EVALUATION OF BEST START:

FINAL PROCESS AND OUTCOME ANALYSIS REPORT

Prepared for:
National Crime Prevention Centre

Submitted by:
Canadian Research Institute for Law and the Family*

Joseph P. Hornick, Ph.D.
Brenda Bradford, B.A.
Lorne D. Bertrand, Ph.D.
Michael Boyes, Ph.D.

March 2006

*Canadian Research Institute for Law and the Family
One Executive Place
Suite 510, 1816 Crowchild Trail, N.W.
Calgary, Alberta
T2M 3Y7

DEDICATION

This report is dedicated to all of the families that shared their lives with us so we could learn more about supporting families and enhancing the life chances of children.

TABLE OF CONTENTS

Appendix A: Supporting Tables

LIST OF TABLES AND FIGURES

EXECUTIVE SUMMARY

Purpose of the Report

The purpose of this report is to present results from the comprehensive evaluation of the province-wide Best Start Healthy Families program focussing on the period December 2001 to December 2004. More specifically, this report has two major objectives as follows:

1. To present a process analysis, which documents the implementation of the program, including program inputs, activities, and outputs.

2. To present an outcome analysis of the program to determine effectiveness based on the following:

    • short-term outcome data from a set of standardized instruments (child 0 to 3 years old);

    • long-term outcome data from a set of standardized instruments (child 3 to 6 years old);

    • a survey of Best Start clients experiences and views of the home visitation program;

    • involvement with Child Welfare services; and

    • utilization of health care services.

Research Design

To accomplish these objectives, both a process analysis and outcome evaluation based on a program logic model study were conducted.

A pre-test multi-post-test quasi-experimental design was chosen to determine the effectiveness of the program. Pre-testing of families began after the first home visit and continued for the duration of the study or until families had withdrawn or finished the program (when the target child was three years old). Several comparison groups were constructed to maximize the rigor of the quasi-experimental design within the context and limitations of this evaluation. Understanding the equity and dissimilarities between these comparison groups on risk factors at the pre-program stage facilitates analysis and interpretation of the findings in a manner that can account for the dissimilarities and maximizes control on the threats to internal validity including history, maturation, statistical regression, selection, and to a lesser degree mortality.

Several databases were used in this evaluation including:

- Data on pre-program risk factors (Record Screen) and families assessments (Family Stress Checklist) collected by the Public Health nurses.

- Data regarding file information and scores on standardized instruments collected by home visitors and research staff and stored on the Management Information System (MIS).

- Child Welfare involvement data retrieved by a review of Child Welfare files.

- Health care utilization data were retrieved in aggregate form from the provincial information system.

Conclusions: Process Analysis

The first major objective of this study was to conduct a process analysis, which documents the implementation of the program, including program inputs, activities, and outputs. The key question for the process analysis is whether the program was implemented as proposed.

Despite an initial delay in the implementation of the province-wide Best Start program due to an extension of negotiations concerning funding, and the subsequent freeze in funding that necessitated limiting the program to families with children under 18 months old, the program has made considerable progress and has been successfully implemented. All components of the original Healthy Families model are being used and there is considerable consistency between the Charlottetown program and the other Best Start sites both in terms of the services offered and the demographic profiles and risk levels of the clients being served. Finally, the projected number of clients to be served has been reached.

Successful implementation was due to a number of circumstances including the following:

- The Best Start program adopted a well developed model for home visitation, i.e., Healthy Families, and tailored the program for families at risk in PEI. However, we do not know how limiting the program to families with children under 18 months old may reduce the effectiveness of the program.

- The Public Health Nurses in PEI have been highly committed to the Best Start program and helped to achieve universal screening and consistent assessments of families.

- All of the Family Resource Centres have recognized the importance of this primary prevention program and have entered into partnership with Best Start in implementing the program province-wide.

- The Best Start program has attracted support not only from the host agencies but also from both government and community agencies. Further, the secondment of the Provincial Coordinator of Best Start from Queens Health Region has helped to fast track the implementation.

- Capacity building in the community has occurred on many levels, e.g., the Public Health Nurses who do the risk screening and assessments; the Best Start supervisors and workers; and the families who benefit from the support and resources of the Best Start program.

- The development and implementation of an on-line MIS, as well as the development of the Best Start Core Content, have provided the supervisors and Best Start workers with new skills and an understanding of how useful these skills are.

All of those involved in the implementation of the province-wide Best Start program should feel proud that so much has been accomplished in such a limited time frame. Overall, the implementation of the Best Start program province-wide serves as a model for how community-based, multi-partnership programs that target and serve at-risk families should be conducted.

Conclusions: Outcomes

The second major objective of this study was to conduct an outcome analysis of the Best Start Program to determine effectiveness based on:

- short-term outcomes;
- long-term outcomes;
- a satisfaction survey of clients;
- involvement with Child Welfare; and
- utilization of health care services.

<u>Short-term Outcomes</u>

Short-term outcome analysis measured the improvement of the clients in comparison with a low risk Non-participant Comparison Group during their first year of involvement with the program using a number of standardized instruments.

Improvements for the Best Start clients were noted in two of the four areas, i.e., knowledge of child development (CDI) and the accurate perception by the parents of the child's temperament (Carey). In the other two areas, i.e., family functioning and social support, there was no difference at post-test.

It is important to note we were limited to just two test periods at a 12-month interval since this was the maximum time for follow up with the Non-participant Comparison Group. It is possible, particularly with family functioning, that it takes longer than 12 months to achieve significant positive change. Previous research (Gomes et al., 2005) suggests that family functioning (measured by the FAD) increased the most in the second year of the

Edmonton Home Visitation Program. Interestingly, knowledge of child development in the Edmonton study increased the most in the first year.

Long-term Outcomes

Long-term outcome analysis measured how Best Start clients who completed the program at 36 months compared to the Summerside Comparison Group. Further, both of these groups were also tested 12 months later to identify whether completed clients declined after leaving the program.

Generally, the findings regarding long-term outcomes were positive although not statistically significant – most likely due to the small number of cases in the two groups analyzed. Parents' adjustment (PSOC) at Time 1 was higher for the Completed Program Group as predicted and over time it increased slightly overall. Social contact (SNI) was also higher for the Completed Program Group at Time 1. Both groups, however, decreased slightly over time. In terms of use of community resources (CCRT), at Time 1 the Completed Program Group reported higher involvement with health, education and spiritual/cultural resources whereas the Summerside Comparison Group reported higher contact regarding basic needs, child care, family/parent support and recreation. Over time the Completed Program Group increased the use of resources, especially child care, while the Summerside Comparison Group tended to decrease contact with the exception of education.

Stress in the family was high for both groups, especially in the areas of financial, career, and home issues. Further, these did not decrease significantly over time. Finally, the behaviour profiles of the children from the two groups were both "normal" although the Summerside Comparison Group had slightly higher scores on the "withdrawn" and "somatic problems" scales at Time 1.

Satisfaction of Clients

The satisfaction of clients was measured by the parent survey, which was administered to a sample of active clients in the program more than 12 months.

Overall, the respondents were very positive about the program indicating that it helped them "very much," particularly in dealing with the baby's difficult temperament. Most clients (approximately 90%) felt that the program helped "somewhat" or "very much" with their ability to deal with stress and problem solving. Further, they highly valued the relationship with the home visitors.

Involvement with Child Welfare

Since the beginning of the first pilot study (Elnitsky et al., 2003), the overall involvement of Best Start clients with Child Welfare increased significantly from 5% at November 2001 to 20% at December 2004. This increase is most likely due to the following two factors: (1) the larger number of older children in the current study; and (2) the program focus has evolved and the program is now working much more closely with Child Welfare and it is less likely than before that families would be excluded from the

program because of Child Welfare involvement. The increased involvement in comparison with the earlier study is both an expected and positive finding since it indicates that the program workers are working closely with Child Welfare in accurately identifying children in need of protection and monitoring these cases over time even though a formal policy and protocol have not been adopted. Interestingly, the percentage of Best Start clients involved with Child Welfare is comparable to the Edmonton programs, which reported 31% involvement for a similar time period (Gomes et al., 2005).

