Report, CPNP Terms of Reference, p. 1.

- equity and accessibility
- partnerships
- community-based
- flexibility

- complementarity
- evaluation."[17]

The FNI component (FNIC) is available to all women in First Nations/Inuit (FNI) communities who are expecting a child or who are of childbearing age.[18] The objectives and guidelines of the FNIC are consistent with those of the off-reserve community component, but are customized to reflect the needs of FNI women. Since 1999, the objectives of the CPNP FNIC have been to:

1. "Improve the adequacy of the diet of prenatal and breastfeeding First Nations and Inuit women;
2. Increase access to nutrition information, services, and resources to eligible First Nations and Inuit women, particularly those at high risk;
3. Increase breastfeeding support, initiation, and duration rates;
4. Increase knowledge and skill building opportunities for those involved in the Program;
5. Increase the number of infants fed age-appropriate foods in the first 12 months."[19]

Mean birth weight is substantially higher among North American aboriginal people than non-aboriginal people. Notably, however, these objectives do not specify a reduction in the *rates* of unhealthy (low or high) birth weights, as do the objectives outlined for the PPHB projects.[20]

[17]CPNP Document Review Report, p. 7.

[18]CPNP Document Review Report, p2.

[19]CPNP Document Review Report, p.1.

[20]The significance of this difference is noted in the CPNP Interview Component Final Report, p.13.

1.1.3 The CPNP in the context of federal health programming

The CPNP has specific objectives; however, its comprehensive nature, recognition of many determinants of health, and focus on partnership and collaboration with government and communities results in a program that is consistent with or complementary to the principles of other federal programs directed to children and families. Program documents note that the CPNP has commonalities with programs such as Aboriginal Head Start; the Aboriginal Diabetes Initiative; Food Safety; Brighter Futures, Building Healthy Communities; the National Children's Agenda; federal strategies on crime prevention, drugs, and disabilities; as well as the National Baby-Friendly Initiatives supported by Health Canada in conjunction with World Health Organization/UNICEF Initiatives.[21]

1.1.4 Management structure[22]

From within the PPHB, the CPNP is managed in conjunction with the provinces/territories through Joint Management Committees (JMCs). These committees are comprised of Health Canada staff, representatives from the provincial/territorial governments (usually from the department of health or social services), local health authorities, and community organizations as appropriate. JMCs are designed to include provinces and territories in deciding how to allocate resources to respond to jurisdictional priorities, and to discuss how to address the complex issues surrounding the program.

From an operational perspective, the CPNP is implemented and overseen through a team that includes federal, regional, and local representatives. Key positions are described in Table 1, below.[23]

[21] CPNP Document Review Report, p. 7.

[22] The management description is taken from the CPNP Document Review Report, pp. 15-16.

[23] Descriptions are taken directly from the CPNP Document Review Report, pp. 10-11, but may include additional information provided by Health Canada evaluation analysts.

Table 1: Key Health Canada CPNP positions	
Position	**Description**
Children's Program Managers	Children's Program Managers are responsible for managing the delivery of community-based programs in the regions. Key areas of responsibility are: program integrity and linkages; policy development; and overseeing management of human and financial resources.
Regional Program Consultants	Regional Program Consultants encourage practices that promote project effectiveness; facilitate information exchange between communities, Health Canada, the Provinces/Territories and other stakeholders as appropriate; maintain an awareness of emerging issues and trends in order to support projects; and administer CPNP through the regional offices.
Project Sponsors	Project Sponsors have the legal responsibility to ensure that the CPNP programs are efficiently carried out and achieve the program objectives. The key functions of a Sponsor are: to ensure that the funded programs are carried out in accordance with the applicable agreements, guidelines and principles; to ensure the expenditure of the funds according to the Contribution Agreement; to ensure that the evaluation of the program is carried out and the results reported to Health Canada; and to provide financial, progress/narrative, and evaluation reports according to the terms of the Contribution Agreement.
The National Office	The National Office supports the development and delivery of CPNP across Canada and maintains the integrity of these programs. This is accomplished by working in partnership with regional program consultants, evaluators and managers of children's programs. Activities primarily involve strategic planning, priority setting, information exchange, networking and articulating program development and evaluation frameworks to stakeholders, Health Canada senior management and other Government of Canada departments.
National Evaluation Team for Children (NETC)	National Evaluation Team for Children (NETC) is a working committee composed of Health Canada evaluation analysts (Evaluation Consultants) from the national and regional offices. The committee complements and supports the national and regional structures of Health Canada's community-based children's programs. NETC's role is to: provide advice and share information with the CPNP Evaluation Working Groups in regard to the ongoing implementation of their evaluations; exchange knowledge on children's issues and evaluation models; undertake technical aspects of planning, implementing and analyzing evaluation tools and analyzing and disseminating evaluation results. Members bring their perspectives to these functions and are responsible for briefing personnel in their respective home office.
Source: Information taken directly from the CPNP Document Review Report.	

In most regions, Program Consultants and Evaluation Consultants report to a Children's Program Manager, who in turn reports to a Regional Director. This position of Regional Director was designed to connect regions to the National Office as well as departments outside of Health Canada, including the FPT Committee for ECD (Early Childhood Development).[24] It is important to note that these consultants and managers are not solely responsible to the CPNP, but are also responsible for the

[24] CPNP Interview Component Final Report, pp. 31-32.

Community Action Program for Children (CAPC) and Aboriginal Head Start (AHS) projects. However, in each region, a Program Consultant is appointed as a CPNP "lead" and provides important liaison with the National Office and other regions (e.g., through working groups).

The FNIHB implements the program at the national, regional and community levels. "At the national level, CPNP activities ...focus on program leadership, coordination, integration, advocacy, and support to the regions and accountability activities." Regions perform similar functions, but support the community projects. They also provide training opportunities, and are able to gather feedback on implementation and delivery directly from local projects. First Nations, Inuit, and FNIHB/territorial government representatives are involved in the FNIC at the regional level.

At the local level, each community which receives project funding completes a standard work plan which demonstrates how the project and its activities are consistent with CPNP principles, objectives, and purposes; contains recommended elements; and targets priority groups. "For most communities, program funding will not cover the cost of full-time staffing and thus, program activities will need to be delivered through a combination of Community Health Representatives, Community Health Nurses, other community workers, or CPNP workers, managers or coordinators funded in part by the CPNP program in partnership with other programs." [25]

The FNIC of the CPNP is managed by a National Steering Committee, comprised of First Nations and Inuit peoples as well as national and regional Health Canada staff. The National Steering Committee guides and directs the "development, implementation, and evaluation of the FNIC of the CPNP and the newly introduced Fetal Alcohol Syndrome and Effects Initiative."[26]

[25] CPNP Document Review Report, pp. 11-12.

[26] CPNP Document Review Report, p. 16.

1.1.5 Resources

In 1994, the program was financed through new funding as well as reallocations within Health Canada; $85 million was assigned to the program over four years.[27] Since then, additional funding has been announced in 1997 ($5.3 million annually)[28] and in 1999 ($75 million over three years) to expand the program to $35 million in 2001/2002 and subsequent years.[29]

Table 2: CPNP funding, millions of dollars

Component	Prior to 1999	Enhancement				Ongoing
		1999/2000	2000/2001	2001/2002	Total enhancement	
Community (PPHB)	$14.0	$4.2	$14.4	$17.9	$36.5	$31.9
Community (FNIHB)	$7.0	$0.8	$7.7	$7.0	$15.5	$14
FAS/FAE (PPHB)	$0.0	$1.2	$2.7	$3.3	$7.2	$3.3
FAS/FAE (FNIHB)	$0.0	$0.7	$1.4	$1.7	$3.8	$1.7
CPSS	$0.9	$3.0	$4.0	$5.0	$12	$5.0

As a result of the 1999 Federal Budget, the current CPNP budget for 2002/2003 allocates over $30 million to the non-reserve portion of the program. Of this, $27 million is distributed by the regions to community projects through grants and contributions (Gs&Cs).[30] Details are provided in Table 3, below.

[27] CPNP Document Review Report, p. 12.

[28] A National Projects Fund of $1.9 million over three years and budget of $1.8 million annually for evaluation were also established (CPNP Document Review Report), p. 12.

[29] In addition, CPNP evaluation resources were increased by 12% to fund the national evaluation activities. The regional evaluation budget of $500,000 for CAPC and CPNP was also increased by 13% to cover additional CPNP evaluation activities (CPNP Document Review Report), p. 13.

[30] http://www.hc-sc.gc.ca/dca-dea/programs-mes/cpnp_goals_e.html

Table 3: CPNP regional allocation, millions of dollars									
	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02	Ongoing
Salary	$0.170	$0.562	$0.813	$0.613	$0.7558	$1.355	$1.705	$1.955	$1.955
Non-salary	$0.335	$0.461	$0.925	$1.1779	$0.7689	$1.249	$1.899	$1.9082	$1.9346
G&C	$2.684	$3.097	$9.560	$12.285	$12.826	$14.875	$23.762	$27.189	$27.189
Total	**$3.2**	**$4.1**	**$11.3**	**$14.1**	**$14.4**	**$17.5**	**$27.4**	**$31.1**	**$31.1**

1.1.6 Project funding

PPHB community component funding is allocated to provinces/territories according to the following criteria: first, each jurisdiction is allocated $150,000 to support at least one program of significant size. Second, additional funding is allocated based on the number of pregnancies likely to be "at risk," which is estimated at 10% of live births.[31]

Health Canada recommends a comprehensive set of services for women at risk.

Funded projects must be coordinated with existing services without duplicating or reducing their scope. The CPNP's National Office outlines guidelines for project application and submission and has provided a universal project funding application. In most provinces/territories, these documents have been adapted to meet the specific priorities of that region. "The National eligibility criteria emphasize the need for projects to be located in at-risk communities, be supportive of a collaborative, partnership-based approach to program delivery and include a strong evaluation component.

The recommended program elements include:

1. prenatal supplements
2. dietary assessment and nutrition counseling on food and healthy eating
3. promotion of breastfeeding
4. involvement of participants in planning and delivery of the program
5. education on food preparation, budgeting

[31] CPNP Document Review Report, p. 14. Note: a different funding formula is applied to the FNIC.

6. preparation for labour and delivery
7. support and counseling on lifestyle issues (stress, tobacco, alcohol consumption)
8. social supports including counseling and education
9. support for sufficient nutritious food through community activities
10. linkages and referral to other community resources

Projects are also eligible to receive some funding for providing transportation and child care support."[32]

The FNIC has slightly different funding guidelines. First, funding is allocated to 100% of FNI births, as they are all considered to be "at-risk".[33] Second, since 1999, the base funding "per community" has been a regional decision, although the amount of funding has been adjusted for the number or proportion of women of child-bearing age (15-44), with an additional 20% allocated to remote communities.[34] The per-capita approach ensures equitable funding. Key informants, however, noted that as a result, some communities receive a very small amount of funding (e.g., $2,000-$4,000).[35]

The FNIC funds are administered by Band Councils, Tribal Councils or other Aboriginal groups, and governed by contribution agreements with Health Canada. The priority areas for the expanded funding from the 1999 enhancement include:

- community funding;
- national/regional coordination;
- support and management; and,
- support and development of strategic projects.

[32]CPNP Document Review Report, p. 18.

[33]It should be noted that projects funded by the PPHB also target Aboriginal women, and several provinces/territories have identified Aboriginal women as a priority target group. However, FNIHB has the mandate to reach women living on-reserve and in most Inuit communities.

[34]CPNP Document Review Report, pp 14-15.

[35]CPNP Interview Component Final Report, p.19.

Notwithstanding the above priority areas, funds must cover all elements of the program including accountability and evaluation.[36]

Typically, projects are sponsored by First Nations Bands, Tribal Councils, provincial/regional First Nations and Inuit organizations, or other community-based organizations or agencies (where delegated by First Nations or Inuit governments), and governments of the Northwest Territories and Nunavut.[37] As mentioned above, a work plan must be prepared that describes the project activities designed to meet community needs. Work plans should:

1. Meet program accountability requirements as developed by the National Steering Committee; (sample activities are described in the [FNIC] program guidelines);
2. Demonstrate strong community support and meet identified community needs;
3. Demonstrate coordination and/or integration with existing and proposed community services;
4. Enhance existing programs without duplicating services already available in the community;
5. Include a planning and implementation process that includes the active participation of the target group and community."[38]

A majority (at least 75%) of community funds for projects should be used for activities related to:

1. "nutrition screening, education, and counselling
2. maternal nourishment
3. breastfeeding promotion, education, and support."[39]

[36]CPNP Document Review Report, pp 14-15.

[37]CPNP Document Review Report, pp 18-19.

[38]CPNP Document Review Report, p. 19.

[39]CPNP Document Review Report, p. 7.

1.1.7 Evolution of the program

The CPNP has evolved since its inception in 1994 in three main ways. First, the early years required time spent to establish awareness, partnerships, and new projects, particularly in under-serviced areas. Second, the program has been expanded with increased funding and movement into more communities. Finally, while the Program has employed both individual, one-to-one and group based approaches with a strong focus on diet and supplementation, there has been a shift to increased use of group-based approaches including social support, skill development and referrals for further assistance and support where necessary. Nonetheless, many aspects of nutrition remain central to CPNP, including nutritional assessments, group food preparation, and prenatal vitamin supplements. Senior managers describe the program as striving now to "find a balance between reducing LBW and building capacity."[40] This type of evolution is a natural outcome of the program's emphasis on flexibility and customization to respond to local and individual needs.[41]

This customization has had an impact on the ability to evaluate the program. The current environment demands robust information on the performance of programs for reporting to the public, Parliament, and central agencies as well as to improve program management and results. The projects funded by the CPNP are unique and distinct, serving women with different needs, providing different mixes of services, and using different methods of delivery. This flexibility and responsiveness make it more difficult to collect data and assess impact across projects.

[40] CPNP Interview Component Final Report, p.17.

[41] Based on information presented in the CPNP Document Review Report, p. 2; CPNP Interview Component Final Report, p. 1.

2.0 Evaluation design

While the CPNP has evolved, the commitment to performance measurement and evaluation activities that has been evident since program inception has remained strong. The evaluation has proceeded through three phases: development, data collection, and conduct of the evaluation. The program headed the development and data collection phases and used the processes they developed for ongoing performance measurement. The Departmental Program Evaluation Division (DPED) led this evaluation with the assistance of an evaluation working group.

2.1 Evaluation foundation

During the early years of the CPNP, the PPHB conducted what could be described as pre-evaluation research. Several reviews of prenatal nutrition programming evaluations were undertaken to inform the development of a National Evaluation Framework. Several forums for stakeholder involvement were also developed. These include the CPNP National Evaluation Working Group, the CPNP Regional Evaluation Working Group, the Health Canada Management Team, and an Expert Group on Baseline Data Collection/Compilation. In addition, four two-day "interactive evaluation workshops" were conducted across the country and attended by local and regional community representatives. The workshops were designed to:

- identify the needs of the evaluation/performance measurement and the challenges likely to be faced;
- identify and discuss indicators for the evaluation/ performance measurement;
- refine evaluation questions;
- address data collection at the national, provincial/territorial and local levels.[42]

[42] CPNP Evaluation Framework, p. 7.