Further, in terms of overall involvement with Child Welfare, it should be noted that of the initial 190 investigations only 66 cases were founded – in need of protection and those resulted in only 14 placements, 3 of which were the result of an apprehension. Domestic violence is now the primary reason for investigations and it appears that the Best Start workers' training regarding domestic violence is helping them to identify risk situations.

Two comparative analyses were conducted to identify the effect of the Best Start program on the frequency and nature of intervention by Child Welfare services. First, a comparative analysis was conducted using a sub-sample of Best Start clients whose children were born during the same time period as the Non-participant Comparison Group. The Non-participant Comparison Group, however, was at significantly lower risk group at pre-program than the Best Start clients making comparison between the groups difficult to interpret.

The findings for the comparison between the Best Start Program Group and the Non-participant Comparison Group clearly indicate that as expected given the risk level of this group there were higher rates of reporting of child maltreatment. More importantly, the findings also indicated a greater range and detail regarding the reports and higher levels of validation after completion of the investigation.

The effect of the Best Start Program on Child Welfare involvement was also tested by comparing the Completed Program Group with the Summerside Comparison Group. These groups had children between four to six years old and both had high risk profiles at the pre-program stage with the Completed Program Group being somewhat higher risk than the Summerside Comparison Group. Overall, the differences between the two groups at December 2004 were very significant. The Summerside Comparison Group involvement with Child Welfare was almost double the Completed Program Group's involvement (58% compared to 31%). Rates of founded – in need of protection were comparable (31% and 33%); however, voluntary service agreements were the most common action for both groups.

Utilization of Health Care

At the time of the birth of the child, the Best Start Program Group mothers were clearly at higher risk than the General Population. The mothers were younger, had more previous pregnancies, tended to smoke and drink during the pregnancy, over 10% used street drugs, and they gave birth to smaller babies. Despite the fact that these mothers and infants were at higher risk at birth, their utilization of health care, including emergency room visits, hospitalizations, visits to family physicians for health promotion, and average number

of specialist visits were very similar to the General Population – moreso than any of the other study groups.

Since there is no direct measure of appropriate utilization of health care research, we assume the General Population utilization is "average." This being the case, the Non-participant Comparison Group appears to underutilize services. In contrast, the Completed Program Group and the Summerside Comparison Group appear to have much higher health care utilization.

The best test of the effectiveness of the Best Start Program in achieving appropriate utilization of health care resources is the comparison between the Completed Program Group and the Summerside Comparison Group – both "high" users as noted above. First, it is interesting to note that the Summerside Comparison Group generally used more health services than the Completed Program Group – with the exception of hospitalization where a referring physician would make the decision about utilization. The biggest difference was the use of emergency room service, which may indicate an inappropriate use of services.

Overall Conclusions

Objective #1: Process Analysis

The process analysis contained in this report clearly documents the successful implementation of the province-wide Best Start program.

Objective #2: Outcome Analysis

The outcome analysis contained in this report leads us to the following conclusions regarding the outcomes/impacts of the Best Start program listed in the Logic Model (see Table 3.1).

Short-term Outcomes

- The program was successful at increasing the parents' knowledge of child development and increasing the accurate perception of child temperament.

- The program was not successful at increasing family functioning or parents' use of social support within the limited timeframe.

Long-term Outcomes

- The program was successful at increasing: (1) long-term satisfaction and competency of the parent; (2) parents' ability to build positive long-term social support systems; and (3) parents' ability to deal with stress.

- There is no evidence that the children of those who completed the program were better adjusted than the comparison group children since both groups were normal.

- The program was successful at increasing the accuracy of reporting and early identification of child maltreatment. To a lesser extent, the program also appears to be successful at decreasing the need for more intrusive intervention by Child Welfare services.

- The program was successful at increasing the appropriate use of health care services.

Overall, the above findings and conclusions are very encouraging. While some of the differences between those who received the program and those who did not were not statistically significant, the pattern of findings over the various measures of outcomes were consistent particularly Child Welfare and health care utilization. Those who received the program performed better than those who did not.

The magnitude of these findings should be viewed within the context of the calls in prior research that we "should maintain modest realistic expectation for home visiting services" (Gomby et al., 1999, p. 23). Compared to other evaluations, the Best Start program has performed well. Further, it should be noted that the findings of this evaluation are quite consistent with the previous research. Gomby (2003), in a review of meta-analyses focusing on the effectiveness about home visitation concluded:

> Effects are most consistent for outcomes related to parenting, including the prevention of child abuse and neglect (depending upon how child maltreatment is measured). Home visiting programs do not generate consistent benefits in child development or in improving the course of mothers' lives. Families in which children have obvious risk factors (e.g., they are biologically at-risk, developmentally delayed, or they already have behavior problems) appear to benefit most. Some studies also suggest that the highest-risk mothers (e.g., low income teen mothers; mothers with poor coping skills, low IQs, and mental health problems) may benefit most, but probably only if the program offers services tailored to address the needs of the mothers. (Gomby, 2003, p. 31.)

Recommendations

There are several recommendations that follow from the findings and conclusions of this evaluation. They are listed below.

<u>Best Start Program</u>

1. As suggested by the research literature as well as the findings of this evaluation, the program should focus on fewer, more specific outcomes/goals that they wish to accomplish. The program's activities then should be matched to these outcomes (see Landsverk, 2002, p. 51; Gomby, 2003).

2. The significant presence of domestic violence as a reason for referral to Child Welfare suggests that the workers are well trained in the recognition of it. However, strategies which go beyond the Best Start program should be developed to ensure that domestic violence is properly dealt with. While it is a good sign that it is being identified, the scope and impact of domestic violence goes beyond the mandate of a volunteer primary prevention program such as Best Start.

3. The program should review the standardized instruments currently being used to collect data from clients to ensure that they are useful to the program and measure obtainable outcomes. The results of this study clearly support the continued use of the Child Development Inventory (CDI) and the Carey Infant Temperament Questionnaire.

4. The program should continue to expand the use of goal plans and these should be clearly documented on the MIS.

5. Based on the findings that those clients who completed the 36-month program were very high risk and continued to experience high levels of stress, as well as the fact that the positive results of this report are based on the 36-month program, if at all possible, the program should consider returning to a 36-month program.

6. The program should develop a strategy for conducting exit interviews with those who leave the program prior to completion.

Research

1. High attrition rates have been a significant issue for all Healthy Families programs yet little is known about why families drop out and what their needs are. Research should be conducted to find out more about these families, possibly through detailed exit interviews.

2. Future evaluations of Healthy Families programs should develop strategies for including measures of individual family goal attainment as part of the outcome analysis, as well as direct observational measures of child-parent relationships.

3. Future research should assess longer-term outcomes for children such as school readiness, involvement with Child Welfare, and delinquent behaviour.

ACKNOWLEDGEMENTS

1.0 INTRODUCTION

1.1 Background to the Best Start (Healthy Families) Program

Over the past several years Healthy Families programs, based on the research, knowledge, and experience of the Hawaii Healthy Start programs, has been implemented in numerous states in the United States. The Healthy Start program promotes positive parenting and child health and development, thereby preventing child abuse and other poor childhood outcomes. In Canada, some of these early prevention programs have been implemented. However, there is little research that documents how well these programs work in the Canadian context.

In 1999, the National Crime Prevention Centre (NCPC) of the Department of Justice Canada decided to fund a number of Healthy Families projects across Canada through the Crime Prevention Investment Fund, which is the research and development component of the National Strategy. The three projects that received funding under the Investment Fund included:

- Best Start, sponsored by C.H.A.N.C.E.S. Family Resource Centre, Charlottetown, Prince Edward Island;

- Kwanlin Dun Healthy Families Program, sponsored by the Kwanlin Dun First Nation, Whitehorse, Yukon; and

- a Healthy Families program sponsored by Success By 6® Edmonton, Alberta in three agencies: Norwood Child and Family Resource Centre; Bent Arrow Traditional Healing Society; and Terra Association.