Evaluation design was collaborative, identifying both desired results and potential challenges.

The first phase of evaluation design work involved extensive collaboration and consultation to ensure that the evaluation strategy reflected the program in its community development approach. At the same time, there were stringent performance measurement requirements that were intended to support the assessment of relevance, impact, and cost-effectiveness.[43] Early on, it became evident that an evaluation of the CPNP would face several challenges:

- Projects selected and implemented a range of nutritional and dietary assessment tools.
- Providing "support" is a component of the CPNP but is difficult to define, and there are different types of support.
- "Success" needed to be defined, particularly with respect to how much of a change in birth weight would represent project (or program) success.
- Baseline data was needed for comparison.
- The difficulty in isolating CPNP-attributable outcomes, especially when CPNP funds expand an existing program.
- Linking evaluation activities between PPHB and FNIHB projects (this report focuses on PPHB projects).
- The different levels of capacity of projects to support evaluation (e.g., staffing and technology limitations).
- Reporting burden due to overlapping evaluation requirements (e.g., of other funders).
- The reliance on project staff buy-in and commitment to evaluation.[44]

[43] Assessment of Large Scale Social Programs with Varying Levels of Intervention, Collecting the Evidence: Evaluating the CPNP, p. 3, and throughout report.

[44] CPNP Evaluation Framework, pp. 8-9.

The challenges listed above, along with a reliance on projects for data collection (each with different services, methods, staffing, resources, etc.), clearly indicated to the program early on that an evaluation of the CPNP would be complex.

An evaluation framework was designed to guide this process, mapping out key questions, indicators, and data sources.

2.1.1 Evaluation framework

The evaluation framework was finalized in 1996 and approved by the National Evaluation Working Group. This framework has driven the data collection/performance measurement process overseen by the program and has provided the evaluation questions for the Health Canada evaluation of the CPNP. There are four broad areas of investigation: program relevance, implementation, impacts/success, and cost-effectiveness. Evaluation questions pertaining to each of these areas appear in Table 4, below.[45]

Table 4: Evaluation framework objectives and questions

Evaluation objectives	Evaluation questions
1.0 PROGRAM RELEVANCE	
1.1 To determine the continued need for the CPNP at the Federal level	1. After four years of implementation, do the conditions that led to the creation of the CPNP still exist and justify the continuation of a program at the Federal level dedicated to the issue of prenatal nutrition? 2. Does the CPNP duplicate other Federal programs inside or outside Health Canada? 3. How and to what extent does the CPNP complement or expand upon other prenatal programs addressing the same issue at the provincial, municipal and community levels? 4. Is the CPNP still the appropriate type of intervention? Should the federal government continue to be involved or could equally satisfactory results be delivered by another level of government and/or the private or voluntary sector?
2.0 IMPLEMENTATION PROCESS	
2.1 To determine if the CPNP reached its target groups	1. Has the CPNP reached the intended target groups (including First Nations and Inuit)? If not, why not? 2. What have the participation rates been? 3 Are changes in target groups needed?

[45] CPNP Terms of Reference, pp. 6-8.

Table 4: Evaluation framework objectives and questions	
Evaluation objectives	**Evaluation questions**
2.2 To determine if the CPNP increased accessibility of services	1. Has the CPNP increased the accessibility of services for mothers and babies who are: a) Less adequately served physically (e.g., high density urban areas, isolated rural/northern areas)? b) Less adequately served culturally?
2.3 To determine if the CPNP provided appropriate program management	1. Were appropriate systems or mechanisms established to coordinate, monitor and evaluate Program activities? 2. What were the strengths and weaknesses of the approach used for Program implementation?
2.4 To determine the nature of partnerships which were developed by CPNP projects	1. What evidence is there that the projects have developed partnerships and cooperative relationships with other organizations (public or private), groups or individuals within their community? 2. Did CPNP increase the support by the community regarding the needs, interests and rights of at-risk mothers and infants?
3.0 PROGRAM SUCCESS	
3.1 To determine the impact of the CPNP on pregnancy outcomes	1. What evidence is there that the projects supported by the CPNP have had the desired effect on pregnancy outcomes, including: a) Birth weight; b) Infant health; c) Maternal health; d) Breastfeeding?
3.2 To determine the effectiveness of various types of CPNP projects and activities	1. Which types of projects and project activities were more effective in improving pregnancy outcomes? 2. What lessons can be learned from these projects?
4.0 COST EFFECTIVENESS	
4.1 To determine if the CPNP is cost effective	1. What would the costs have been without the CPNP? 2. Are there other cost-effective ways of delivering the local programs/projects?

2.2 Data collection and performance measurement [46]

The second phase centred around quantitative data collection. Since 1996, an elaborate data collection process has been in place and overseen by the program. Projects provide data on an annual basis using an Individual Project Questionnaire (IPQ) and an Individual Client Questionnaire (ICQ), which are completed throughout the participant's time in the program. Data collected from these two instruments are entered into a national evaluation

[46] Information on the data collection process is based on Empowerment Goes Large Scale: The Canada Prenatal Nutrition Experience, the CPNP Evaluation Overview, and Assessment of Large Scale Social Programs with Varying Levels of Intervention - Collecting the Evidence: Evaluating the CPNP and CPNP staff.

database, which was intended to form the basis for a significant portion of the CPNP evaluation. The ICQ and IPQ gather information about a significant number of indicators and can be extensive in nature (up to 600 variables). The ICQ is comprised of 38 mandatory and optional questions that allow for a degree of customization by region. The ICQ has undergone some revision in an attempt to simplify the questionnaire and improve response rates. To this end, the "ICQ2" was launched in 2001. IPQ and ICQ data are identified as data sources for every evaluation issue. The program also instituted the use of a "Welcome Card" in 2001 in an attempt to get timely demographic information on CPNP participants.

Data collection was designed as a "census." That is, every project was to complete an IPQ annually, and every participant was to complete an ICQ. While most projects did provide an IPQ, they did not complete an ICQ for every participant.[47]

The Individual Project Questionnaire (IPQ) and Individual Client Questionnaire (ICQ) are the main quantitative data collection tools.

Data collection relied heavily on local projects and was assisted by a consultant that was hired by the CPNP national office. As mentioned above, a wide range of organizations were awarded funding, and the willingness and ability of these organizations to participate in data collection activities varied dramatically. Furthermore, the program approved several exemptions to the ICQ as recommended by the respective Joint Management Committees (JMCs). Quebec did not employ the ICQs because of the unique context in which the program is delivered (through the *Centres Locaux de Services Communautaires*) and because of numerous other funders collecting prenatal nutrition data. Due to reporting burden, projects in British Columbia delivered through the provincial Pregnancy Outreach Program (POP) were also exempted from submitting ICQs. Six projects in Ontario and Alberta attempted to provide an ICQ for only a sample of program participants, due to the large size (in two of the cases) and reporting burden.

In recognition of these challenges, the CPNP data collection process was designed to try to maximize project cooperation and

[47] The effect of non-response to ICQs is described in Section 2.4.

support. Without collaboration with projects, it would be impossible to determine whether or not the program has met its objectives. An extensive, iterative process of designing data collection tools was used, with ongoing feedback from project staff during and after the "interactive evaluation workshops." In addition, the mandatory IPQs and mandatory ICQ questions were kept short to provide provinces/territories and local projects the opportunity to add questions to the ICQ. This created a customized set of questions for each of several hundred projects, while ensuring that mandatory questions were always asked and that supplementary questions were identical for each project that elected to ask them. After consultative design and testing stages, the program assisted by an external consultant, supplied the customized surveys, processed completed forms, and followed up with projects to collect missing data wherever possible.

Once finalized, projects received ongoing training and support though a series of training sessions, a detailed guidebook outlining proper use of IPQs and ICQs, and a "help line" for any other questions pertaining to data collection.

2.2.1 The baseline study data collection

At the same time, baseline comparison study was under way and involved "a special national survey of pregnancy outcomes among women having the same socio-economic profiles (socio-economic status, education level, demographic characteristics, and geographic regions) as CPNP target groups but not having been exposed to the CPNP programs..."[48]

This survey was designed to provide a comparison group to CPNP participants, which would be analyzed against participant data in the Baseline Comparison Report. The baseline study comparison's primary objectives were to:

- interview women who would be candidates for a CPNP-type program (i.e., "at-risk") but live in communities where services are not available, to collect information on risk

[48] CPNP Terms of Reference, p. 9.

factors (e.g., demographics, health information, smoking) and pregnancy outcomes (breastfeeding initiation and low birth weight)

- calculate rates of poor pregnancy outcomes among these women for comparison against women who participated in a CPNP project.

A secondary objective was to examine poor pregnancy outcomes as a function of prenatal risk factors.

Analysis included descriptive statistics comparing CPNP and baseline participants, as well as logistic regressions comparing breastfeeding initiation and low birth weight rates between the two groups. This same analysis was also performed for sub-groups (youth, low income, Aboriginal, immigrant/refugee, substance users) when sample sizes were sufficient. Descriptive statistics comparing CPNP prenatal entrants to post-natal entrants were also produced.

The Baseline Study was to have been treated as a component of this evaluation per the evaluation terms of reference but it was completed much later in the evaluation time line than expected. Given its late availability, the evaluation team did not have sufficient time to comprehensively review the Baseline Study a decision was made by the evaluation lead to not integrate it into this evaluation report.

2.3 Health Canada evaluation of the CPNP

By 2001, Terms of Reference had been compiled for the evaluation of the CPNP, initiating the third phase of the evaluation. Since then, the evaluation has been refined to include a methodology consisting of six main components:

- Document review
- Interviews
- Literature review
- Intermediate outcomes analysis
- Economic evaluation

- Case studies.[49]

A brief description of each of these methodologies is provided below.[50] The detailed methodologies may be found in the technical reports for each of the evaluation components. The findings presented in the component evaluation reports form the basis for the remainder of this report.

CPNP Document Review Report

The purpose of the review was to provide background information on the program, identify information gaps and issues for further research, and provide a line of evidence responding to program implementation and management. The document review consisted of a comprehensive review of program materials, publications, and reports. Documents for inclusion were identified with the assistance of the Evaluation Working Group and focused on information available at the National Office, although some regional information was also reviewed. Work was led by DPED and supported by two consultants.

CPNP Interview Component Final Report

The interview component was designed to examine: program rationale, program operations and management, successful components or activities, and alternatives to the current delivery.[51] An interview guide was developed based on the evaluation framework. It also addressed issues raised in the document review.

Interviewees were selected in conjunction with the Evaluation Working Group and included managers or staff from both the PPHB and the FNIHB, as well as other stakeholders. Specifically, 37 interviews were conducted between May 2002 and September 2002, as outlined in Table 5, below.

[49] This list is based on the CPNP Terms of Reference. We have, however, re-categorized the Document Review and Interviews as separate components and do not identify "Secondary Data Analysis" as a separate methodological component since it did not result in an evaluation report, pp. 9-11.

[50] Descriptions are based on discussions in each of the component reports, as well as the CPNP Terms of Reference.

[51] CPNP Interview Component Final Report, p. 2.

Table 5: Interviews conducted for CPNP program evaluation									
Region →	**NHQ**	**ATL**	**QC**	**ON**	**MB/SK**	**AB**	**BC**	**NWT**	**Total**
JMCs (or Regional Advisory Committees)		2		1		2		1	6
Provincial/Territorial leads	2	2		2	2		2		10
Evaluation consultants		1	1	1		1	1		5
Children's managers			1	1					2
Departmental senior managers	5								5
Provincial programs			1	1	1		1		4
Other stakeholders	3								3
Subject experts		1				1			2
Total	10	6	3	6	3	4	4	1	37
Source: CPNP Interview Component Final Report.									

Interviews were conducted by DPED staff and a contractor using interview guides that were developed with the assistance of the interview component working group. The interview guides were pretested and subsequently tailored to the various groups on interviewees. Information was validated by returning interview notes to the interviewees for alteration as necessary. Thematic analysis was conducted of the interview notes and the emerging themes explored across all interviews to reflect the opinions of the majority of interviewees. The final interview report was reviewed by the interview component working group.

Literature review

The purpose of the literature review was to review the effectiveness and cost-effectiveness of other prenatal nutrition programs, in order to provide context for a cost analysis of the CPNP, and to provide estimates of the costs savings that could be associated with potential program impacts.

Methods of identification of appropriate literature included Internet searches, electronic databases such as the Ovid Technologies Database (University of Ottawa), MEDLINE, and journals available in electronic format via Health Canada's Departmental Library. References in articles and books from these sources provided other sources of information.

The literature review is comprised of two key papers that are brought together in a summary document. The evaluation team prepared a literature review entitled, "CPNP Prenatal Care: Effectiveness, Cost-Effectiveness, and Cost Benefit Analysis" and the program had commissioned a paper entitled, "Economic Evaluation of CPNP 2001." The literature review developed by the evaluation team and the front end of the program commissioned paper were synthesized in the summary document.

Effectiveness Quantitative Analysis — Intermediate Outcomes

Program data were collected by the IPQs and ICQs; the methodology is described in Section 2.2, above. Data collected from 1997/98 to 2000/01 were analyzed by DPED and an analyst from the Division of Childhood and Adolescence with the assistance of an external consultant.

Analysis of IPQs uses projects as the unit of analysis. Descriptive statistics are provided across projects, which are categorized by size of caseload (small, medium, large) and location (urban/rural). Because nearly half of projects are located in Quebec, which delivers the program in a unique and consistent manner through *Centres Locaux de Services Communautaires*, analysis also examines projects delivered in Quebec compared to all other regions.

The ICQ analysis uses participant enrolment as the unit of analysis. If the same individual enrols in a project more than once, she is treated as a separate enrollment for each pregnancy. Descriptive statistics are provided for all enrolments, as well as for certain sub-groups. ICQ analysis excludes data from 1996-1997 (the first year of ICQ implementation) and 2001-2002 because data was not complete at the time of analysis.

IPQ/ICQ data have also resulted in numerous other reports (national and regional summary reports, a study of the impact of service intensity on LBW, preliminary cost-benefit analysis, etc.) not included as part of this evaluation.

These data are the only quantitative source of information on program performance and the only means of attempting to statistically assess program effectiveness and impact. Data limitations are described in Section 2.4, and the extent to which these data support conclusions about the program is discussed in the evaluation findings (Section 3).

Economic Evaluation of the CPNP (2003)

The economic evaluation was undertaken by DPED. This report attempts to isolate program impact on birth weight, breastfeeding, and maternal outcomes. This component of the evaluation undertook exploratory work using more sophisticated statistical techniques to isolate program impact. These techniques included Cox regression methods to estimate program effect on birth weight and logistic regression to estimate the program effect on breastfeeding initiation. Because only aggregate cost data could be provided by the program, this report provided a very rudimentary cost-effectiveness analysis.