In April of 1999, the Canadian Research Institute for Law and the Family (CRILF) began a comprehensive evaluation of these programs involving a process and outcome analysis. The results of the three-year evaluation are contained in the report entitled *Evaluation of Healthy Families Programs in Selected Sites Across Canada* (Elnitsky et al., 2003).

Overall, the findings regarding the effectiveness of the Healthy Families programs presented in the Elnitsky report lead to the conclusion that the programs were successful at achieving some but not necessarily all of their stated objectives. The detail and quality of the data from Child Welfare services especially provided significant support for the effectiveness of the Edmonton and PEI Best Start programs.

Further, the report states that our experiences in evaluating these programs left us with the impression that the programs had provided the skills and support necessary for their clients to cope with the crises of everyday life and had, as well, helped the clients achieve goals that we were not able to clearly document. In part this was due to the heterogeneous nature of the clients and their unique needs. However, it may also be due in part to the fact that the complexity of what these programs do is not easily evaluated.

Interestingly, as we expanded the evaluation design, we were able to further document outcomes achieved by the programs.

The three-year pilot Best Start program, which ended March 31, 2002, provided early screening, assessment, and in-home visiting support to newborn infants and their families in Queens Region of Prince Edward Island. In March 2002, a proposal was submitted to the PEI Department of Health and Social Services and the NCPC for the expansion of the program province-wide (see: *Building on Success: Best Start Program PEI*, March 25, 2002). The program was funded, and the strategy for expansion involved hiring and placing Best Start workers with six family resource centres across PEI. These centres are located in existing health regions that form a provincial community-based network which can support a province-wide program.

In the fall of 2002, CRILF, funded by a contribution agreement with NCPC, began the evaluation of Building on Success: Best Start. This current evaluation of the expanded program builds on the three-year demonstration project also funded by NCPC that began in 1999 and was completed March 2002. As a condition of the agreement with NCPC, CRILF contributed the services of the data analysts, and the Best Start program contributed the resources of the home visitors for collecting and inputting data for the standardized instruments.

1.2   Evaluation Framework

As part of this federal-provincial initiative, CRILF in consultation with representatives of C.H.A.N.C.E.S., the other family resource centres involved in the expansion, the PEI Department of Health and Social Services, and NCPC prepared a framework for the continuation and expansion of the evaluation of the Best Start province-wide program. This framework is based on the following conditions:

- Previous Research: This framework has been developed from the previous three-year evaluation of C.H.A.N.C.E.S. Best Start program (see: *Evaluation of Healthy Families Programs in Selected Sites Across Canada*, 2003).

- Provincial Framework: Discussions were held with provincial representatives to ensure that the evaluation was consistent with the needs of the province as outlined in their logic model and evaluation framework (May, 2002). More specifically, this framework for evaluation deals with the following relevant primary questions from the provincial framework:

  1.   Were Best Start outcomes as expected?

  2.   Was Best Start a cost-efficient program?

  3.   Are the gains achieved as a result of participation in the Best Start program sustainable over time?

  4.   Is the PEI model transferable and generalizable to other settings?

- <u>Capacity Building</u>: The long-term strategy for this evaluation is to build the capacity within the program at all six sites across the province to monitor and assess their own services through the use of a comprehensive computerized client file Management Information System (MIS), which in turn helps the program build the capacity for public health and wellness.

1.3 Overall Goals of the Evaluation

Given the history and conditions set out above, the overall goals and objectives of the evaluation framework are as follows:

1. To continue the process and outcome analysis study of C.H.A.N.C.E.S. Best Start program:

   - monitor program development;
   - measure program effectiveness; and
   - identify cost/benefit of the program.

2. To identify whether the program has been implemented as planned in the five new sites.

3. To determine whether the program in all sites is meeting families' needs, enhancing strengths, and promoting healthy child development through a monitoring evaluation framework.

4. To provide the program with a computerized client file Management Information System (MIS) to support the program in management supervision, as well as client monitoring, thus providing for ongoing monitoring evaluation.

5. To document the building of capacity at various levels including the child, parents, family, community, and public health system.

It should be noted that the task of conducting a cost/benefit analysis of the Best Start program was separately contracted by the NCPC with an economist, Richard Kerr. The findings of this analysis are contained in a report entitled, *The Best Start Home Visiting Program Pilot Project: An Analysis of Performance, Cost and Benefits* authored by Richard Kerr (2005).

1.4 Purpose of this Report

The purpose of this report is to present results from the comprehensive evaluation of the province-wide Best Start program. More specifically, this report has two major objectives as follows:

1. To present a process analysis, which documents the implementation of the program, including program inputs, activities, and outputs.

2.	To present an outcome analysis of the program to determine effectiveness based on the following:

- short-term outcome data from a set of standardized instruments (child 0 to 3 years old);

- long-term outcome data from a set of standardized instruments (child 3 to 6 years old);

- a survey of Best Start clients' experiences and views of the home visitation program;

- involvement with Child Welfare services; and

- utilization of health care services.

To accomplish these objectives both a process analysis and outcome evaluation study were conducted. The logic model for this comprehensive evaluation is presented in the next chapter of this report.

## 1.5	Definition of Program Terms

Because there is some variation in the terminology used in this report, definitions for some of the key terms are provided below.

Program Sites: The Best Start, C.H.A.N.C.E.S. program was originally offered only in Charlottetown. Now the program is offered in five additional locations through partnerships with other agencies. Table 1.1 contains a list of agencies, communities, and public health regions where Best Start workers are located.

TABLE 1.1
Best Start Program Sites

Agency	Community	Public Health Region	Total Population[1]
C.H.A.N.C.E.S. Family Resource Centre	Charlottetown	Queens	66,856
Kids R First Family Resource Centre	Summerside	East Prince	32,827
Kids West Family Resource Centre	Alberton	West Prince	14,261
Carousel Family Resource Centre	Montague	Southern Kings	14,164
Main Street Family Resource Centre[2]	Souris	Eastern Kings	7,186
Coalition Actions Pour Enfant (Cap Enfant)[3]	Wellington	East Prince[4]	n/a

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Census population statistics by health region for 2001. Total population for PEI: 135,294.

[2] Formerly called Lend a Hand Family Centre.

[3] Province-wide mandate.

[4] See East Prince above.

Public Health Regions: Since Public Health Nurses (PHN) are responsible for the first two components of the Best Start program (i.e., the record screen checklist and the risk assessment), public health regions are also used in parts of this report to identify where program activity occurred.

Best Start Workers: Best Start workers are responsible for the direct delivery of the Best Start program including home visits.

1.6   Limitations of the Report

Readers of this report should be aware of a number of limitations. An understanding of these limitations will help to put the findings of the report into context. These limitations are discussed below.

1.6.1   Limitations: Inherent Nature of the Program

There are a number of limitations which result directly from the nature of the Healthy Families home visitation program. These are summarized below.

- Volunteerism: Enrollment and participation in all Healthy Families programs is voluntary, by definition. Only approximately 50% of those who qualify for the programs actually become involved in the programs. Very little is known about the similarities or differences between those who accept involvement with the programs, and those who choose not to participate in the programs. Thus, self selection could be a threat to internal validity.

- Heterogeneity: Healthy Families home visitation programs (as primary prevention programs) serve a broad range of clients. These clients are a very heterogeneous group, as was documented by the Elnitsky et al. (2003) report. Even though these client families were assessed as "families at risk," the specific strengths and weaknesses of the individual families were unique. This makes these families both difficult to provide services to and difficult to evaluate. Further, because of the unique needs of these families, the specific program goals and activities differ significantly from family to family. In addition, the number of home visits received by the families (i.e., dosage) was determined more by the families than by the program.

- Attrition/Dropouts: Attrition or dropout rates for Healthy Families programs are known to be high. They usually range from 20 to 50% for the first year of involvement with the program. Few of the participants actually complete the program. Thus, attrition could be a threat to internal validity.

1.6.2   Limitations: Conditions of the Funding Contract

In addition to the inherent limitations due to the nature of the program itself, conditions of the funding agreement also affected the type of evaluation design that was developed.

- Conditions on Funding: Funding for both the evaluation and the program were limited and required "contributions" by the recipients. In the case of the evaluators, we provided a data analyst at no cost. In the case of the program, the home visitors collected data for the evaluation.

- Universality of the Program: Conditions of the funding also involved implementation of the program province-wide. Thus, the opportunity for a "no treatment group" was limited to those who qualified for, but chose not to be involved in the program (i.e., Non-participant Comparison Group).

- Capacity Building: Conditions of the funding also required that CRILF capacity build with the program. This involved CRILF working very closely with the program managers and the home visitors to develop a Management Information System (MIS). Our role in this component of the project was a formative evaluation role.

1.6.3 Limitations: Methodological

The limitations and conditions outlined above affected a number of methodological issues which are outlined below.

- Lack of Control Over Data Collection: As indicated above, conditions of funding required that the program workers, Public Health nurses, and Child Welfare workers were to collect the data for the evaluation. The effect of this loss of control was minimized by training and monitoring the quality of the data.

- Multiple Databases: In addition to the process analysis data analyzed in this report, there are four other sets of quantitative data analyzed. These include the following:

  − Public Health data generated by the PHN who administered the record screens, the Family Stress Checklist (FSC) assessments, and made referrals to the Best Start programs.

  − An Access-based MIS for clients at the Charlottetown site containing file information and scores on the standardized instruments for all clients in the program. This was based on the CRILF research data file, since data for the pilot study (Elnitsky et al., 2003) were originally collected by hard copy. On-line client file MIS for clients at all sites other than Charlottetown, containing file information and scores on the standardized instruments for the period of February 2003 to November 30, 2004, which reflects when the program was expanded province-wide. Recently the Access-based MIS and the on-line MIS were merged and the on-line MIS now contains information on all clients from the beginning of the program.

  − Child Welfare involvement data retrieved by a review of Child Welfare files. These data did not include individual identifying information and thus could not be linked to other databases.

- – Health care utilization data were retrieved in aggregate form from the provincial information system.

Using different data sets can sometimes result in small variations in the total "Ns" due to a number of factors including clients moving from one location to another, dropping out and then returning to the program, failure to complete all items on an instrument, and different timeframes for clients over time. In addition, the timing of administration of the standardized instruments in the longitudinal analysis varies slightly by client and those clients leaving the program prior to 12 months would not be administered the T2 instruments. Finally, given the form of the Child Welfare and Health data, links with other data were not possible.

- Small Number of Cases: it should be noted that the number of cases that completed the program during the evaluation timeframe was small. Further, the Summerside Comparison Group was small due to the relatively small population of the area and the limits on resources to follow the comparison group. The small numbers make it difficult to obtain statistical significance in analyzing scores over time.

- Limited Time Period for Short-term Effects: the time period for the pre-test/post-test on the short-term outcomes was only 12 months due to the timing of the recruitment of the comparison groups. Thus, it is possible that "full program effects" at 36 months when the program was completed were missed.

- Length of Program: It should be noted that the findings of this report are mainly relevant to the evaluation of Best Start programs as a 36-month program since the 18 month limit was implemented October 2004 and data collection for the evaluation concluded November 2004.

- The Use of a Quasi-experimental Design: Given the restrictions and limitations discussed above, a pre-test multi-post-test quasi-experimental design was chosen to determine the effectiveness of the program. Pre-testing of families began after the first home visit and continued for the duration of the study or until families had withdrawn or finished the program (when the target child was three years old).[1] Several comparison groups were constructed to maximize the rigor of the quasi-experimental design within the context and limitations of this evaluation. Understanding the equity and dissimilarities between these comparison groups on risk factors at the pre-program stage facilitates analysis and interpretation of the findings in a manner that can account for the dissimilarities and maximizes control on the threats to internal validity including history, maturation, statistical regression, selection, and to a lesser degree, attrition.

- Statistical "Washout" due to Heterogeneity: The previous evaluation of Best Start (Elnitsky et al., 2003) indicated that client families who received the Healthy Families programs were a very heterogeneous group. Even though these client families were assessed as "families at risk," the specific strengths and weaknesses of the

---

[1] Please note this was changed to target child reaching 18 months of age as of October 2004.

individual families were unique and only a few characteristics were commonly shared, i.e., most clients were young, single, poorly educated, and had children with difficult temperaments. This makes these families both difficult to serve and difficult to evaluate. In terms of the standardized instruments many of the clients were in the normal range on specific scales and thus, change would not be expected. When analysis of group means was conducted, differences from Time 1 to Time 2 "washed out" due to the broad range of scores.

The standardized measures were first administered to clients early in the program (most within the first three months) to provide a detailed picture of the clients' needs. This picture indicated that few clients shared the same pattern of needs. Thus, since all instruments were standardized and "normed" on large samples from the general population, it was possible to determine cut off scores or predetermined boundaries for each instrument which distinguished between those clients who "needed to improve" on any specific scale from those who were in the normal range and had no need to improve.

Given that the current sample of Best Start clients is relatively large, we were able to dichotomize the sample for each instrument by those clients who needed to improve and compared them with those who did not need to improve and identified what change occurred over time. This approach was employed for analyzing the standardized outcome instruments when possible. This procedure may well increase regression to the mean, which could be a threat to internal validity. However, this limitation can be minimized in quasi-experimental designs by careful interpretation of the comparison group changes over time.

1.7   Organization of the Report

Chapter 2.0 contains a brief review of the literature, which provides a context for the Best Start evaluation. Chapter 3.0 of this report contains a detailed outline of the evaluation strategy and design. Chapter 4.0 describes the general Healthy Families model and presents the basic elements of the Best Start program. Chapter 5.0 discusses the implementation of the program in terms of program inputs, including funding, operational structure, staff, training, and partnerships. Chapter 6.0 documents the core program activities. Chapter 7.0 provides information regarding outputs; specifically, the number of new cases opened as of November 30, 2004, as well as profiles of clients served. Chapter 8.0 contains an analysis of the short-term standardized outcome measures. Chapter 9.0 contains outcome results after the program was completed, and Chapter 10.0 documents Best Start clients' satisfaction. Chapter 11.0 contains an analysis of Child Welfare involvement and Chapter 12.0 contains an analysis of health care utilization. Chapter 13.0 summarizes the findings relevant to the specific research objectives.

2.0   LITERATURE REVIEW: RECENT EVALUATIONS OF HEALTHY FAMILIES PROGRAMS

This chapter contains a literature review which summarizes the results of recent outcome evaluations and cost analyses of Healthy Families programs. The review is selective and is not meant to be a comprehensive technical meta-analysis of home visitation programs. The objective of this review is to provide a context for the current evaluation of the Best Start program.

It is important to point out that the Best Start program is based on the Hawaii Healthy Families and more recently Healthy Families America models of home visitation. The Healthy Families program model is a relatively recent addition to a broadening range of home visitation programs. Historically, home visitation programs varied considerably in context, content, dosage levels, and target groups, as well as who conducted home visits (e.g., nurses, social workers, preschool teachers, psychologists, or paraprofessionals). The common core of home visitation programs has been a visitor who visits the parent and child in their home and provides information and/or emotional support. Historically, home visitation was often just one component of a more comprehensive program.

The more recent Healthy Families programs, while usually included as a subset of home visitation programs, are distinct and unique for a number of reasons:

- Home visits are the core activity;

- Home visitors are specially trained paraprofessionals;

- Client participation is voluntary;

- Healthy Families programs have a broad range of outcomes related to the parent/family, child and community; and

- Healthy Families America programs are guided by a set of 12 critical elements which control initiation of services, service content, and selection and training of service providers (see Healthy Families America, 1998 and Chapter 4.0 of this report).

2.1   Early Evaluations of Home Visitation

As suggested above, evaluations of Healthy Families programs are relatively recent. While the Hawaii Healthy Start program was first implemented in 1975, the first three-year pilot evaluation was not begun until July 1985. This evaluation was severely limited by the lack of a control/comparison group, the short period of follow up, and reliance on the Family Stress Checklist as an outcome measure (the instrument used for the initial assessment of clients). Further, the results of the pilot study regarding the low numbers of reports of child abuse in comparison with other evaluations of home visitation programs were given too much weight (Duggan et al., 1999, p. 69). The evaluation of these Hawaii programs was expanded after the initial evaluation and is discussed below (see Duggan et al., 2004).