Case studies

Six case studies were conducted by an external consultant. Four sites were funded by the PPHB, one by FNIHB, and one received joint funding from both branches. Case studies were included as part of the evaluation in order to gather qualitative data to complement and enhance the quantitative data gathered through other lines of evidence. Case studies were designed to examine in detail projects' implementation, management, and place in the community. This provided a good understanding of the different types of services, delivery methods, partnerships, and clients. In addition, qualitative data on accessibility issues, partnerships, and project outcomes were gathered, and lessons learned identified. To guide this work, a customized evaluation framework for the case study component was developed by an external consultant, in close collaboration with Health Canada.

The case study selection employed a nomination process, with final selection undertaken by the Evaluation Working Group (the six case studies were selected from over 900 possible CPNP-funded sites). The case study methodology included an extensive document review for each site; a total of 97 in-depth interviews with project staff, community partners, and other stakeholders; and two focus groups at each site — one each of current and past participants. A total of 93 project participants participated in focus groups.

2.4 Limitations of the evaluation[52]

There are significant limitations in the extent to which this evaluation can respond to the issues and questions identified in the evaluation framework. This evaluation was designed with both qualitative and quantitative components, with expectations that the data from the IPQs and ICQs could provide estimates of program effects, cost-effectiveness, and causal relationships pertaining to health outcomes. These data were earmarked as sources of information for nearly every evaluation question and are the only means of quantitatively or statistically determining whether or not program objectives have been met.

However, issues with representativeness, reliability and bias of these data, as well as methodological issues identified by peer reviewers, have limited confidence in evaluation findings and generalizability of the conclusions. As such, other qualitative lines of evidence (interviews, case studies) have become more significant to the evaluation. These methods, however, were not intended to carry the evaluation and, as such, have their own limitations. All limitations described below should be considered when findings from various lines of evidence are cited in this report.

Interviews and case studies

The participants in both interviews and case studies (interviews with key informants and focus groups with participants), as well as case study sites, were chosen by the evaluation working group, program or project staff. This can result in bias in favour of the program or project. The interview component is also limited by the small number of interviews (37). A variety of different stakeholders was represented, so only a very few of each type were interviewed. Interview responses were not systematically validated by further research, so some information was, in effect, "single source."

[52] Limitations are based on descriptions in corresponding component evaluation reports.

Case studies employed a thorough methodology (document review, 93 interviews, and 12 focus groups); however, findings are qualitative and cannot be generalized. In addition, women who fall within the target population but do not attend CPNP, exit early, or participate in a limited manner were not included in focus groups.

Document review and literature review

The document review has national scope, but the Evaluation Working Group decided to focus principally on documents housed at the National Office, rather than the regions. The literature review was limited to documents and publications that were easily accessible, and were accepted without independent assessment of research methodology. The literature review also includes research on some programs that are less comparable to the CPNP than others, as there was little directly comparable literature.

Quantitative data and analysis

IPQ and ICQ data form the basis for the baseline study component, the effectiveness quantitative analysis (aspects of program impact and success other than health outcomes), and the economic analysis of the CPNP (health outcome and cost analyses). These data are limited by three main concerns:

- **Data representativeness** — The largest threat to representativeness is non-response. IPQs have coverage rates over 90%, and their representativeness is not a serious issue. ICQs, however, have coverage rates estimated to be between 65% and 75%, excluding projects in Quebec and BC that are exempt from ICQs. The exemptions provided to Quebec and BC reduce ICQ coverage to about 35%.[53] Bias could be introduced if ICQ respondents differ from non-respondents. If this is the case, findings are only valid for respondents and cannot be generalized to the entire CPNP population. While at

[53] Based on calculations provided by Health Canada evaluation analysts.

least some of the non-response is attributed to administrative factors (e.g., project sampling rather than census, staff turnover, etc.), which may not always create bias, the potential for bias still exists.

- **Data reliability** — There are significant differences between the number of participants reported on IPQs submitted by individual projects, and the number of ICQs submitted by these same projects. This calls into question the accuracy (reliability) of the data. Recent preliminary research into this problem suggests that the ICQ is the more reliable source of data. Nonetheless, self-report data is prone to error, and both IPQ/ICQ data have appeared to be incorrect in some case study sites. The extent of the problem cannot be determined.

- **Potential bias** — There are three main sources of potential bias in the IPQ/ICQ dataset:

  - Selection bias occurs when a sample does not represent the population. Non-response to the ICQ has been discussed above. In addition, however, self-selection bias is a concern because women who enter the program may be different from those who are in the target group but do not enrol. For example, women who enrol may be more health conscious (and therefore could positively bias program impacts on the "true" target group) or may be most in need of services (and therefore could negatively bias program impacts on the "true" target group). Similarly, women who drop out of the program or enrol as post-natal participants contribute ICQ data but may be significantly different from other participants.

  - Information bias is a general term that is closely related to reliability. Measurement errors (including non-random non-response) in terms of interventions (services), risk factors, or outcomes can bias results.

  - Other sources of bias include confounding bias, which is a common problem faced when determining program

impact. The relationship between interventions and outcomes will be biased if one or more factors are associated with interventions and, independent of interventions, associated with outcomes. For example, age could be related both to program participation and birth weight. Similarly, if program selection (e.g., attendance, types of services) is related with outcome, "susceptibility bias" will occur.

Analysis is also limited by the lack of an ideal comparison group.

Each limitation described above could be typical of social science research where compliance with data collection protocols is voluntary, resulting in variable quality and quantity of the data across projects. There is lack of consensus as to the extent of this problem. Given the limitations of the data, thorough understanding of the data collection instruments, the data collection and verification process, and the nuances of the data itself are vital to producing quality analysis. Effective collaboration between data managers and data analysts as well as clear documentation of the database (a data dictionary, codebook, narratives, etc.) will help to overcome challenges for the quantitative data analysis.[54]

These limitations should be borne in mind when reviewing quantitative data summaries presented in the remainder of this report.

[54]This conclusion was reached after a review of quantitative analysis and peer/expert review, and was confirmed in the latest version of Effectiveness Quantitative Analysis - Intermediate Outcomes, pp. 29-36.

3.0 Evaluation findings

This section summarizes the information pertaining to each evaluation issue and question.

3.1 Ongoing relevance

This section reviews the extent to which factors that contributed to the creation and development of the CPNP still exist, specifically, it reviews the extent to which poor pregnancy outcomes occur in Canada, the extent to which risk factors are still prevalent among certain groups, and evidence of the value of comprehensive prenatal programming. In addition, the contributions of federal involvement in prenatal programming are presented.

3.1.1 Infant health

Prior to the inception of the CPNP, Canada's low birth weight rates were higher than in several comparable European countries. Rates also differed among provinces/territories and groups, especially those living in poverty or those of Aboriginal or Inuit heritage (who are also at greater risk of unhealthy high birth weight). The most recent statistics available confirm that birth weight, the most widely used measure of infant health, continues to be an issue in Canada. A recent Health Canada report observed that:

> "Low birth weight is an indicator of the general health of newborns and a key determinant of infant survival, health and development. Infants with a low birth weight are at greater risk of dying during the first year of life and, if they survive, have a higher incidence of disability and disease. Mothers in poor health, with unhealthy lifestyles or living in difficult economic circumstances are at greater risk of giving birth to an infant of low birth weight."[55]

[55] Healthy Canadians A Federal Report on Comparable Health Indicators 2002. Available at http://www.hc-sc.gc.ca/iacb-dgiac/arad-draa/english/accountability/indicators.html#high

Infants in Canada continue to suffer from unhealthy (low or high) birth weights.

While rates of low birth weight declined through the 1970s and 1980s, they have remained more stable over the 1990s. In 1995, Canada's rate of LBW (5.5%) remained higher than that of several European countries (Finland, Sweden, Iceland, Denmark, Norway, and Switzerland).[56] By 1999, the Canadian LBW rate was 5.6%, and the First Nations rate was 6.0%.[57] There are several well-established risk factors associated with LBW, but there is a lack of comparable data or statistics for particular vulnerable populations.

High birth weights also remain a concern. High birth weight (HBW) babies are at higher risk of complications during delivery, and have higher rates of illness and death. Overall, from 1992-1996, more than 12% of births were over 4000g (one definition of HBW), and in 1999, 22% of First Nations births were over 4,000g.[58]

The differences in the distribution of poor pregnancy unhealthy birth weight among provinces/territories, age groups, demographic and cultural background also remain.[59]

3.1.2 The CPNP's comprehensive programming

There is broad consensus in the literature that LBW is caused by either a short gestation period or slower than average growth (intrauterine growth retardation (IUGR)). These conditions are associated with many risk factors, such as socio-economic status, age, culture, access to services, smoking and substance abuse, and maternal health, weight, and nutritional intake.[60] There appears to be overall support for comprehensive prenatal programming as

[56]Statistical Report on the Health of Canadians, Statistics Canada available at http://www.statcan.ca/english/freepub/82-570-XIE/free.htm

[57]Healthy Canadians A Federal Report on Comparable Health Indicators 2002. Available at http://www.hc-sc.gc.ca/iacb-dgiac/arad-draa/english/accountability/indicators.html#high

[58]Health Canada Statistical Profile. Available at http://www.hc-sc.gc.ca/fnihb/sppa/hia/publications/statistical_profile.pdf

[59]Statistics are generally available from Health Canada, Statistics Canada, National Council of Welfare, and Provincial Vital Statistics departments.

[60]CPNP Prenatal Care: Effectiveness, Cost-Effectiveness and Cost-Benefit Analysis Literature Review, p. 1; CPNP Economic Evaluation of the CPNP, p. 4; Literature Review Summary, pp. 3-5.

the preferred approach; however, not all studies find these types of programs to have a discernible effect on LBW.

One group of studies included as part of the literature review found no association between prenatal programming or support and pregnancy outcomes and tended to highlight the lack of understanding and consensus on the underlying causes of LBW (through premature delivery or IUGR) and therefore on appropriate methods of prevention.

The literature validates comprehensive prenatal care, however there is a lack of consensus as to whether it is likely to produce measurable outcomes.

Nonetheless, a substantial group of other studies has found that comprehensive programming with nutritional components has the potential to increase average birth weights and reduce the incidence of low birth weight. Programs such as the Montreal Dietary Dispensary, The Higgins Nutrition Intervention Program, and the United States' Special Supplementals Nutrition Program for Women, Infants, and Children (WIC) have been studied extensively, and differences between program and control groups were often (but not always) positive and statistically significant. In addition, other studies indicate that psychological support or counselling are associated with reduced incidence of LBW and preterm birth.

In addition, even "the majority of the studies that have not found prenatal care programs or prenatal care in general effective [or cost-effective], have not tried to challenge the underlying values of such programs, but rather their effectiveness in reducing the incidence of low birth weight births. This is important because...much of the benefit to mothers who enroll in the CPNP would be in areas such as quality of life, amelioration of social isolation, and parenting skills, which are hard to express in dollars."[61]

The literature has clearly acknowledged the potential psycho-social value of comprehensive prenatal programing to mothers, and program data confirm that the CPNP is providing comprehensive services to women with the risk factors associated with poor pregnancy outcomes (see Sections 3.2.1 and 3.2.2). The

[61] Economic Evaluation of the CPNP (2001), p.19.

literature also demonstrates that there is an ongoing debate about the effectiveness of CPNP-like programs as a way to improve birth weight, and experts caution that while the CPNP is addressing known risk factors, this may not produce *measurable impacts* on birth weight because birth weight measures are too aggregate and because interventions take place amid complex relationships between risk factors, the medical community, technology, and birth outcomes (see Section 3.3).

3.1.3 Continuing need

In addition to the improvement of unhealthy birth weight, the CPNP has four other objectives (improved maternal health, increased rates of breastfeeding, increased accessibility, and proliferation of partnerships). Interviews, case studies, and program data indicate that at-risk pregnant women continue to need assistance to gain access to services, combat risk factors, improve their health, and receive information on and assistance with breastfeeding. The women enrolled in the program exhibit targeted risk factors, and demand exceeds capacity in 45 projects (16%) overall.[62] The interview report summarizes: "[T]he conditions that led to its [CPNP] creation still exist and are likely to continue to do so, particularly in these times of rapid social change, increasing levels of poverty among single parent families and reductions in the social safety net."[63]

In order to reach all women in need, linkages and partnerships need to continue to be developed within communities. "The overall goal of a population health approach is to maintain and improve the health of the entire population and to reduce inequalities in health between population groups. As noted in the Auditor General's report (2001, Ch.9:), this approach has an expanded view of the factors influencing health and takes into consideration the effects of conditions in the social and economic environment beyond the health care system. Hence it was recognized that population health programs would have to encompass all of the determinants of health, many of which are

[62] Effectiveness Quantitative Analysis - Intermediate Outcomes, p. 17.

[63] CPNP Interview Component Final Report, p. 63.

outside Health Canada's mandate...forging the necessary alliances to situate CPNP within a broader network of relationships that are required to achieve this end."[64]

3.1.4 Overlap, duplication, and collaboration

The CPNP is designed to encourage partnerships and linkages within communities.

The CPNP evaluation does not identify areas of overlap at the federal, provincial, or territorial level. As described in the document review, "the CPNP operates under previously existing protocol agreements signed at the ministerial level with the provinces and territories....The intent of the protocols is to complement — and not duplicate or reduce — the responsibilities of other programs, regardless of their jurisdiction."[65]

The Program is intended to operate in a coordinated manner with other existing community-based services, but not to duplicate other programs or services which may be available through community health workers, health centres, nurses, physicians or other community services. Implementation of CPNP projects requires project sponsors and/or managers to seek out and establish linkages with other programs related to prenatal and infant health, plus others that address the broader determinants of maternal and child health."[66]

CPNP programming provides a "unique" approach to service delivery, and augments universal basic prenatal care and existing community prenatal programming.

Given the collaborative nature of the program, the specific relationship of the CPNP with other programs and services is different in each community. The evaluation has not been able to capture these relationships for all projects. For example, on the IPQ, nearly all projects reported offering unique services, while at the same time, a majority also reported that other organizations

[64] CPNP Interview Component Final Report, pp. 64-65.

[65] CPNP Document Review Report, p. 15.

[66] CPNP Document Review Report, p. 17.

offer similar services[67]. However, this does not necessarily indicate overlap or duplication and is expected as a result of close integration with other programs. CPNP projects tend to be unique in their target group (women at risk rather than all women), comprehensive approach, and customization (e.g., assistance with transportation and child care, incorporation of culture, and peer involvement).[68] Case studies provide examples: in case study sites, key informants and staff indicated that basic prenatal services were available and most communities had several organizations offering parenting support, food and clothing banks or vouchers, and breastfeeding support. Nonetheless, in these sites, the CPNP projects were described as an integral part in the continuum of care, offering "programming that would not otherwise be available in their communities."[69] Case Study site key informants believe that the close relationship of some projects with existing organizations and services does not mean that the CPNP duplicates other programs, rather, the CPNP extends their reach.

3.1.5 Federal involvement

Federal involvement in prenatal care is highly valued by key informants.