Because of the lack of early evaluations of Healthy Families programs, it is useful to look at the evaluations of a broader range of home visitation programs (although these may not be directly generalizable to the Best Start program).

Larry Sherman (1997) provides us with a rigorous summary review of 18 different evaluations of programs that included a home visitation component (seven of these used paraprofessionals similar to the Healthy Families model). This review was part of a congressionally-mandated report to Attorney General Janet Reno entitled *Preventing Crime: What Works, What Doesn't, What's Promising*. The preparation of this report involved having only evaluations that achieved "rigorous and scientifically recognized standards and methodologies" (Sherman, 1999, p. 2).

Regarding the 18 studies reviewed, Sherman concludes:

Perhaps the most promising results in all areas of crime prevention [in the family] are found in the evaluations of home visitation programs. While these programs are often combined with other institutional elements, such as preschool, there is a large and almost uniformly positive body of findings on this practice.

While the two long-term experiments both included preschool programs (also called "day care" in some studies), positive effects were found in 11 of the experiments from home visitation without preschool. Some of the home visitations included doctor's office visits or some other contexts for instruction and observation outside the home, but most did not. None of the five experiments showing that home visitation reduced child abuse included involvement in preschool.

The consistent finding of beneficial effects of home visits without preschool is important for several reasons. One reason is theoretical: it shows that the visits are not simply a spurious correlate of the effects of preschool programs on both the children and their mothers, who in some studies are heavily involved in the preschool programs and who show beneficial effects themselves in reduced welfare support and longer time between pregnancies. (Sherman, 1999, p. 10-11.)

Findings specific to the seven programs involving paraprofessionals as home visitors indicated that these programs obtained the following outcomes: lower child abuse, lower child's anti-social behaviour, increased child's cognitive scores, made mothers more responsive and attached to infants, and fewer arrests of child at 15 years old.

Sherman (1999, p. 21) concluded:

- Long-term frequent home visits combined with preschool prevents later delinquency; and

- Infant weekly home visits reduce child abuse and injury.

10

2.2 The Future of Children: Special Journal

In 1999, *The Future of Children – Home Visiting: Recent Program Evaluations* (Behrman, 1999) was published by the David and Lucile Packard Foundation. This comprehensive special edition of the journal summarized the results of six key home visiting models including:

- Hawaii's Health Start, which serves families identified through screening at birth as highly stressed and/or at risk for child abuse;

- Healthy Families America (HFA), a child abuse prevention program that evolved from Hawaii's Healthy Start and which is now the subject of a pioneering, multi-site research network;

- The Nurse Home Visitation Program (NHVP), a university-based demonstration program developed in Elmira, New York, studied again in Memphis, Tennessee, and Denver, Colorado, and now being replicated nationally;

- Parents as Teachers (PAT), a program that promotes the development of children from birth to age 3 that began in Missouri and now operates at more than 2,000 sites across the country;

- The Home Instruction Program for Preschool Youngsters (HIPPY), which seeks to prepare 3- to 5-year-olds for kindergarten and first grade; and

- The Comprehensive Child Development Program (CCDP), a five-year federal demonstration program that worked with poor families in 24 sites to promote children's development, parents' ability to parent, and family self-sufficiency.

Results

- Results varied widely across program models, across program sites implementing the same models, and across families at a single program site.

- Several home visiting models produced some benefits in parenting or in the prevention of child abuse and neglect on at least some measures. No model produced large or consistent benefits in child development or in the rates of health-related behaviors such as acquiring immunizations or well-baby check-ups.

- In most cases, research has not identified the key elements that would predict which families will benefit from a home visiting model or which program sites will succeed.

- Most programs struggled both to implement services as intended by their program models and to engage families. Families received about half the number of visits intended, and between 20% and 67% of enrolled families left the evaluated programs before services were scheduled to end. Staff skills, training, and turnover and the extent to which curricula are delivered to families as intended by the program model may all affect program outcomes.

Conclusions

- The wide variability in results indicates that benefits cannot be generalized from one home visiting program model to another.

- The results indicate how difficult it is to change human behavior, but they do not change the importance of continuing supports for families with young children. The popularity of parenting books, magazines, and videos suggests that parents are hungry for information and support, and new research suggests that children's earliest years must not be ignored.

- The results suggest that change is necessary to improve the home visiting services that presently are in place and to adapt existing home visiting models, if hoped-for benefits are to be achieved by home visiting programs on a widespread or consistent basis.

Two of the six articles in the journal were specific to Healthy Families programs, i.e., Evaluation of Hawaii's Healthy Start Program (Duggan et al., 1999), and Healthy Families America: Using Research to Enhance Practice (Daro & Harding, 1999) and these are discussed below.

2.2.1 Evaluation of Hawaii's Healthy Start Program

This article describes Hawaii's Healthy Start Program (HSP) at six sites, its ongoing evaluation, and evaluation findings after two years of a three-year study. Duggan et al., (1999) summarized the outcome findings as follows:

> After two years of service provision to families, HSP was successful in linking families with pediatric medical care, improving maternal parenting efficacy, decreasing maternal parenting stress, promoting the use of nonviolent discipline, and decreasing injuries resulting from partner violence in the home. No overall positive program impact emerged after two years of service in terms of the adequacy of well-child health care; maternal life skills, mental health, social support, or substance use; child development; the child's home learning environment or parent-child interaction; pediatric health care use for illness or injury; or child maltreatment (according to maternal reports and child protective services reports). However, there were agency-specific positive program effects on several outcomes, including parent-child interaction, child development, maternal confidence in adult relationships, and partner violence.

Significant differences were found in program implementation between the three administering agencies included in the evaluation. These differences had implications for family participation and involvement levels and, possibly, for outcomes achieved.

The authors conclude that home visiting programs and evaluations should monitor program implementation for faithfulness to the program model, and should employ comparison groups to determine program impact. (Duggan et al., 1999, p. 66.)

2.2.2 Healthy Families America (HFA): Using Research to Enhance Practice

Daro and Harding (1999) describe the HFA initiative and the partnership among researchers engaged in evaluating HFA programs across the United States. Further, they summarize the research findings of 35 evaluations (including eight randomized trials) as follows:

Preliminary findings of the research partners suggest that HFP programs may have the most success at improving parent-child interactions, with more limited or mixed success in the areas of health care status and utilization, the prevention of child abuse and neglect, and improved maternal life course outcomes. HFA programs so far have not demonstrated significant improvements in children's development or maternal social support.

The authors report variability in both outcomes and attrition rates across subgroups of families in these studies, but there are no consistent patterns to identify who is most likely to stay enrolled in an HFA program or who is most likely to benefit from that enrollment. The authors conclude that these and several other areas require additional research. They further recommend that researchers and practitioners move beyond a singular focus on individualized interventions and work to create a communitywide and national context in which support for all new parents is the norm. (Daro & Harding, 1999, p. 152.)

2.2.3 Journal Conclusions

Behrman (1999), the editor of this journal concludes as follows:

We recommend that practitioners and policymakers embrace modest expectations for these programs; no single service strategy can accomplish all the goals that these programs have been mounted to address (promote good parenting, prevent child abuse and neglect, promote children's health and development, and change the course of mothers' lives). (Behrman, 1999, p. 3.)

2.3   Recent Evaluations of Healthy Families Programs

In this section of the review of evaluations of Healthy Families programs we focus on the recent rigorous evaluation of two programs, the Hawaii Healthy Start Program (HSP) and the Healthy Families San Diego Program.

2.3.1   Hawaii Healthy Start Program

Duggan et al. (2004) have continued the experimental study discussed in the Future of Children section above. Having completed the follow up to the child's third year of life, the outcome results are summarized below.

Outcome Results (Duggan, 2004, pp. 610-614)

- Overall the HSP and control groups did not differ on self-reported abusive behaviour but HSP mothers were less likely to threaten spanking in one agency (site).

- There were no significant differences between HSP and control mothers on use of severe abuse and use of psychological abuse or minor assaults. HSP researchers rarely documented home visitors concerns about this. Home visitors recognition rate were very low (i.e., 0%, 12%, 0%) for the three years.

- The groups did not differ on whether the mother neglected the target child. Further, there was no difference on maternal responsiveness.

- The HSP and control mothers were similar in substantiated child protective service report rates.

- The two groups were similar in hospital admission for trauma.

- There were no differences between the groups in the percentage of mothers who relinquished the role of primary caregiver.

Overall, the findings did not demonstrate positive program effects. Further, the findings regarding the lack of recognition of child abuse and neglect by the home visitors was a concern. As Duggan et al. (2004) indicate in the discussion:

> At the outset of this study, we hypothesized that the HSP model would prevent child abuse and neglect. Our rationale was tied to program intent and design (Hawaii Family Stress Center, 1991). The HSP was developed, first and foremost, to prevent child abuse. It targeted families identified as at-risk of child abuse. Its home visiting component aimed to provide intensive, long-term services. It was designed to elicit the family's trust and to reduce stress by addressing immediate crises. It aimed to provide parenting education and role modeling of effective parenting strategies and alternatives to corporal punishment. Most importantly, home visiting services were based on a case plan to address the risks identified in the assessment interview.

One of the home visitor's responsibilities was to recognize the need for professional intervention and make appropriate and effective referrals.

However, we found little program impact in preventing child abuse. The HSP and control groups did not differ in indicators of severe abuse and we found little evidence in program records that home visitors were alert to mothers with the highest levels of abusive behavior, even mothers who were active in the program. We were able to locate all program records and found them to be in good order, with detailed notes on each home visit. Supervisors reviewed, discussed and initialed the records as part of weekly home visitor supervision. Thus, we believe the records were an acceptable source of data for home visitor recognition of abuse. (Duggan et al., 2004, p. 613.)

The lack of alertness of the home visitors was an indication of broader implementation issues which contributed to the program's lack of impact as Duggan et al. (2004), further points out:

We believe that the program's implementation system contributed to its minimal impact on maltreatment (Hawaii Family Stress Center, 1991). The program focuses on families with multiple, complex risks for child abuse, but home visitor and supervisor training in these areas was scant and focused more on knowledge than on skill building. It is likely that home visitors lacked sufficient expertise and supervision to address family risks for abuse, motivate families to change, and link families with professional services. The program required supervisors to have a master's degree and a least 3 years clinical administrative experience in a human services program or a bachelor's degree and 5 years relevant experience. Clinical and supervisory experience in child maltreatment was desirable but not required. Program materials indicated that it was not always possible to find personnel with all desired qualifications and so in-service training, seminars, and reading material were needed to address deficits. The program lacked tested protocols and formal referral arrangements with professional services in the community to address risks and promote healthy family functioning. This complicated the home visitor's task of linking families with needed resources. Program leaders identified early on that, "Because project families have many problems and pressing needs, there is a tendency on the part of the worker and the projects to try to solve all of these problems, and to 'be all things' to these families" (p. 38). This, too, was a barrier to integration of home visiting with professional services available in the community. The program's management information system had incomplete data for monitoring service delivery. The HSP network believed the family attrition rate was about 20% annually. In truth, about half of enrolled families left the program within a year. This misconception caused leadership to overestimate program success in engaging families. Finally, program implementation suffered with shifts in the state's economy. There was a serious economic downturn in Hawaii in the mid-1990s. After a period of expansion, programs were level-funded or experienced budget cuts. This

contributed to staff anxiety and turnover, which might have compromised service quality.

We also believe that program impact was compromised by ambiguity in the model itself. In the late 1980s and early 1990s, the case plan that guided service content was developed by the home visitor and the supervisor and was based on the risks for abuse for which a family had been targeted (Hawaii Family Stress Center, 1991). In 1994, Hawaii recognized services for children at environmental risk for special health care needs as qualifying for Early Intervention Part C reimbursement. This allowed Early Intervention Part C reimbursement for Healthy Start services. To conform to funding requirements, the program began to adopt the early intervention philosophy of parent-driven services. The case plan evolved into the individualized family support plan (IFSP), and parents became decision makers in setting goals and strategies to achieve them (Hawaii Family Stress Center, 1995).

At the same time, turnover in program directors and supervisors led to a gradual shift in program perspective. Directors and supervisors leaving the program had been familiar with its emphasis on risk reduction and how this was operationalized in the case plan. Newly hired managers brought their training in the strengths-based perspective and their understanding of the use of the IFSP in families of children with diagnosed disabilities. Their interpretation of the IFSP focused on family-driven goal setting. Thus began a shift away from risk reduction, except for families who nominated such goals themselves. Because supervisors and staff lacked adequate training in risk recognition and response, they were unable to work with families to help them surface and address their risks for child abuse and neglect.

Our companion papers to this study describe how home visitors failed to recognize family risks for abuse and to link families to professional services (Duggan et al., 2004) and how these risks are related to abusive parenting (Windham et al., 2004). Thus, program failure to prevent child abuse can be traced to a lack of impact in reducing parental risks for abuse such as domestic violence. This conclusion is consistent with Eckenrode et al.'s finding of the limited effectiveness of the nurse home visitation model in preventing child maltreatment in families with domestic violence, a risk that the model did not address (Eckenrode et al., 2000). (Duggan, 2004, pp. 615-616.)

2.3.2 Healthy Families San Diego (HFSD)

In 1995, Landsverk et al. (2002) began conducting a three-year randomized clinical trial of home visitations in San Diego County. The intervention model involved was based on the Hawaii Healthy Start Program with some enhancements. Service began at birth and continued until the child's third birthday. The HFSD program consisted of: (1) home visits provided by non-nurse family support workers, (2) center-based support groups and parenting classes, and (3) team case management.

16

<u>Outcome Results (Landsverk et al. 2002, pp. 28-49)</u>

- At 36 months, HFSD families were less likely than the control group to report repeat pregnancies (49% versus 40%, $\underline{p}$=.05). This difference was significant for white women, but not for women of other racial or ethnic groups.

- There was a trend for HFSD families to have fewer live births (28.6% vs. 22%, $\underline{p}$=.09).

- There were no differences between groups on measures of maternal substance abuse, being a victim of partner violence, confidence in adult relationships, mental health scores, or measures of social support at year three, though HFSD mothers had shown less depressive symptoms than control group mothers at year two.

- There were no differences between groups in high school degree or employment levels, though HFSD mothers were more likely to have attended school (37% versus 28%, $\underline{p}$=.05) at year three.

- There were no differences in the home environment, mother-child interactions, use of non-violent discipline, or less stress related to parenting between groups.

- Child abuse and neglect was assessed using a self-report measure of neglectful, psychologically aggressive and abusive behaviors. There were no differences in being likely to engage in neglectful behavior, inflict corporal punishment, or engage in physical assault during the target child's first three years of life. However, HFSD mothers were less likely to engage in psychological aggression at year two, and, for those mothers who did report they used psychological aggression or corporal punishment, the mothers in the control group used those techniques more frequently than the intervention group.

- There were no differences in the percentage of children with health insurance, a medical home, immunizations, or in use of safety measures in the home, but children in the intervention group had more well-child visits in the second year of life.

- There were no differences between groups in use of other services such as legal assistance, child care, respite care, transportation, adult education, housing, counseling, substance-abuse treatment, support groups, women's shelter, material assistance, and financial assistance.

- There were no differences between groups in children's cognitive development at year three, although HFSD group children outperformed the control group in years one and two.

- There were no differences in mothers' reports about children's behavior between groups except HFSD families reported fewer somatic problems at year three.