The CPNP demonstrates the federal government's commitment to supporting prenatal services for at-risk women across the country. Key informants believe that the federal government's involvement in this area should remain for two important reasons. First, federal financial support, both through the CPNP and CAPC, is vital. Key informants reported that they believed a majority of projects in (their) region would not be able to operate without the infrastructure and direct support made available through the CAPC family resource centres[70] and that federal funding reductions would result in diminished capacity.[71] In addition to loss of service, key informants believe that without federal support, programming may not feel as "permanent," and it

[67]Note that these results may also indicate misinterpretation of the question.

[68]Based on comments cited throughout the CPNP Document Review Report and CPNP Case Study Component Final Report.

[69]CPNP Case Study Component Final Report, p. 21.

[70]CPNP Document Review Report, p. 21.

[71]CPNP Interview Component Final Report, 61.

may be more difficult to fund the flexible, customized approach needed to undertake the "in-depth outreach" required for the most vulnerable women.[72] Second, key informants described the federal government as an appropriate forum for information sharing and learning across the country, and described evaluation and knowledge development as a valuable federal contribution.

3.2 Implementation

This section describes findings pertaining to the implementation of the CPNP. Program data,[73] key informant interviews, and case studies provide information about the extent to which: target groups have been reached; accessibility has been improved; partnerships and linkages have been formed; and the program has been successfully managed.

3.2.1 Target groups

As described above, the CPNP target group includes women with a variety of socio-economic and lifestyle risk factors. According to program data, the CPNP has successfully reached these groups.

Enrolment and penetration rates

Nearly 300 PPHB projects served 25,000 women in 2000/01

IPQ data indicate that there were 283 projects in 2000-2001, serving an estimated 25,000 women through the PPHB. The vast majority (91%) of these program participants who submitted an ICQ were prenatal entrants, entering the program 19.7 weeks into their pregnancy, on average. The typical ICQ respondent stayed in the program for about 32 weeks. During this time, clients tend to have about 13 contacts, although about one-fourth have up to six contacts, and another fourth have more than 25.

It is not possible to calculate participation rates per se because the number of women who are part of the target population but do not participate in CPNP programming is not known. Rather,

[72] Ibid., 61.

[73] The remainder of this report incorporates findings from IPQ and ICQ data. However, data are subject to the limitations described earlier in this document and should be interpreted with caution.

CPNP IPQ data was combined with the Canada Community Health Survey (CCHS) data to calculate a penetration rate. Overall, 10% of pregnancies are estimated to be at risk.[74] The program reaches 7% of all pregnant women and nearly 60% of low-income women.[75] See Table 6 below.

Table 6: CPNP penetration by province/territory, 1997-1998 to 2000-2001

Province	CCHS - number of births	IPQ - number of participants (estimated)	Penetration rate
BC	184,530	14,652	8%
Alberta	164,216	12,389	8%
Saskatchewan	51,691	3,264	6%
Manitoba	54,399	3,718	7%
Ontario	609,697	22,500	4%
Quebec	345,291	45,271	13%
New Brunswick	34,857	1,160	3%
Nova Scotia	42,889	1,574	4%
PEI	7,403	1,164	16%
Newfoundland	25,135	1,433	6%
Yukon	1,624	354	22%
NWT/Nunavut	6,156	846	14%
All	1,527,888	108,324	7%

Notes: CCHS 2000-2001: The survey identified women who gave birth to a child in the last 5 years. IPQs 1997-1998 to 2000-2001: Number of women who enrolled in CPNP during the 4 years for which IPQs are available, multiplied by 5/4 to estimate what the enrolment was over approximately a 5-year period. Recall that only PPHB projects are represented. FNIHB delivers on-reserve projects.
Source: Effectiveness Quantitative Analysis - Intermediate Outcomes.

Targeted risk factors

As shown in Table 7, below, available program data indicate that the geographical targeting approach has resulted in nearly all participant respondents over the past five years having consistently reported at least one targeted risk factor.

[74] For the FNIC, 100% of pregnancies are considered at risk for the purposes of funding.

[75] Source: CPNP Effectiveness Quantitativeness Analysis-Intermediate Outcomes, p. 10. Note that calculations are approximate and may be slightly optimistic as IPQ data reports on pregnancies, and the CCHS refers to women who successfully gave birth. This information does not reflect on-reserve FNIHB projects.

Combining ICQ and CCHS data from 2000-2001 shows that, compared to an average woman who reported a birth, CPNP respondents were:

- eight times more likely to live in a low-income household
- five times more likely to be Aboriginal
- three times more likely to be teenagers or at least 40 years of age
- three times more likely to be a single parent (single or divorced).[76]

Table 7: CPNP respondent characteristics

Risk factor	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001
	n=2,205	n=5,478	n=6,402	n=7,705	n=7,528
Household income <$1,300/month	**78%**	**78%**	**76%**	**73%**	**69%**
Any demographic risk	**81%**	**81%**	**80%**	**79%**	**80%**
Teenager/40+	40%	39%	37%	33%	30%
Single parent	46%	49%	47%	45%	42%
Less than grade 10 education	23%	23%	21%	21%	19%
Aboriginal status*	26%	22%	20%	20%	22%
Immigrated in the last 5 years	6%	8%	11%	14%	17%
Any lifestyle risk	**62%**	**61%**	**57%**	**50%**	**50%**
Cigarette use	48%	47%	44%	39%	39%
Alcohol use	18%	17%	14%	12%	12%
Drug use	10%	9%	8%	8%	8%
Physical or mental abuse	6%	5%	4%	5%	4%
Health problems with current pregnancy	**41%**	**36%**	**39%**	**43%**	**44%**
Health problems with previous pregnancy	**32%**	**33%**	**36%**	**30%**	**34%**
Low income OR another risk factor	**99%**	**99%**	**99%**	**99%**	**99%**
Low income AND another risk factor	**75%**	**75%**	**74%**	**71%**	**67%**

Source: ICQ. Data are subject to non-response, and do not include QC or BC. Effectiveness Quantitative Analysis - Intermediate Outcomes.
* This table refers to Aboriginal women served by the PPHB component of CPNP.

Although statistics indicate that targeting has been successful, program staff reported that challenges remain. For example, they believe that some high-risk women are more difficult to reach and

[76] Effectiveness Quantitativeness Analysis - Intermediate Outcomes, p. 11.

more likely to discontinue the program before completion.[77] As a result, there are still women who cannot or will not access services (See Section 3.2.2).[78]

CPNP communities

The main way in which the program targets participants is by strategically locating projects in communities that are likely to have women with risk factors (e.g., immigrant communities, lower-income neighbourhoods, etc.). Women are then expected to "self-select" into or out of the program. This approach, however, has created some confusion about whether or not projects should be "universally accessible." At the program level, the CPNP targets women who are less likely to be accessing other prenatal services, filling a perceived gap in the continuum of care, which is consistent with universality. At the project level, however, there was disagreement about whether the program should deny services to women who do not fit the profile of a target group. While most key informants believe that women who are not at risk quickly drop out of the program, "many projects find that targeting vulnerable populations is restrictive and unrealistic...The concepts of universality and targeting, while not directly in conflict, can result in challenging implications for project structure and delivery."[79]

Changes to target groups

Target groups could be expanded to include fathers and/or participants' partners in the program.

The CPNP has clearly defined target groups, but projects are also customized to meet local needs. As a result, the location of projects, as well as demographic, social, economic, and policy changes at the national, regional, and local levels can affect the target group. An influx of immigration, a change to provincial income assistance policy, or a local economic downturn affect not only the numbers of women in the target groups, but the specific services they require. For example, between 1997/98 and 2000/01, ICQ data show an increase in recent immigrants (8% to

[77] IPQ and ICQ data indicate that attrition varies most widely across provinces/territories.

[78] CPNP Interview Component Final Report, pp. 48-51.

[79] CPNP Document Review Report, p. 9.

17%), a decline in smokers (47% to 39%), a decline in teen mothers (39% to 30%), a decline in women who report experiencing physical/mental abuse (17% to 12%), and a decline in women with incomes under $1,300 per month (78% to 69%). These types of changes may be attributable to social and economic change, such as an overall decline in smoking/increased awareness of harmful effects and inflationary pressure on the cost of living and wages.

Regardless of which risk factors are associated with a CPNP participant, however, many project managers believe the involvement of men to be important, particularly as a support for the women that participated in the program. According to the Document Review Report, however, few projects involved fathers or women's male partners.[80] Health Canada evaluators also noted that smoking is a significant and modifiable risk behaviour, which suggests that emphasis should also be placed on smoking reduction or cessation.

Key informants and experts interviewed suggested that in addition to many of the services and supports that are part of CPNP projects, the following are important interventions valued in the medical community: increased use of early obstetrical care, smoking cessation programs, SIDS education, and support for post-partum depression.

3.2.2 Accessibility

One of the objectives of the CPNP is to increase accessibility for women who are in less adequately served communities (rural, isolated, and Northern communities as well as high-density urban areas) or who are culturally or linguistically isolated.

At the program level, the CPNP increases accessibility by introducing or expanding services, and creating linkages and partnerships. Projects are also structured to increase access for individual women by encouraging them to participate in the CPNP and other community resources.

[80] Ibid., pp. 31-32.

The CPNP funds projects that are deliberately located in communities most likely to have women in need, a lack of accessible services, Aboriginal women,[81] or recent immigrants. The FNIC of the CPNP funds projects on-reserve and in many Northern communities, while the PPHB funds projects in other communities. As such, the PPHB is more likely to target high-density urban areas or immigrant communities, as well as other isolated or rural communities. This deliberate positioning makes programming available to potentially under-served women. Projects have been reaching increasing numbers of women in this way. IPQs indicate a 35% increase in enrolment from 1997/98 to 2000/01, although increases in enrolment vary widely among provinces/territories.

Linkages with and referrals to other organizations in a community allow CPNP projects to increase access to a range of services.

Interviewees reported that the CPNP increases access to a range of services in addition to CPNP-funded projects. This is done through partnerships and linkages in the community. Project referrals, co-location, and collaboration with external agencies and/or health professionals increase access to a variety of services to benefit mother and child.[82] "The program is a window into a whole range of services as well as being a service in itself."[83] As projects contribute to spin-offs, community capacity is increased. At the same time, however, interviewees noted that, in many communities, large gaps exist in service areas that are consistent with a population health approach but beyond the reach of the CPNP (e.g., housing, substance abuse treatment).

Resources always limit the reach of a program. In the case of the CPNP, there have been times when "to a large extent allocations of new money were used to provide more stability to and maintenance of existing programs...one of the challenges in this new renewal period may be in the acceptance and realization...that the infusion of new funds will in fact maintain and support existing work. Therefore our collective expectations will need to be consistent with the reality — that this new money

[81] This evaluation does not cover the FNIC of the CPNP, but many off-reserve projects also serve Aboriginal women.

[82] Based on discussions contained in the CPNP Interview Component Final Report and CPNP Case Study Component Final Report.

[83] CPNP Interview Component Final Report, p. 49.

may mean better services and not necessarily increased numbers."[84] Excess demand is seen in 16% of all projects overall; it is estimated that about 800 eligible women were unable to receive services in 2000-2001.[85]

Some women find it difficult or intimidating to attend prenatal programming.

At the individual level, projects are structured to encourage women to attend prenatal programming and help them overcome personal barriers to receiving care. While they are not representative of all women, and not representative of the most isolated women, CPNP program respondents confirmed geography (lack of transportation, weather, and distance) as the most common barrier that prevents them from attending projects more frequently than they do. They also reported that poor health, lack of child care, family conflict, and language barriers can prevent them from attending programs.[86] Some projects are able to address the two main physical barriers by providing transportation or child care services,[87] or by conducting in-home visits, but these barriers have not yet been overcome.

During case studies, shyness, cultural norms, lack of awareness about the program, and fear of being stigmatized (due to a perception that the program is for high-risk or "welfare" mothers), lack of time, and desire for privacy were also identified as barriers to participation. Regardless of the barriers facing women, project staff participating in case studies emphasized the value of incentives (practical benefits such as food and vouchers) and a warm, caring, and respectful environment to attracting and keeping program participants. To bridge language or cultural differences, project staff in three case study project sites reported that program flexibility, methods that incorporate cultural traditions, having an interpreter or multilingual staff, providing

[84] CPNP Document Review Report, p. 21.

[85] Effectiveness Quantitative Analysis - Intermediate Outcomes, Section 6.3.6. Note that these do not represent all women who may be eligible for service but do not receive it.

[86] An Evaluation of the CPNP: Intermediate Outcome Indicators, p. 85.

[87] The program may provide funding to the project to provide transportation or child care services. ICQ data provides that a minority of women receive these services, but not all women require them.

culturally and linguistically appropriate program materials, as well as the use of peers and lay support are effective.[88]

Increasing access at the program level is a function of the number of women who participate in the program, the types of services that projects can provide, and the linkages with other agencies and services. At the individual level, however, many staff and key informants reported that flexibility, customization, and peer support are key. In Quebec the CPNP funds well-established programs are more institutionalized (e.g., not community based) than projects in other jurisdictions, and "women at risk may be reluctant to seek help through institutional services."[89]

Interviews and case studies lead to the conclusion that access has been increased, if for no other reason than services and efforts that would not have taken place without the CPNP. This would indicate that both access and national capacity to serve the CPNP target population have increased. The flexible, customized approach further enables most projects to be inclusive and supportive of women, and to act as a gateway to other programming. Nonetheless, there are still eligible women who are unable to access services, and projects that are more "institutionalized" are likely less flexible in their approach.

3.2.3 Partnerships

One of the objectives of the CPNP is to "to proliferate partnerships, linkages and collaboration in the community in order to increase the recognition and support for the needs of at-risk mothers and infants and to increase the number of effective community resources and programs for them."[90] This section describes the partnerships at the community (project) level. Partnerships are also formed at the program level, between the federal and provincial/territorial governments, as well as between

[88] Based on discussions throughout the CPNP Interview Component Final Report and CPNP Case Study Component Final Report.

[89] CPNP Interview Component Final Report (quote, p. 53) and based on comments contained in CPNP Case Study Component Final Report.

[90] CPNP Terms of Reference, p. 2.

national, regional, and local stakeholders. These types of partnerships are described under Program Management in Section 3.2.4, below.

Based on the IPQ, 71% of projects outside of Quebec reported partnering with other organizations, as did 35% of Quebec's projects. Similarly, 97% of projects outside of Quebec received in-kind contributions (such as food/supplements, materials, space or other goods), whereas 59% of projects in Quebec received in-kind contributions. In addition, most projects received in-kind staffing contributions. Outside of Quebec, 46% of total person-hours were in-kind staff contributions, and 71% of person-hours inside Quebec were from in-kind staff. [91] In Quebec, however, partnerships are formed at the level of the health authority as CPNP programming is provided through the CLSC.

Partnerships are formed with:

- health professionals
- individuals
- businesses
- non-profit/not-for-profit organizations
- schools
- other government programs.

"Partnerships" may not be consistently defined and reported among projects.