    In summary, Landsverk et al. (2002) indicate:

Overall, these findings suggest a few positive outcomes in selected areas. The increase in spacing of pregnancies may allow the mother to find employment, leave welfare and move out of poverty. This could allow her to focus more attention on her child, which may result in better long-term child outcomes. In addition, the decrease in maternal depressive symptoms is an important factor because prior research has demonstrated that child development and CPS involvement are highly correlated with maternal depression. The decrease in the mother's use of psychological aggression may influence her child's use of violence and potential for behavioral problems. Also, the significant developmental difference of the target child at years one and two, with no program effects detected at year three, suggests that early home intervention may stimulate early cognitive development. Although there was a decrease in the development scores for both groups at year two, these findings may suggest that a more intensive program is necessary to not only sustain but also increase developmental advantages beyond infancy. Intervention programs that contribute to positive changes in the family are more likely to continue to exert a positive influence on the child after the intervention has ended.

The issue of program effectiveness is further complicated by differences among population subgroups. Although all the families in this study were overburdened, they may differ in their patterns of parenting, as well as overall engagement in the program. This is exemplified by the statistically significant increased spacing of pregnancies and resultant live births for Anglo participants but not for women in other racial/ethnic groups. (Landsverk et al., 2002, pp. 3-4.)

Further, Landsverk et al. (2002) state that:

The outcomes present a complex picture and offer some directions and challenges for future program development. The original concept assumed that by providing support to parents, we would see noticeable differences between the intervention and control groups on a broad range of outcomes domains, including maternal life course, family functioning, child abuse, health behaviors, and child development. As the recent Future of Children (1999), publication on home visiting indicates, it may be unrealistic to expect a fairly generic, global intervention to demonstrate specific outcomes in areas which have not been directly addressed by the intervention. In fact, our data would indicate that we had little impact on most of the proposed outcomes.

In addition to the few positive findings, we identified a number of areas needing additional analysis and program development. Several Masters theses conducted during the life of the study indicated that even though we had provided multiple trainings, there were several key areas which the home visitors and the team leaders did not seem to recognize as serious issues. Mental health, substance abuse, and domestic violence were not assessed and notations in the service plan and progress notes do not indicate that staff

were picking up on these issues, despite the appearance of high rates in these areas observed in the research interviews.

Although considerable concern should also be noted in the lack of significant differences between the intervention and control group families in the areas of measurement most closely linked to physical abuse and neglect, of note is the significance decrease in the frequency of reported use by the intervention mothers. These areas are clearly primary targets of a child abuse and prevention program such as the Healthy Families San Diego. These critical findings suggest that more targeted and powerful elements may need to be developed and implemented in the intervention before measurable decrease in these very risky behaviors is impacted. Overall, these findings suggest that program impacts require specific focus in the areas where benefit is sought. (Landsverk et al., 2002, pp. 50-51.)

2.4 Cost Analysis

2.4.1 Annual Costs

As part of his analysis of the cost of the Best Start Program, Kerr (2005) reported the following:

Recent estimates of costs for Healthy Families America programs range from $3,000 to $5,000 (US)[2] per year per family.[3] Another home visiting model, the Parent-Child Home Program reported costs of about $2,000 (US)[4] per family per year. Costs for the recent 2.5-year Denver trial of NFP (which compared the effectiveness of nurse and paraprofessional home visiting) were reported as $9,140 (US) for the nurse-visited families and $6,162 for paraprofessional families (i.e. an average of $3,565 per year for nurse-visited families and $2,465 for paraprofessional-visited families[5]). This suggests that nurse home visiting in that trial cost about 50% more than the paraprofessional model, however, until Olds and colleagues show how these figures were calculated, they should be used with caution.[6]

Best Start's costs of approximately $3,132 (Canadian) per family per year[7] (excluding start-up costs) would place Best Start at the low end of the range of annual costs per family provided above. (Kerr, 2005, p. 18.)

2.4.2 Cost-benefit Analysis

---

[2] Approximately $3,750 to $6,250 (Canadian) per family per year at the 9 February 2005 exchange rate.
[3] Gomby 2003, Appendix E.
[4] Approximately $2,500 Canadian.
[5] Approximately $4,456 Canadian per family per year for nurse home visitors and $3,081 Canadian for paraprofessionals.
[6] It is possible that additional information may be obtainable from the economic analysis being conducted of the Denver trial.
[7] From Table 4 [Kerr, 2005], Best Start's average cost per client-month in the 2001-02 Fiscal Year was $261. Multiplying by 12 gives an annual cost per family of approximately $3,132.

As Kerr's (2005) report also points out:

The best-known economic analysis of home visiting programs is undoubtedly that conducted in 1998 by Karoly et al. for the RAND Corporation. Their analysis compared the costs and benefits attributable to the Elmira Nurse Home Visiting program. They reported results using both governmental and societal perspectives. Savings to government were estimated to exceed costs by $18,611 per child for higher risk families. The largest component in government savings was a reduction in welfare costs. Other government benefits were an increase in taxes on mothers' increased earnings and reduced criminal justice costs – primarily due to later reductions in criminal activity on the part of treated children. Karoly et al report that there were several program effects that they did not attempt to monetize, including increases in the future income of treated children, increased income of mothers (and reductions in welfare) for mothers after their children reached age 15, and savings from reduced child abuse and neglect.

They note that the cumulative savings exceeded cumulative program costs after only three years. This is because many of the monetized program benefits result from observed changes in behaviour of the mothers. This early accumulation of benefits means that the net benefit of the program is less affected by discounting (and choice of discount rate) than is the case for other early interventions, such as the Perry Pre-school program, where positive effects were more delayed.

Karoly et al. also examined costs and benefits for lower risk families in the Elmira program and estimated that government costs of treating these families with nurse home visiting exceeded government savings.

The evaluation of Hawaii Healthy Start by Duggan et al. was originally to include a cost-benefit analysis. In an e-mail communication, however, Anne Duggan wrote: "We found little positive impact of the program and so did not conduct a cost-benefit analysis."

Similarly, Landsverk et al. abandoned planned efforts "to determine the cost-benefits derived from in-home family support services by paraprofessionals." They concluded: "Overall, few differences were observed between the intervention and control group conditions over the three follow-up data points that were in the expected direction and attributable to the intervention. With outcome benefits not obtained, a cost-benefit determination is not appropriate."[8]

This report comes to the same conclusion regarding possible cost-benefit analysis of the Best Start home visiting pilot. The Best Start evaluation and more rigorous evaluations of similar home visiting programs have thus far

---

[8]   Landsverk et al., 2002, p. 46.

found few outcome effects that can be convincingly attributed to this home visiting model[9]. Although the cost-benefit framework proposed for NCPC's Investment Fund is designed to accommodate uncertainty, there must be a reasonable basis for estimating ranges of possible outcomes and their probability distributions.[10] There is at this time no adequate basis for the credible quantification of benefits. This report has, however, provided an analysis of program costs. (Kerr, 2005, pp. 31-32.)

2.5 Conclusions

The early evaluations of home visitation programs (prior to the early 1990s) clearly demonstrated the effectiveness of these varied programs in achieving numerous positive outcomes related to long-term crime prevention. These research findings, however, may be limited in terms of their generalizability to Healthy Families programs since the programs reviewed did not specifically include Healthy Families programs.

The reason why the early reviews did not specifically include Healthy Families programs is that these programs have been developed and implemented only recently. As indicated above, the first Hawaii Healthy Start Program was implemented in 1975 and the first evaluation was not started until 1985. Thus, an overriding issue that program developers and evaluators of Healthy Families programs have to deal with is that this area is in an early stage of development.

In addition to the issue of a limited history, evaluations of Healthy Families programs have to deal with a number of inherent limitations such as self selection into the program (because these programs are voluntary by nature), high attrition/dropout rates (also associated with the voluntary nature of the program), the heterogeneous nature of the needs of the clients who enroll in these programs (because the focus was primary prevention), and finally, the fact that in response to the varied needs of the clients these programs have committed to pursuing a broad range of positive outcomes with their clients (which is demonstrated by the broad range of anticipated outcomes they embrace) which in turn results in heterogeneity of the service and program drift. Further, anticipated outcomes are to be achieved by a program dosage which amounts to 25 to 30 hours of home visitation in the first year.

Given the limitations, it is not surprising that positive results to date have been modest. The response to this by researchers has been to call for increased rigor (i.e., use of a randomized control group trial (RCT)) in the research design and the use of multiple standardized instruments to cover the broad range of anticipated outcomes. We would question whether these programs are best evaluated by RCT given their relatively early stage of development and their inherent limitations, all of which would create threats to internal validity – even with an RCT.