Projects did not describe the nature of these partnerships in detail, and it is very likely that the term is not well understood or consistently defined among projects.[92]

The case studies of six projects provide some insight into the types of partnerships formed with CPNP projects. All six sites reported that the formal partnership with the sponsoring organization(s) responsible for overall program and financial management was the most fundamental and essential

[91] An Evaluation of the CPNP: Intermediate Outcome Indicators, Section B-2, B-4

[92] Note that component evaluation reports did not completely report on partnerships. Information may have been incomplete or impractical to process.

relationship.[93] Case studies found the following types of partnerships to also be important:

- co-location with the project sponsor or another partner (e.g., primary health centre, a CAPC program) or shared space (e.g., in a community centre, church basement, etc.)
- shared, contributed, or leveraged staffing in the form of administration, education, or direct client service
- referrals to the program, and from the program to other health or social services (such as Public Health, Legal Aid, Social Services, Child and Family Services, Victims Assistance, Immigration, Women's shelters or organizations, Health Centres, food banks, etc.).

Case study projects also received donations or in-kind support from food suppliers, other outreach programs, cultural associations, community kitchens, midwifery services, schools, drop-in centres, health care providers, churches, etc.

Partnerships are described as extremely beneficial to projects and communities.

Project stakeholders participating in the six case studies described partnerships as the way in which participants can be better served by the project and by the community in general. Benefits include: better communication, and a better understanding of the needs of the community and the extent to which those needs are being addressed, the ability to provide enhanced or expanded services; shared staff and resources; and more opportunities for joint training or professional development.[94] They also believe that partnerships increase community awareness of pregnancy and breastfeeding issues and encourage community growth in these areas.

Some key informants noted that projects are expected to be positioned strategically and build on the resources available; they believe that sometimes collaboration needs to be re-emphasized to projects. Project staff interviewed for case studies believe that

[93] CPNP Case Study Component Final Report, p. 36.

[94] CPNP Case Study Component Final Report, p. 39.

partnerships are extremely important and beneficial; however, developing and maintaining partnerships adds pressure and requires staff time. In addition, the number of partners may be limited by the size of the community.

Participant involvement

Unique relationships develop between project staff and participants. The CPNP encourages empowerment, capacity-building, and active participant involvement in the program. In essence, participants are seen as potential partners of the program and are encouraged to formally or informally be involved in program planning and delivery. While few projects in Quebec involved participants in this way, the vast majority of projects outside of Quebec had participants volunteer, and about half of projects had participants become paid staff.

Volunteers are most often involved in: project decision-making, role modeling and peer teaching, although some also serve on an Advisory Committee, aid in translation, or perform other services.

3.2.4 Program management

The CPNP is a mature program that is described as running well.

Overall, the program is described as "a well established program [that] runs smoothly."[95] "A recent Report by the Office of the Auditor General, reviewing the management of population health programs in Health Canada, stated that the CPNP had in place "a well-established project management process and good program guidelines that clearly describe program objectives, priorities, and eligibility criteria."[96]

Two overarching issues made program management challenging. First, CPNP and CAPC are overseen by the same groups, and issues pertaining to CPNP, a much smaller program, are often dominated by those of CAPC.[97] Second, the community

[95] CPNP Interview Component Final Report, p. 63.

[96] CPNP Document Review Report, p. 18.

[97] CPNP Interview Component Final Report, p. 32.

development approach, while providing for comprehensive and flexible provision of services, makes it difficult for the program to:

- balance customization and responsiveness to individual needs with accountability and performance measurement requirements
- supply the human resources (dieticians, counsellors, project coordinators) required to deliver programs that reflect a population health approach
- provide comprehensive services necessary for program success with limited financial resources.[98]

Nonetheless, based on key informant interviews, researchers conclude that:

> "[a]mong program staff there is a common understanding of the nature of the Program and a strong commitment to ongoing development; the program culture supports evaluation and innovation, and the national and regional components have established methods for working together and sharing results. After eight years in the field, the program has matured and with this comes greater understanding of the practical challenges of implementing a prenatal outreach program in diverse and changing communities across Canada."[99]

A detailed report on successes and challenges in each of the coordination, monitoring and evaluation areas follows.

Coordination

Coordination is crucial to a program such as the CPNP, with its national, regional, and local components. Involving each of these components in planning, management, and evaluation has been a

[98]Based on a review of CPNP Document Review Report, pp. 32-33.

[99]CPNP Interview Component Final Report, p. 63.

priority. Coordination takes place through a variety of means, as outlined in Table 8, below.

National-regional coordination takes place via communications from the National Office, formal meetings or informal liaison with Regional Directors, Children's Managers or Program Consultants (particularly the CPNP "lead"), as well as through NETC (for evaluation). JMCs, Advisory Committees, Steering Committees, or similar groups support a coordinated approach. Children's Managers and Program Consultants also have a regional view of programming.

At the local level, the CPNP funds a wide range of projects. Case studies found local projects to be satisfied with their relationship with Health Canada, but they tended to report little contact with their Regional Program Consultants.

Table 8: CPNP means of coordination		
Group or activity	**Description**	**Coordination**
National Office	Establishes and participates in coordination activities — within the CPNP and with other federal departments or initiatives.	
Regional Directors	Link regions to Health Canada and other relevant federal departments and initiatives.	
Meetings between National Office, Regional Directors, Children's Program Managers, or Program Consultants	National meetings, annual conferences, ongoing liaison by National Office.	Allow for communication, education, information sharing at the national-regional level.
CPNP "lead"	In each region, a Program Consultant is appointed as "lead."	Liaison and link between the region and National Office.
Regional Evaluation Consultants and National Evaluation Team for Children (NETC)	Involved in national and regional evaluations of CPNP, CAPC, AHS; NETC meets four times per year, and consultants have monthly teleconferences.	Provide awareness of other programs' evaluations, link regions to National Office, link to corporate history and evaluation expertise.
Joint Management Committees (JMCs)*	Include federal, provincial/territorial, and sometimes local representatives.	Provide a management or advisory role, coordinating, planning, providing direction within a region.
Advisory Committees or Steering Committees	May include clients, local NGOs, program coordinators.	Include broader representation than JMCs, at the regional level.
Children's Managers and Regional Program Consultants	Manage/oversee a variety of projects (CPNP, CAPC, AHS) in a region.	Ensure awareness of other programs, facilitate information exchange between communities, Health Canada, the provinces/territories, and stakeholders within a region.
National/Regional working groups	Are appointed on an as-needed basis.	Form working relationships/linkages within the program.
National research	Periodic research or exploration of issues.	Provides information to all regions.
* or similar structures with different names in some provinces		

Overall, key informants had positive comments about each of these coordination tools. The relationship between regions and National Office was described as "very good to excellent." JMCs were described as an effective means of bringing the provinces/ territories into the process. Stakeholders indicated that project staff and regional program consultants work together, sharing both program information and resources in order to strengthen local planning and that the National Office responds to local needs (e.g., staffing issues), demonstrating a commitment to maintaining the integrity of the program.[100] "The close collaboration between the federal, provincial and territorial governments, generated through

[100] CPNP Document Review Report, p. 7.

CPNP, is of mutual benefit and is seen as a model for further collaboration."[101]

While the groups and activities appear to be working well, they link only certain groups of people together, and some key informants believe that the "overall picture" is incomplete. For example, while stakeholders within a region may be well coordinated, they may not have a good understanding of other regions' experiences or learn from and link with other federal or provincial/territorial Initiatives. "Regional offices tend to have a vertical rather than a horizontal focus at present." Similarly, JMCs are "seen as an excellent example of federal-provincial collaboration."[102] However, "at present the committees are not formally linked to ECD [Early Childhood Development]. Nor do they have a forum where they can meet to discuss common issues."[103]

They also reported that coordination is challenged by:

- a reduction in Children's Managers/Program Consultant meetings
- inadequate National Office resources leading to "breakdown in communication and support"
- Program Consultants' increasing workload, leading to more distant relationships with projects
- a need for national direction on achieving unity when projects range from small organizations that require significant support to large organizations with accountability systems different from those of the CPNP
- a need for training in the regional offices (on accountability, contribution agreements, board training, community development, etc.)
- inconsistent messages and practices relating to choosing sponsors, partnering, and funding requirements
- a need for common guidelines and measures for funding and reporting, especially because of the integration with provincial/territorial programs.

[101] CPNP Interview Component Final Report, p. 63.

[102] Ibid., p. 31.

[103] Ibid., p. 64.

Monitoring

The CPNP and the projects it funds are subject to ongoing data collection and performance measurement using individual project monitoring, project renewal, and evaluation activities. This section describes these processes as they pertain to PPHB-administered projects.

Program Consultants are primarily responsible for ongoing monitoring of projects.

Regional Program Consultants are responsible for monitoring financial resources, effectiveness, and the completion phase of projects. They may review financial records and project files, conduct site visits, and require progress reports. However, the extent of Program Consultant involvement varies across projects. "Program Consultants must maintain a difficult balance between two important principles — accountability and empowerment. Program Consultants have to ensure that projects offer programs and services that reflect the program's guiding principles and adhere to the terms and conditions of the Contribution Agreement. However, they must also respect the principle of empowerment, to have the community make their own decisions, and provide support through information, resources, and respectful guidance."[104]

Project renewal requires projects to demonstrate:

- good management, financially accountability
- adherence to CPNP Guiding Principles
- that they continue to meet their objectives
- that they reach their targeted population.[105]

A 2001 Report to the Auditor General found that, in general, project selection, approval, and monitoring were adequate and project management had been improving. The large proportion of projects approved for renewal also suggests that monitoring has resulted in projects that meet renewal requirements. At the same time, however, the Auditor General also noted that the branch and

[104]CPNP Document Review Report, p. 25.

[105]Ibid., p. 27.

the program lacked the required information for priority setting including surveillance data and program evaluation.[106]

Evaluation

Evaluation takes place at the national, regional, and local (project) levels. Currently, evaluation is supported by Regional Evaluation Consultants and NETC. Evaluation Consultants work at the regional level, providing training, support, and direction for evaluation work, which frequently links with national work. NETC is a forum for discussion and collaboration, linking regions to the national evaluation and providing expert evaluation advice.[107]

Key informants believe that evaluation activities are incorporated into daily operations of the program and are part of the CPNP culture. They report that, to a large extent, both regions and local projects have become much more supportive of accountability and evaluation:

> "There has always been a tension between what the Branch wants and what communities want to provide. In recent years, much more weight is being placed nationally on evaluation. The Branch has to provide information to Treasury Board, which has renewing power authority. Regions have tended to say, just give us the money, we know our communities and their needs. There is greater acceptance now on the need for evaluation, the regions see the value in having data to make the case for more funding and to provide feedback to stakeholders and communities to show the investment has been used wisely."[108]

> "Projects may not always agree on the depth of questioning, but there is a fair amount of buy in and understanding that it is a funding requirement; projects also want to show what changes have happened."[109]

[106] Report of the Auditor General of Canada-2001, Chapter 9, p. 2 and p. 16.

[107] CPNP Interview Component Final Report, p. 41.

[108] Ibid., pp. 41-42.

[109] Ibid., p. 42.

The CPNP has created an "evaluation culture" within the program.

The structure of this national evaluation, as well as the strengths and weaknesses of its design and implementation, are described in detail in Section 2, above. Key informants said that this process has built significant evaluation capacity within the CPNP community. They specifically cited:

- the evaluation design, which was tailored to meet program managers' needs
- the participatory evaluation approach used in designing data collection tools
- the extensive training provided across the country.

Nonetheless, based on a review of the evaluation materials and the key informant interview report, there are significant challenges and indications that changes are required for future evaluation work. First, the evaluation framework is described as inadequate. "The Program is unable to answer the big questions...using the national evaluation framework questions."[110] As described above, the framework is dated, and the program has evolved since its development in 1996.

Several evaluation issues may stem from an outdated framework, as outlined below:

Program and project operations and impacts have been blurred. In many ways, the CPNP is treated as a stand-alone, self-contained operation. The CPNP is a mechanism for funding the delivery and expansion of services consistent with its objectives and guiding principles. Nonetheless, the evaluation considers projects to be "CPNP projects" and treats them as the operational and delivery component of the program, despite the fact that in many cases, these funds are a small part of a project's budget, and project interventions and service delivery were established long before the CPNP contribution. Strictly speaking, for example, the CPNP's target group is the collection of agencies and organizations eligible for funding. It is through these projects that the "true" target group, defined as women at risk of poor pregnancy outcomes, in need of breastfeeding support, or with limited access to services is reached. While this may appear to be a technicality, it has significant implications for the direction of evaluation of the CPNP and other

[110] Ibid., p. 44.

prenatal and children's programming. It is difficult enough to measure changes in participants, let alone isolate the project effect apart from other factors. Determining the impact of the CPNP funding or expansion of these projects is even less realistic, particularly on a large scale over all projects. "It's unrealistic to ask 100 questions of a project that only received 20-30K and ask how the CPNP has changed the life of participants or the project."[111] Not only is the reporting burden unrealistic, but even if the most detailed information is collected, in many cases, it is unlikely that the incremental benefit of CPNP contributions will lead to a statistically discernable effect on outcomes of interest.

Focus has been on the objective of lowering the rate of LBW.

Success has been specifically defined. The CPNP has five objectives, which it is designed to achieve through projects. These include: reduced rates of unhealthy birth weight, improved maternal health, promotion of breastfeeding, increased access for isolated women, and the formation of partnerships and linkages within communities. The focus, however, has been on infant health, primarily birth weight, and breastfeeding initiation. Cost-effectiveness, in particular, depends on impacts on birth weight and breast feeding initiation. As a result, the Program's success in meeting other objectives has been studied in less depth. Furthermore, several recommended activities (counselling, preparation for labour and delivery, education on budgeting and cooking, support for lifestyle issues, social support) are not well linked to objectives or evaluation issues. For example, key informants believe that increased capacity was a valuable outcome of the CPNP but was not adequately captured in evaluation work.

As a result of the program's initial focus, the evaluation is structured to rely heavily on IPQ/ICQ data. These data are described as missing many issues. Nonetheless, these are the primary data collection tools, and their implementation required the cooperation of projects. To create ownership and buy-in, projects were heavily involved in the evaluation and data collection tool design. While this approach allowed for the development of a large CPNP database, key informants and case study site staff identified several shortcomings:

[111] CPNP Interview Component Final Report, p. 45.

- Participation (completion of forms) has been less than 100%, with an entire province exempt from ICQs.
- The compromise between evaluation research and capacity-building, customization, and empowerment of the program and projects resulted in a "watered down" approach.
- Operational issues pertaining to completing forms — when to administer them, who should administer them (e.g., participants, volunteers, or professional health staff), the time required to administer them, the sensitive nature of many questions, and, despite extensive training, a lack of understanding of the questions and how to complete the form consistently across the country.

The National Office must provide leadership in the area of evaluation.

A belief that evaluation questions and issues are irrelevant or incomplete, along with a significant reporting burden, have led to frustration and to some regions doing their own evaluation work. For example, one key informant reported: "The logic model developed jointly with the province has 3 main long term outcomes: nutrition and food security; health of participants; and infant health/breastfeeding. Attempts to link outcomes to the questions on the ICQ and IPQ showed there were a lot of gaps — indicators that could not be measured."[112]

Regional work can erode commitment to national evaluation activities. Other "key provincial partners are developing their own evaluation frameworks, which are in turn influenced by their participation in national surveys (e.g., NLSCY)."[113] "From an operational perspective, the decentralized structure lends itself to strong regional programs, which are responsive to local need and, where possible, closely integrated with provincial counterparts. To maintain a common approach the links between the national and regional structures need clarification and strengthening, particularly in the area of program evaluation."[114]

Evaluation activities must be relevant and well situated amid other programming.

[112] Ibid., p. 45.

[113] Ibid., p. 45.

[114] Ibid., p. 64.

Clearly there is a need to revisit the evaluation framework and data collection tools, which were created much earlier in the program (beginning in 1996 with the evaluation framework). Some of this work has been done and will be used in the future (e.g., the "ICQ2"). However, some believe that this is not enough; "despite the significant upgrading of the ICQ2, there is still concern that it does not adequately capture indicators of success."[115]

The key informant interview report mentioned a higher level view — realizing the common objectives among children's programs and what can and cannot be attributed to an individual program. One respondent suggested that "[a]t the Branch level, we need to think more about how to aggregate outcomes.; there needs to be more internal evaluation in areas such as capacity building. Many programs are interested in the same outcomes, e.g., participation, capacity, awareness. A collective approach is needed."[116]

3.2.5 Strengths and weaknesses

This section summarizes strengths and weaknesses of the implementation of the CPNP, as shown in Table 9 below.[117]

[115] Ibid., p. 43.

[116] Ibid., p. 46.

[117] Strengths and weaknesses of targeting groups, increasing accessibility, and forming partnerships are based on the relevant component evaluation reports. Strengths and weaknesses of program management have been taken directly from the CPNP Interview Component Final Report, pp. 46-48.

Table 9: Implementation	
Strengths	**Weaknesses**
Target groups	
The CPNP appears to have effectively targeted at-risk women or those otherwise in need of CPNP services.	The program targets geographically, so not all potentially eligible women may be reached.
	In some communities, it is challenging to provide dietary assessment and nutritional support with available staff and resources. Professional staff are needed to deliver or train others to deliver these services.
Accessibility	
Projects are afforded the resources and freedom to customize the program as needed to attract, support, and maintain attendance of at-risk women in the community.	Very isolated women (including those most at-risk) may remain unreached by the program, especially by more institutionalized projects.
The program provides a gateway to a range of other services women may have been unaware of or reluctant to access.	Women report a range of barriers to accessing services. Barriers which prevent non-participants are not known.
Partnerships	
Partnerships are universally seen as valuable and allow projects to provide comprehensive services and increase access to a range of interventions.	The need to continually fund raise and form partnerships strains some projects, especially when the results of these efforts are not reflected in evaluation work. Some communities have limited partnership opportunities.
Program management (as identified by key informants)	
The program structures enable strong regional control within a framework of guiding principles and agreed processes for accountability and evaluation. This enables the program to respond in diverse ways to community needs, while maintaining program integrity. An effective communication system links the National Office to CPNP staff in the regional offices. The program is described in the same way and in accordance with the guiding principles across the country.	There are weak links in the evaluation process. The National Office holds accountability for the national evaluation but depends on the projects for data collection; some CPNP projects, and FNIC, do not complete the national questionnaires. The regions cannot access the national database and until recently were unable to obtain project reports. Feedback on national trends and issues arising from the data depends on the National Office pulling together the data.
The national evaluation has designed an evaluation framework, identified outcome indicators, and generated recording tools, which are, by and large, acceptable to the regions. A program database is used to produce national, regional, and project reports which are being used to guide decision-making. The National Office uses the reports to maintain the profile of the program.	The regions are dissatisfied with the ability of the national evaluation framework to answer questions about the program. Many questions are being raised about the evidence base for the program. Significant regional resources are being invested in the development of logic models and evaluation frameworks, but this work is taking place in isolation and duplication of effort is likely.
The national evaluation consultant has promoted a participatory approach to evaluation and fostered positive attitudes toward evaluation in the program.	There is very limited communication between the contracted national data consultant and NETC and virtually no sign of a collaborative relationship between them that would support program evaluation.
The program has dedicated regional resources for evaluation that help to maintain the integrity of the national evaluation and provide a voice on regional issues.	The lines of communication between PPHB, the Regional Directors, and the National Office are unclear. There does not appear to be any systematic coordinated strategic planning and priority setting for the program.

Program implementation has also experienced challenges with staffing:

- Projects and regional offices both reported concerns about project staff. High levels of stress, dissatisfaction, or burn-out as a result of increased numbers of clients, inadequate resources, long hours, and lack of cost of living increases and/or benefits were commonly expressed concerns.

- The amount of training project staff receive varies among projects and across regions, often reflecting the size, geographic location, and capacity of projects. Some projects need management-level training for coordinators, while others need training for front-line staff.

3.3 Program success

As described in the preceding sections, program and project staff believe, and program data indicate, that the CPNP has been implemented in such a way as to meet several of its objectives:

- Women at risk of poor pregnancy outcomes have been provided with comprehensive prenatal care.
- The CPNP has been able to increase access to such services for many physically or culturally isolated women.
- There is widespread support for and participation in the development of partnerships and community linkages.

This section of the report provides an overview of activities and outcomes related to other program objectives and describes the extent to which the program has been able to *measurably* improve the health of women and their infants.

3.3.1 Impact on pregnancy outcomes

As described above, the CPNP approach to improving infant and maternal well-being is through the provision of comprehensive programming. This section describes these services and reviews the qualitative and quantitative assessment of their effectiveness.

Service delivery

Service delivery varies across projects. Some provide a casual, drop-in approach, while others require registration. Some have a group focus, often emphasizing peer support, while others have a one-on-one focus or mainly employ professional staff. While Health Canada describes the CPNP as having a population health approach, individual projects use different models: some with a biological or medical focus, others emphasizing education, empowerment, or other goals. While the approach is highly customized, there is consistency in the types of services provided, particularly in projects outside of Quebec.[118] For example, fewer projects in Quebec focus on group nutrition or counselling, food preparation, child care, and transportation, whereas a majority of other projects provide these services. In some cases, the variability of services offered is the result of efforts to avoid duplication of services already available in the region.[119]

[118] Recall that program delivery is unique in Quebec, and that these comprise more than one-third of all projects.

[119] Noted by CPNP program staff.

Table 10: CPNP services, 2000-2001

Service	% of projects providing this service			% of participants using this service *	
	Outside Quebec (n=147)	Quebec (n=136)	Total (n=283)	Prenatal entrants (n=28,257)**	Post-natal entrants (n=1,110)
Food supplements	99%	94%	96%	74%	67%
Breastfeeding help	99%	83%	91%	59%	39%
One-on-one nutrition services	84%	88%	86%	53%	32%
Vitamin supplements	75%	90%	82%	41%	25%
Dietary assessment	81%	81%	81%	62%	36%
Other educational services	80%	71%	76%	39%	31%
One-on-one lifestyle services	76%	64%	70%	18%	13%
Lifestyle assessment	65%	64%	65%	18%	8%
Group nutrition services	91%	35%	64%	49%	40%
Food preparation	88%	38%	64%	39%	33%
Transportation help	87%	34%	61%	37%	27%
Group lifestyle services	78%	32%	56%	30%	26%
Child care	79%	26%	53%	18%	24%
Other support groups	64%	22%	44%	18%	21%
Other services	48%	15%	33%	18%	21%

Source: IPQ, ICQ *based on ICQ, excludes BC and QC; Effectiveness Quantitative Analysis - Intermediate Outcomes.
Participants only have a 100% response rate for dietary assessment services. Prenatal and post-natal respondents have non-response of approximately 23%-24% across other services, although actual rates vary for each service.

Table 11: Assistance

	Smoking (n=2,719)	Alcohol use (n=426)	Drug use (n=299)	Abuse (n=644)	Food shortage (n=760)
Counsel by CPNP staff	77%	74%	79%	71%	73%
Referral within agency	1%	2%	5%	10%	25%
Referral outside agency	4%	11%	21%	45%	44%
Other service provided	12%	14%	14%	12%	22%
No action taken	12%	18%	9%	10%	7%

Source: ICQ, Effectiveness Quantitative Analysis - Intermediate Outcomes.

Not all participants were asked about counselling and referrals, as these topics were not covered by the mandatory ICQ questions. Nonetheless, they were identified by key informants as important components of the CPNP, and some jurisdictions did elect to collect this information. A majority (71%) of women who

answered the question said that they followed up on the referrals provided.

Desired outcomes

The CPNP was designed to impact the following outcomes:

- birth weight
- infant health
- maternal health
- breastfeeding.

The 1998 ICQ summary report provides a basic description of infant health indicators.

Program participants who returned an ICQ reported LBW rates of 5.9% for single births and 7.4% for multiple births. Premature delivery rates were 9.5%, and 11.8% of infants were classified as small for their gestational age, although this calculation was subject to high non-response on gestational age. Of all infants, 8.3% required special care or intensive care nurseries. Multivariate analysis found significant associations between this extra care and primary diabetes, previous LBW delivery, and alcohol consumption during pregnancy.

The DPED Economic Evaluation of the CPNP (2003) compared key outcomes among sub-groups of ICQ respondents. These results demonstrate the associations between birth weight, fetal mortality, and various risk factors. In general, LBW rates were associated with women who were: teenagers, abused, of very low income, smoking or using alcohol or drugs, or were single. Higher rates of HBW were associated with gestational diabetes and First Nations heritage. Fetal mortality was associated with women who were: teenagers, of First Nations heritage, of very low income, smoking, using alcohol and drugs, and women who were over 40.

Odds ratios compare the results above to “low-risk” women in the ICQ sample. The low-risk group is defined as women who: are between 20 and 39 years of age, are married, are non-Aboriginal, do not smoke, drink, or use drugs, do not have gestational diabetes, and have monthly household incomes of more than $1,000. For

convenience, only significant results are reported (Chi-square significance at 5%).

Table 12: Unhealthy birth weights among at-risk groups

	LBW		HBW		Fetal mortality	
	rate	odds ratio	rate	odds ratio	rate	odds ratio
Reference "low risk" group	**5.1%**	**NA**	**13.3%**	**NA**	**2%**	**NA**
Teen (under 20)	6.4%	1.27	-	-	2.9%	1.44
Abused	7.9%	1.59	-	-	-	-
Gestational Diabetes	-	-	23.9%	2.05	-	-
Aboriginal - First Nations*	-	-	20.9%	1.72	3.4%	1.69
Aboriginal - Inuit and Inuvialuit*	-	-	-	-	-	-
Low income (<$1,000/month)	7.1%	1.41	-	-	2.7%	1.36
Maternal smoking	8.3%	1.68	10.5%	0.76	3.5%	1.75
Maternal use of alcohol or drugs	8.0%	1.62	-	-	3.8%	1.93
Single	6.9%	1.37	-	-	-	-
Age 40 or over	-	-	-	-	5.2%	2.64

Source: An Economic Evaluation of CPNP (2003).
*This table refers to Aboriginal women served by the PPHB component of CPNP.

Few maternal health indicators are available. According to the 1998 ICQ summary report, 12% of respondents reported low weight gain, while 9.1% reported high weight gain. While 78.7% reported normal vaginal deliveries, 15.9% required a Caesarian section. Some jurisdictions included a range of other holistic health indicators (e.g., stress levels, self-esteem, attitude toward parenting, available supports). These may be the types of maternal health indicators most likely to be affected by the CPNP, but due to the focus and space constraints of the ICQ, they were not collected for all participants.[120]

More information is available on breastfeeding initiation. ICQ respondents have reported rates close to 80% for the last five years.[121]

[120] Ontario was the only province that continued with the pre- and post-CPNP questions on maternal health and analysis of this data shows mixed results.

[121] Economic Evaluation of the CPNP, 2003, p. 23.

Table 13: Breastfeeding at hospital discharge					
	1997	1998	1999	2000	2001
Single birth	78.4%	78.5%	77.5%	79.1%	77.6%
Breastfeeding with or without supplementation of formula, etc. Source: Economic Evaluation of the CPNP (2003)					

The Economic Evaluation of the CPNP (2003) also studies breastfeeding rates among various sub-groups. Compared to the "low-risk" group defined above, of whom 93.4% breastfed, every "higher risk" group — teenagers, abused women, those with gestational diabetes, Aboriginal women, very low-income women, women who smoke, use alcohol or drugs, single mothers, and those over the age or 40 — was less likely to breastfeed. Their rates of breastfeeding were between 74% and 85%.[122]

About one-third of ICQ respondents (from 1996 to 2000) breastfed for one to six months (34%); about one-third (34%) were still breastfeeding at six months (program exit); and about one-third did not breastfed at all (16%) or did not supply any information (14%). Women who completed the ICQ said that they stopped breastfeeding for a variety of reasons, including lack of milk (11%), discomfort (6%), and because the baby was hungry (6%).

Summary statistics of ICQ data provide a good description of some program participants but cannot support evaluation of program impact. The effect of the program on these indicators is estimated in two ways. First, key informants and case study participants provided feedback on perceived program impacts. Second, quantitative analysis of program data was undertaken to study sub-groups and to attempt to isolate the effect of the program (or various components of the program) on desired outcomes, apart from other factors.

Opinion-based examination of program impact

There are two sources of opinion-based evaluations of program success. First, some jurisdictions elected to place questions on the

[122] An Economic Evaluation of the CPNP (2003), p. 19.

ICQ that collect feedback from participants. Second, many program participants attended focus groups as part of the case study component of the evaluation.

ICQ data collect information on why women join and continue to attend CPNP projects and how the program has affected their nutrition. ICQ data indicate that most women come to the CPNP, and stay with the program, for information and social support. They also report that food, vitamin supplements, recommendations or reputation of the program, and knowing someone else in the program are important.

Table 14: Benefits of the CPNP (n=28,257)

	Reason for coming	Reason for staying
Information	64%	66%
Social support	45%	55%
Recommendation	34%	15%
Food	33%	42%
Vitamin supplements	22%	25%
Know someone else	19%	17%
Reputation	17%	16%

Source: ICQ, An Evaluation of the CPNP: Intermediate Outcome Indicators.

Some participants were asked to evaluate the nutritional component of the CPNP using the ICQ.[123] Of those who did, 81% said that *food was easier to obtain because of the CPNP.* In addition, 87% said that they were *eating better as a result of the CPNP.* They were able to eat better because of "what they learned" (66%) and the direct food supplementation (56%).

Program participants were enthusiastic about the value of the CPNP to them.

Overall, case study participants agreed. Usually, they were unable to isolate the "most important" services. Many commented on the usefulness of all services offered, emphasizing the importance of:

- food supplements or vouchers
- information and educational opportunities

[123] These questions were not part of the 38 required to be included on the ICQ.

- emotional and psychological support from project staff
- social interaction, which helps combat isolation and provides support for pregnancy and child rearing.

For all case study sites, staff and community partners also believe that these services have produced a diversity of outcomes for mothers and infants. Most often mentioned were that the program helped with:

- increased knowledge of proper nutrition
- improved nutritional status
- healthier pregnancies/fewer complications
- healthier birth weights
- greater knowledge of breastfeeding as an option/higher rates of breastfeeding
- improved mother-infant attachment
- improved parenting ability
- reduced stress and anxiety
- improved self-confidence and self-esteem
- improved social support networks/reduced isolation
- increased awareness and use of available community resources.[124]

Statistical examination of program impact

Preliminary statistical examination of program impact has been undertaken.

The preceding information describes maternal and infant outcomes and opinion-based evaluation of impact. Despite this positive qualitative assessment, participant outcomes cannot be reviewed alongside an appropriate comparison, nor can any positive outcome be attributed to the CPNP apart from other factors. To assess program impact with statistical certainty, the effect of other factors must be controlled. This can be achieved using a comparison group or by using appropriate multivariate regression techniques.

Conducted as one of two studies comprising the National Evaluation of CPNP, "An Economic Evaluation of CPNP" aims to estimate program effects on perinatal outcomes, breastfeeding, and

[124]CPNP Case Study Component Final Report, p. vii

maternal health. This work is mainly based on person-specific ICQ data collected between 1996 and 2002. [125]

Breastfeeding initiation

CPNP breastfeeding preparation is effective at increasing breastfeeding initiation.

In terms of positive evidence, this economic evaluation found that "breastfeeding preparation (BFP) provided by CPNP appears to be effective at increasing the rate of breastfeeding initiation among prenatal CPNP participants."[126] This finding is based on ICQ data about infants breastfeeding at hospital discharge (not only breastmilk alone, but including other combinations with formula, water, etc.). Mothers who received BFP had initiation rates of 85%, compared to the 68% of those who did not receive BFP; therefore, the risk of a mother not initiating is 48% lower due to BFP. Given these comparative initiation rates, for every 5.6 clients provided BFP, an additional mother will initiate breastfeeding. These findings were validated by two additional analyses: 1) restricting cases to a high-risk sub-group (teenage smokers) produced similar results; and 2) logistic regression found a positive, significant effect of BFP, while controlling for other confounding factors. (Additional follow-up analyses regarding breastfeeding duration, and specific forms of BFP, were recommended).

Low Birth Weight

The economic evaluation used a Cox regression method in order to address known sources of bias due to program drop-outs (i.e. loss to follow up of approximately 20%). The model accounts for these drop-outs with life table techniques, by exploring the association between length of CPNP participation (i.e. specific services) and the risk of a LBW event. The main policy variable of interest in this case is FOODIET, which measures whether or not a woman received a package of services consisting of food supplementation and dietary assessment. (Note: 25% of CPNP prenatal clients did not receive any food supplements, as a potential control group). Results are presented in Table 15, below. As reflected by the

[125] Note that these findings are based on the analysis of ICQ data and are subject to the general data limitations described 2.4, above. In addition, the actual specification of "breastfeeding preparation" is necessarily vague, given the ad hoc nature of CPNP services across different communities. These results therefore reflect the "typical BFP service," on average.

[126] An Economic Evaluation of CPNP (2003), p. 21.

overall omnibus tests for the model (-2 log likelihood and Chi-square), the combined model is significant at 99% confidence level. Regarding individual coefficients within the model, statistically significant findings (.05 or better) are bolded, and the program variable of interest (FOODIET) is in italics. The column noted EXP(B) is analogous to an Odds Ratio, where a value of 2.0 means twice the risk of LBW for those with the characteristic compared to those without it. Main findings include:

- The key variable under study, the combination of dietary assessment and food supplementation, was not found to be statistically significant. In other words, food supplements and related counseling were not found to significantly reduce LBW.

- Factors positively associated with LBW include: low maternal weight gain, maternal smoking, entry into CPNP during last trimester of pregnancy, and recent immigration.

- Factors negatively associated with LBW include: high maternal weight gain, provision of vitamins, provision of child care, entry into CPNP during first trimester of pregnancy and number of program contacts (correlated with early entry into CPNP).

These results suggest further study into the impact of maternal characteristics (e.g., smoking), program services (e.g., vitamin and food supplementation), as well as further study of the variables themselves (e.g., the significance of number of contacts with a program, and whether this captures service intensity).

This work is exploratory in nature and is constrained by the scope and amount of available data:

- The Cox regression model accounts for potential bias due to significant numbers of program drop-outs, although the available sample size may be inadequate to capture a small change in LBW of less than 1 percentage point.

- The scope of content is limited to those existing person-specific variables captured by the ICQ (e.g., no changes in

maternal smoking status were measured during the pregnancy; no start/stop dates for specific CPNP services were captured, so services were assumed to start and end with case enrolment/departure).

Preliminary work on LBW has been undertaken.

Given these data limitations, the empirical results pertaining to program impact on LBW should be considered preliminary rather than conclusive. Therefore, at this time, there is no conclusive empirical evidence available to support or refute the contention that providing food supplements reduces Low Birth Weight among CPNP participants.

Table 15: Regression results: Dependant variable=likelihood of experiencing LBW event, as a function of exposure to specific services (weeks elapsed since CPNP enrolment) and other listed characteristics

Variable	B	Sig	Exp (B)
Teenager	-0.227	0.073	0.797
Age 40 or older	0.179	0.618	1.196
Abuse reported	0.129	0.211	1.138
Gestational diabetes this pregnancy	-0.101	0.617	0.904
First Nation mother	-0.049	0.645	0.952
Inuit/Inuvialuit mother	-0.111	0.789	0.895
Household income <$1000/mo	0.095	0.187	1.099
Immigrated in past 10 years	**0.237**	**0.04**	**1.268**
Maternal smoking	**0.382**	**0**	**1.466**
Alcohol or drug use	0.153	0.153	1.165
Single	0.013	0.863	1.014
Entered CPNP in first trimester	**-2.303**	**0**	**0.1**
Entered CPNP in second trimester	**-1.097**	**0**	**0.344**
Food supplements and dietary assessment	*-0.033*	*0.814*	*0.968*
Maternal smoking and low weight gain	0.086	0.636	1.09
Maternal smoking and low pre-pregnancy BMI (underweight)	0.171	0.259	1.186
Number of CPNP contacts	**-0.017**	**0**	**0.983**
First pregnancy and teenager	0.088	0.518	1.092
Low pre-pregnancy BMI (underweight)	**0.31**	**0.007**	**1.363**
Low weight gain during pregnancy	**0.598**	**0**	**1.818**
High weight gain during pregnancy	**-0.355**	**0.037**	**0.701**
Food supplements received	0.054	0.688	1.056
Vitamins received	**-0.163**	**0.034**	**0.849**
Dietary assessment received	-0.093	0.286	0.911
Individual dietary counseling received	-0.029	0.781	0.972
Group dietary counseling received	-0.044	0.656	0.957
Food preparation training received	0.047	0.586	1.048
Needs assessment received	0.15	0.131	1.162
Individual lifestyle counseling received	0.042	0.662	1.043
Group lifestyle counseling received	0.048	0.627	1.049
Transportation services received	0.148	0.066	1.16
Child care received	**-0.335**	**0.002**	**0.715**
Other CPNP service received	0.084	0.358	1.088
Year of entry (re: secular trend)	0.045	0.077	1.046

Maternal Health

The economic evaluation explored available maternal health indicators by comparing ICQ responses to questions like "I feel prepared to care for my baby" and "I feel excited about becoming a parent" before and after program completion. These results, however, are based only on Ontario ICQ respondents and appear to contain internal contradictions as well as contradictions with qualitative data (e.g., focus groups). For these reasons, the findings about maternal health are inconclusive, and further work on program impact on maternal health is required. Additional research based on variables added to the upcoming Maternity Experiences Survey was therefore recommended. Finally, it was noted that one of the major challenges facing both maternal and infant health is substance addiction, particularly smoking – which affects about 40% of participants.

Other work has included attempts to estimate program impact by isolating comparison groups. The results of statistical examinations of the CPNP impact are described in Table 16 below. This work is best described as exploratory, however, due to the lack of consensus on the ability of the data to support analysis and the methods of analysis.

Table 16: Overview of statistical examination of program impact

Description	Results	Limitations
Health Canada evaluation report		
Economic Evaluation of the CPNP (2003) - conducted a logistic regression and rudimentary cost analysis of breastfeeding initiation services as well as a Cox regression and "macro analysis" of service provision and LBW. It also reviewed select provincial ICQ questions related to maternal health (outlook).	A positive program effect was found on breastfeeding initiation (duration not estimated). The Cox regression confirmed a relationship between LBW and known risk factors but did not detect an effect of individual CPNP services. A "macro analysis" did not find a consistent reduction in LBW since CPNP inception.	IPQ/ICQ data limitations and bias described above, especially possible confounding bias with breastfeeding initiation. Regression models appear to invite collinearity, and all results do not appear to have been interpreted. Maternal health outcomes based on the ICQ are counterintuitive and suggest inappropriate administration of questions. Cost-effectiveness is prohibited by a lack of detailed cost data or some measure of estimating costs associated with specific service provision.
Other statistical examination reports		
Baseline Data Study (2002) - compared CPNP outcomes with those of women in similarly high-risk communities. Logistic regression was used to estimate	Similar maternal outcomes in terms of gestation, weight gain, vaginal delivery, and breastfeeding. Significant estimated impact on breastfeeding. No statistically significant	Potential sample selection bias, potential bias given exclusion of babies still in the hospital after two months. Significant differences in the demographic and risk

Table 16: Overview of statistical examination of program impact		
Description	**Results**	**Limitations**
probabilities of several outcomes, while controlling for risk factors (age, smoking, marital status, education, low income, substance use, previous pregnancy risks).	program impact on LBW.	profiles of CPNP and baseline groups. Limitations of regression analysis (e.g., unobserved characteristics).
Economic Evaluation of the CPNP (2001) - used post-natal entrants and infant siblings as comparison groups. Calculated cost- effectiveness and cost-benefit ratios based on findings.	Demographic, risk, and outcome variables compared. LBW rates slightly lower for prenatal entrants, and infants weighed slightly more on average. Prenatal entrants had higher rates of C-section and delivery complications. CPNP infants had lower LBW rates, higher average weights, and higher breastfeeding rates than their siblings.	Exploratory work only; no statistic regression methods applied. Risk factors were not controlled and no inference about program impact was attempted. ICQ data is limited as described in Section 2.4 above.
Level of Service and Birth Weight in the CPNP (2002) - described differences of outcome (low birth weight) associated with service use, service duration, and service intensity, for each of four different risk factor levels.	In general, there were patterns where positive outcomes were associated with higher levels of service overall or within risk categories, although results were not always statistically significant. Similar results were realized when post-natal entrants were included as a comparison of receiving "no" services.	IPQ/ICQ data limitations exist as above in addition to non-response. Bias may be introduced by early delivery, late entrants, the relationship between highest risk and service intensity (even within strata), and the level of compliance of women. Expert reviewers provided feedback; however, not all suggestions (e.g., regression, other measures of service) were addressed.

3.3.2 Most successful activities

The evaluation framework asks which CPNP activities are most effective. In general, breastfeeding support has been examined as distinct from other CPNP services, although one study examined service "intensity" while another included a range of services as independent regression variables. However, as described above, statistical examination of program impact has been largely inconclusive.

The design of the CPNP emphasized nutritional assessment and supplementation. During interviews, however, experts noted that while nutrition is a valuable component to prenatal programming, outside of extreme deprivation, increased nutrition is expected to have only a modest increase on birth weight, and little impact on pre-term delivery.[127] Rather, the nutrition component appears to be valuable as an incentive to join the program, to help low-income

[127] CPNP Interview Component Final Report, p. 16.

women eat better, and as part of a strategy to provide comprehensive services. Participants from the case studies agreed, reporting that food supplements or vouchers were very important (and an incentive to attend) but not necessarily more important than the information and support they also received.

3.4 Cost-effectiveness

Cost-effectiveness analysis is the calculation of resources required to produce a desired outcome. Cost-benefit analysis compares the resources (costs) of a program to the value of its results. Both types of cost analysis have two main components:

Cost analysis requires conclusive estimation of program impact, estimated financial value of impacts, and detailed program cost information.

- estimation of program impact
- costs associated with the program intervention(s).

Cost-benefit requires that the program impact be translated into a dollar value as well.

As described above, estimation of program impact is best described as exploratory. Mean program costs are about $100,000 per project (per enrollee are $936 in Quebec and $1,217 for other projects), but these costs cannot be assigned to particular activities, nor are total costs (including other funding and in-kind benefits) provided.

Some preliminary work on cost-effectiveness is included in the Quantitative Component Evaluation reports. For example, one study found that breastfeeding support programming increased the likelihood of breastfeeding initiation and estimated that $5,000 to $7,000 was required to initiate breastfeeding for one additional infant. However, only aggregate project costs are available; costs were not assigned to particular activities (e.g., food supplementation, counselling, breastfeeding support), and in-kind resources are completely unaccounted for. Therefore, these estimates essentially assume that the CPNP provides only breastfeeding support, which is clearly not the case. It is impractical to undertake a cost-benefit analysis of breastfeeding because while the overall value of breastfeeding is well understood, few studies have provided estimates of financial benefits (generally realized through improved health and savings to the health care system).

Low birth weight is the indicator most suited to a cost-benefit analysis, since a large literature estimates the costs of LBW or premature infants on the health care system. However, as described above, work in this area has not been validated as conclusive for the purposes of this evaluation. Findings of impact on LBW are limited to select groups or preliminary, exploratory analysis. One study does calculate some preliminary cost benefit ratios, but information is incomplete (impact estimates are preliminary, and not all benefits are accounted for). While there are many estimates for the potential costs of LBW and premature infants, the estimates vary widely (e.g., between $4,445 and $43,755 USD and up to $200,000 CAD).[128]

There are many non-financial benefits of the CPNP.

Other programs have been evaluated and found to have financial benefits that exceed costs; however, the type of participant group, the type of intervention, and the desired results must be considered. For example, many of the benefits of the CPNP, such as improved self-esteem, reduced isolation, and improved parenting skills are difficult to quantify and assess financially.

[128] Economic Evaluation of the CPNP, 2001, p. 10.

3.5 Summary of main findings[129]

This section summarizes main findings for each of the main evaluation issues (relevance, implementation, success, and cost-effectiveness).

Table 18: Response to the Evaluation Framework

Evaluation objectives	Main findings
1.0 PROGRAM RELEVANCE	
1.1 To determine the continued need for the CPNP at the Federal level	The CPNP was created when Canada's low birth weight rates were higher than in some other comparable countries. The program was designed to provide funding to initiate or expand programming at the community level in order to create linkages and increase access to services, ultimately improving maternal and infant health and promoting breastfeeding. Recent statistics indicate that unhealthy birth weights persist in Canada, and the literature supports access to comprehensive programming, such as that provided by CPNP, to address known risk factors, such as smoking. Evaluation reports indicate that there has been some success in improving access to services and providing comprehensive care to women. They also describe projects with multiple partners that are well integrated into the community, successfully providing services that are unique in their approach or target group. Federal involvement in the area of prenatal care is valued, and staff and participants are enthusiastic about the program.
2.0 IMPLEMENTATION PROCESS	
2.1 To determine if the CPNP reached its target groups	The CPNP has successfully enrolled and received data on women with many of the targeted risk factors, such as being of low income or education, a teenager, single parent, Aboriginal women or recent immigrant, or using harmful substances such as alcohol and tobacco. It is estimated that 7% of all pregnant women and 60% of low-income women participated in the program.
2.2 To determine if the CPNP increased accessibility of services	The CPNP improves access by providing new or expanded services in high-risk communities and by linking women to a range of other services through partnerships or referral. Customizing services to meet needs (e.g., for an interpreter, child care or transportation, peer support, etc.) is also key to reaching women who may be isolated. Sixteen percent (16%) of projects reported excess demand. In addition, some believe that the more highly structured projects in Quebec are less likely to increase access for the most marginalized women.

[129] While this report presents the main evaluation findings, the lessons learned from each evaluation component are available under separate cover

Table 18: Response to the Evaluation Framework	
Evaluation objectives	**Main findings**
2.3 To determine if the CPNP provided appropriate program management	The Program is described as being well managed overall. Challenges include program and project human resource needs, sharing resources with a much larger program (CAPC), and a new participatory community development approach. Program management was specifically evaluated along three lines: coordination, monitoring and evaluation. Coordination occurs through a variety of positions and committees that link regions and the national office, as well as various stakeholders within a region. Overall, relationships are described as positive and successful. However, the program may require work to achieve coordination among regions and to form alliances with other governments or initiatives. Additional challenges include: limited time and resources devoted to coordination activities, a need for additional training, and gaps in national guidelines and practices. Monitoring activities are undertaken by Regional Program Consultants and through the project renewal process. Assessment of monitoring is limited, although the Auditor General's Report in 2001 found the system to be adequate, and the large proportion of projects approved for renewal suggests that these activities have been effective. Key informants reported that the CPNP has created a culture of evaluation within the program, and considerable training and capacity-building has taken place. Evaluation activities have faced several challenges: the program has evolved and evaluation issues and questions have not kept up; the national evaluation activities have focused on health outcomes and not studied other program impacts in depth; and quantitative data collection was designed as a census rather than a random sample and has not had complete success. Key informants identified increased communication, review of the evaluation framework, and further integration of national, regional, and other program evaluation as areas for further work.
2.4 To determine the nature of partnerships which were developed by CPNP projects	Program data suggest that projects regularly partner with a range of other organizations including health professionals, businesses, non-profit organizations, schools, government, and individuals. Nearly all projects received in-kind support from another organization, and most also encourage participants to become active volunteers. In-depth information on these relationships was not available for all projects, but case studies describe: formal partnerships with program sponsors, co-location or shared space, shared staffing, and linkages and referrals to a wide range of other services. Partnerships can require a lot of work from projects but increase community capacity and access to services for program participants in exchange.
3.0 PROGRAM SUCCESS	
3.1 To determine the impact of the CPNP on pregnancy outcomes	The CPNP has delivered comprehensive programming to women at risk of poor pregnancy outcomes. Several studies have statistically estimated program impact on birth weight or other infant health indicators, maternal health, or breastfeeding. Results, however, are exploratory rather than conclusive, so quantitative analysis of success is not available. Program participants who participated in case studies provided qualitative assessment of the program and services and are overwhelmingly pleased with the services. They reported all major aspects of the program - the nutritional component, information and education, and social support - to be important and valuable. They reported a range of outcomes that are consistent with program objectives - including improved access to services, reduced isolation, improved nutrition, healthier pregnancies and outcomes, more information on breastfeeding, better parenting, reduced stress, and more self-confidence.
3.2 To determine the effectiveness of various types of CPNP projects and activities	
4.0 COST-EFFECTIVENESS	
4.1 To determine if the CPNP is cost-effective	Three pieces of information are required for cost-effectiveness-analysis. First, program impacts must be determined. One must be able to measure and attribute desired outcomes to a particular intervention or set of interventions. Costs must be calculated for the intervention or set of interventions. Currently, the data are unable to support a cost analysis.

4.0 Recommendations

This section contains the recommendations that follow from the integration and analysis of all lines of evidence. They are based on the findings and conclusions in component evaluation reports and address both program implementation and evaluation.

It is important to note that the quantitative data analysis which was conducted as part of this evaluation is largely comprised of preliminary work and is not able to support recommendations for adjustment of program activities or target groups at this time. The need for additional work is identified in the body of the report; however, future changes are contingent upon addressing the first recommendation.

Program Recommendations

1. **Program rationale and objectives should be revisited.** The CPNP has evolved to include a range of services that extend beyond food supplementation and dietary assessment. Program rationale and objectives should reflect this evolution. Program objectives and project activities should be linked, and the relationship between the program objectives and the projects should be clear. Important components include:

    1a. Development of a program logic model
    1b. Expert review and program evaluability assessment
    1c. Communication of changes to program staff.

2. **National leadership should be strengthened.** Key informants identified needs for additional training and national guidelines for program staff, and wish information sharing to be coordinated among regions. The CPNP should be situated within the context of ECD, and alliances should be encouraged in order to encompass determinants of health that are beyond the mandate of the CPNP or Health Canada. Relationships within Health Canada with DPED and CPSS could be strengthened to expand the gathering, monitoring, assessment, and sharing of evidence.

3. **The program approach is widely regarded as valuable and should be continued.** Staff and participants value the flexible, customized approach and the core services provided by projects. The principles of community development should be preserved. The trade-offs between the flexibility of this approach and standardization, accountability, etc. must be acknowledged.

Performance Monitoring and Evaluation Recommendations

4. **Program success/impact needs to be redefined in light of program objectives**. All objectives should lead to objective measures. Measures must be realistic in terms of data collection and in terms of the ability to attribute impacts to CPNP funding or support. Objective measures must be:

   - consistent with and reflective of all program goals and objectives;
   - reasonably expected to result from program activities as outlined in a program logic model (Recommendation #1a);
   - identified for both intermediate outcomes (e.g., smoking reduction/cessation) and final outcomes (e.g., reduction in low birth weight);
   - reflected in a revised evaluation framework (Recommendation #5);
   - able to be collected and analyzed within the bounds of program performance measurement and evaluation.

5. **The approach to performance measurement and program evaluation must be refined.** The Evaluation Framework should be revised in accordance with the recommendations above. Quantitative data analysis must be undertaken to improve the understanding of program performance. An analysis plan should be produced, and should consider:

   - the capabilities and limitations of a reasonable ICQ and IPQ data collection plan (e.g., census, random sample of projects, random sample of participants, etc.) and the dataset which will result from the chosen plan;
   - the principles and limitations of social science research, acceptable limitations, risk assessment, and contingency

planning (e.g., consideration of sampling, non-response, representativeness, bias, and weighting);
- the appropriate analysis to isolate program impact, assess success of key activities, and support cost-effectiveness or cost-benefit analysis if possible;
- the need for significant qualitative data collection and analysis for a program of this nature.

6. **The program is unable to support cost-effectiveness analysis at this time.** To conduct cost analysis, two challenges must be overcome:

   - cost-effectiveness requires detailed data on both (incremental) program impacts and program/project costs. A reasonable approach may be to conduct a detailed study of a project or a small sample of projects with proven management and well-defined activities in order to validate the program approach.
   - If program objectives and indicators of success are revised to include measures of well-being (improved self-esteem, improved parenting, reduced stress and isolation, etc.), cost analysis will become more complicated, and it is possible that not all elements will be able to be included.

APPENDIX A
COMPONENT REPORTS AND DOCUMENTS

PRA Inc.

Component Evaluation Reports

1. CPNP Document Review Report (October, 2002)
2. CPNP Interview Component Final Report (January, 2003)
3. CPNP Case Study Component Final Report (December, 2002)
4. An Economic Evaluation of CPNP (January, 2003)
5. CPNP Literature Review (comprised of CPNP Prenatal Care: Effectiveness, Cost-Effectiveness and Cost-Benefit Analysis Literature Review (June, 2001), Literature Review Summary (n.d.) Economic Evaluation of the CPNP (July, 2001)
6. Effectiveness Quantitative Analysis - Intermediate Outcomes (April 2003)

Additional documents

7. Terms of Reference, Evaluation of the CPNP (February, 2001)
8. CPNP Evaluation Framework (November, 1996)
9. CPNP Evaluation Report Draft Outline (October, 2002)
10. Review Guides (Case Study Component, Quantitative Methodology Component) (n.d.)
11. An Evaluation of the CPNP: Intermediate Outcome Indicators (February, 2003)
12. Empowerment Goes Large Scale: The CPNP Experience (n.d.)
13. CPNP Evaluation Overview (November, 2002)
14. CPNP Baseline Data Study (December, 2002)
15. Assessment of Large Scale Social Programs with Varying Levels of Intervention - Collecting the Evidence: Evaluating the CPNP (November, 2002)
16. Tables: IPQ/ICQ response
17. Level of Service and Birth Weight in the CPNP (May, 2002)
18. External Reviews of CPNP Levels of Service Report (April, 2002)
19. Comments on the Level of Service Component of CPNP (January, 2003)
20. Review Comments from Barrington Research Group for *Effectiveness Quantitative Analysis - Intermediate Outcomes* (March, 2003)
21. Review Comments from Barrington Research Group for *An Economic Evaluation of the CPNP* (March, 2003)
22. Peer Review Comments on the Effectiveness and Cost-Effectiveness Quantitative Analysis (n.d.)
23. CPNP 1998 ICQ Report (December, 1999)
24. CPNP 2000-2001 Individual Project Questionnaire (IPQ) Evaluation Summary Report (April, 2002)
25. Case Study on the CPNP Data Collection System - Program Description (April, 2003)
26. Case Study on the CPNP Data Collection System - Lessons Learned (n.d.)
27. Case Study on the CPNP Data Collection System - Data Collection and Analysis System (n.d.)
28. Other health publications and web sites as appropriate to update population statistics.

APPENDIX B
EVALUATION ISSUES AND QUESTIONS

PRA Inc.

ISSUES, INFORMATION SOURCES AND PROGRAM INDICATORS

Evaluation Objectives	Evaluation Questions	Information Source	Program Indicators
1. PROGRAM RELEVANCE			
1.1 To determine the continued need for the CPNP at the Federal level.	**1. After four years of implementation, do the conditions that led to the creation of the CPNP still exist and justify the continuation of a program at the Federal level dedicated to the issue of prenatal nutrition?**	Statistics Canada Low Income data (including income data for aboriginal people). CICH[130], NLSCY[131] data	Birth weight rates (non CPNP) Infant health (non-CPNP) Maternal health (non-CPNP) Breastfeeding rates/ duration (non-CPNP)
		Canadian Perinatal Surveillance System (including aboriginal people)	National rates
		Surveys of Aboriginal people Statistics Canada, Health Reports	Program overlap
	2. Does the CPNP duplicate other Federal programs inside or outside Health Canada?	IPQ[132] project reports rollups	Program overlap
	3. How and to what extent does the CPNP complement or expand upon other prenatal programs addressing the same issue at the provincial, municipal and community levels?	IPQ project reports rollups	Sustainability/Community Ownership
	4. Is the CPNP still the appropriate type of intervention? Should the federal government continue to be involved or could equally satisfactory results be delivered by another level of government and/or the private or voluntary sector?	IPQ project reports rollups	

[130]Canadian Institute of Child Health

[131]National Longitudinal Survey of Children and Youth

[132]The Individual Project Questionnaire (IPQ) collects project-related information on an annual basis.

Evaluation Objectives	Evaluation Questions	Information Source	Program Indicators
2. IMPLEMENTATION PROCESS			
2.1 To determine if the CPNP reached its target groups	**1. Has the CPNP reached the intended target groups (including First Nations and Inuit)? If not, why not?**	IPQ project reports rollups	Target population
	2. What have the participation rates been?	IPQ project reports rollups	Target population
	3 Are changes in target groups needed?		Program completion/ cooperation
2.2 To determine if the CPNP increased accessibility of services	**1. Has the CPNP increased the accessibility of services for mothers and babies who are:**	IPQ project reports rollups	Target population
	a) Less adequately served physically (e.g., high density urban areas, isolated rural/northern areas)	IPQ, ICQ[133] projects reports rollups	Target Population Client Utilization of Project Services
	b) Less adequately served culturally	IPQ, ICQ projects reports rollups	Target Population Client Utilization of Project Services
2.3 To determine if the CPNP provided appropriate program management	**1. Were appropriate systems or mechanisms established to coordinate, monitor and evaluate Program activities?**	Document Review Interviews, Senior Staff Stakeholder Focus Groups	Level of collaboration Incidence of crisis management Stakeholder satisfaction Evaluation products (quality, appropriateness)
	2. What were the strengths and weaknesses of the approach used for Program implementation?	Interviews, Senior Staff Stakeholder Focus Groups Unobtrusive/Emergent Measures	Emergent

[133]The Individual Client Questionnaire (ICQ) is used to track progress of each CPNP participant during her stay in the project.

Evaluation Objectives	Evaluation Questions	Information Source	Program Indicators
2.4 To determine the nature of partnerships which were developed by CPNP projects	**1. What evidence is there that the projects have developed partnerships and cooperative relationships with other organizations (public or private), groups or individuals within their community?**	IPQ projects reports rollups	Partnerships
	2. Did CPNP increase the support by the community regarding the needs, interests and rights of at-risk mothers and infants?	IPQ projects reports rollups	Spin-offs Collaboration
3.0 PROGRAM SUCCESS			
3.1 To determine the impact of the CPNP on pregnancy outcomes	**1. What evidence is there that the projects supported by the CPNP have had the desired effect on pregnancy outcomes, including:**	Baseline Study	Birth weight rates in CPNP communities vs non CPNP communities
	a) Birth weight	IPQ	Birth weight rates
	b) Infant health	ICQ	Infant outcomes
	c) Maternal health	ICQ	Maternal outcomes
	d) Breastfeeding	IPQ	Breastfeeding rates/duration
3.2 To determine the effectiveness of various types of CPNP projects and activities	**1. Which types of projects and project activities were more effective in improving pregnancy outcomes?**	IPQ/ICQ projects reports rollups Case studies	Statistical analysis: Project type by outcomes Project activity by outcomes
	2. What lessons can be learned from these projects?	Case studies IPQ	Emergent from site visits Anecdotal information Emergent from site visits

Evaluation Objectives	Evaluation Questions	Information Source	Program Indicators
4. COST EFFECTIVENESS			
4.1 To determine if the CPNP is cost effective.	**1. What would the costs have been without the CPNP?**	Literature review Case studies	Cost per LBW baby x # LBW babies in Canada (96-2000)
	2. Are there other cost-effective ways of delivering the local programs/projects?	Baseline study/Literature Review IPQ	LBW comparisons (CPNP/ non-CPNP communities) cost benefit analysis