---

[9] It is worth noting that, in the face of high attrition rates, the "intention-to-treat" evaluation designs used by Duggan and Landsverk could miss program effects among program finishers that are masked by lack of effects with program dropouts. Duggan et al., 2004b, p. 638 acknowledge that they were able to assess program efficacy in only a rudimentary way.

[10] See Aos et al., 2001, pp. 34 and 74 for a discussion of cost-benefit analysis of crime prevention programs using @RISK software.

In reviewing Duggan et al., 2004, we concluded that this three-year evaluation was not a valid test of the Healthy Families model given the implementation problems discussed by the author above. It appears that the program should have been better developed and stabilized before conducting such a rigorous outcome evaluation. A formative evaluation approach or action research which provides ongoing feedback to the programs could have helped the programs deal with such issues as the underreporting of child abuse and lack of training in the early stage of the project.

Landsverk et al. (2002) was a much better test of the model. Even though it was still plagued by some of the inherent limitations listed above, at least the programs appeared to be implemented as planned and the evaluation demonstrated a few important positive effects in terms of pregnancy planning and child abuse.

Finally, it is not surprising, given the inherent limitations and stage of development of these programs, that no one to date has been able to conduct a cost benefit analysis of Healthy Families programs.

3.0   EVALUATION STRATEGY AND DESIGN

This chapter of the report contains a detailed discussion of the strategy, design, and specific research methods for the process and outcome analyses, which were based on a logic model approach.

3.1   Best Start Program Logic Model

As Taylor-Powell (2001) has indicated, a logic model for a program provides a detailed picture of the program. This picture provides a representation of program theory or action, which explains the program and what it is to accomplish. It shows the relationship between what is put in (inputs), what is done (outputs), and what results (outcomes). Logic models are essential to program planning and evaluation. The components of a comprehensive logic model are further defined below.

Program Goals and Objectives

The program's goals and objectives must be clearly documented in a process analysis. Further, the objectives must be measurable since they form the basis for expected outcomes for the outcome analysis. At this stage, the complete program design and rationale should be documented, as well as anticipated inputs, activities, and outputs. If these expectations are changed as the program is implemented, then the reason why this occurred should be clearly documented.

Inputs

Inputs are the next component that must be documented in a process analysis. They include all the resources used to implement and operate the program.

Activities

The specific activities of the program are also a critical component of a process evaluation. Unfortunately, evaluators often assume that program services and activities are adequately measured by the descriptions in the framework and do not attempt to measure activities directly after the program is implemented. In reality, program activities often vary considerably from the proposed approach both within and between programs.

A detailed description of the activities is essential for at least two reasons. First, it facilitates possible replication of the program. Second, if the activities are not monitored directly, differences in the way similar programs are implemented could result in achievement of different unexplained outcomes.

Outputs

Outputs are the direct results of program activities and are usually measured in terms of the amount of work accomplished. For example, they could include number of clients served, the level of client service delivered, education/training sessions held, and

coordinating or partnering with other agencies. If clients are serviced directly, it is also essential during this step of the process analysis to document their needs and strengths at intake into the programs since these directly affect potential for change and the final outcomes.

<u>Outcomes</u>

Outcomes are the measures of whether the programs are having their intended effects by achieving specific program objectives, identified during the design phase of the program. In programs involving the provision of services to clients, the outcomes should focus directly on the changes expected of the clients. For example, outcomes may relate to behaviour, knowledge, attitude, values, or other attributes that are affected by the program.   In addition, for some programs (e.g., crime prevention through social development), it may also be necessary to identify shorter-term outcomes since the full benefits of the program may not be realized for many years. While intended outcomes (i.e., those dictated by the stated objectives of the program) are the core of outcome evaluation, researchers should also be sensitive to unintended effects – both positive and negative.

<u>Impacts</u>

Impacts are longer-term outcomes. These may also reflect changes that go beyond the individual clients who receive services from a particular program. They could, for example, include lowering the rates of involvement of child protection in a community.

<u>Best Start Logic Model</u>

A detailed logic model for the Best Start home visitation program is contained in Table 3.1. This model, based upon information from the home visitation program as well as from the literature, provides a detailed picture of the Best Start home visitation program and provides the framework for both the process analysis and outcome analysis of this report.

Table 3.1
Logic Model for the Best Start Home Visitation Program

Goals and Objectives	Inputs	Activities	Outputs	Outcomes/Impacts*
• Enhance the capacity of parents to parent effectively. • Promote positive parent-child interaction. • Promote parents' personal development • Impact the child readiness to learn upon school entry. • Increase the likelihood of healthy child development outcomes for the child. • Reduce the risk of abuse and neglect in early childhood.	• Funding from NCPC and Provincial government. • Best Start staff. • Public Health Nurses. • Training for staff and Public Health Nurses. • Partnerships with other agencies.	• Screening and intake of clients. • Assessment of clients. • Home visits. • Creative outreach.	• Number of clients screened. • Number of clients assessed. • Number of clients who received home visits. • Number of clients completing program. • Number of clients leaving program before completion. • Profiles of clients served.	Short-term (child 0-3) • Increase family functioning. • Increase knowledge and skills covering child development. • Increase parent's use of social support. • Increase accurate perception of the child's temperament and positive parent-child interaction. Long-term (child 3-6) • Increase long-term satisfaction and competency of the parent. • Increase parents' ability to build positive long-term social support systems. • Increase parents' ability to deal with stress. • Increase parents' ability to foster normal, healthy children. • Increase appropriate utilization of health care system. • Decrease the need for intervention by Child Welfare services.

* Please note: these vary slightly from the program's stated objectives in Section 4.3.1. They are based primarily on the program's statement of objective but also considers prior research in this area, availability of measures, and availability of data.

3.2   Framework for Process Analysis

In the broadest terms, a process analysis examines how a program or project was actually implemented and answers the question of whether the program was carried out as it was intended. We used a logic model approach, which monitors and documents the goals, inputs, activities, and outputs as pictured in Table 3.1.

3.2.1 Research Questions

The main question for the process analysis is whether the Best Start program was implemented and carried out as it was intended. Specific research questions for each component of the process analysis are as follows:

Program Goals and Objectives

- What are the program goals and objectives?

- Were the program goals and objectives changed as the program was implemented?

Input: Funding

- What funding was obtained?

- Were there any issues that occurred regarding funding?

Input: Operational Structure

- How are the program's services organized and administered?

- Were there any issues that occurred regarding the organizational structure?

Input: Staff

- Were the anticipated number of staff hired?

- What were the staff qualifications?

- Was there staff turnover?

- Were there any other issues regarding staff or supervision of staff that occurred?

Input: Training

- What type of training was the staff given?

- Were there any issues that occurred regarding training?

Input: Other Resources

- What other resources were available to the program?

- Were there any other resource issues?

- What other agencies are involved with the program?

- What is the nature of the relationship with other agencies (e.g., collaboration, consultation, referral, information sharing)?

- Did these relationships develop or diminish over time?

- What is the effect of multiple relationships with other agencies (e.g., potential for conflict, problems regarding sharing of information)?

Activities

- Were the services directly offered to the clients consistent with the Healthy Families model?

- What level of direct contact was achieved?

- Was the Individual Family Support Plan used?

- Were there any issues that occurred regarding the delivery of program services?

Outputs

- Were the anticipated number of clients served?

- How many clients were screened, assessed, and received home visits?

- Were the profiles of clients' needs consistent with the philosophy of the program, i.e., primary prevention?

- How many clients completed the program and how many left early?

- Were there any issues regarding clients' needs?

Transferability

- Is the Best Start program model transferable to other jurisdictions across Canada?

- What issues would have to be dealt with in transferring the program model to other jurisdictions?

3.2.2   Process Analysis: Research Design

The methodology for the process analysis involved monitoring several critical components of the program over time, using a number of different research techniques and data sources. These methodologies for collecting data included: site visits; interviews with program administrators and staff; reviews of administration records and the client file Management Information System (MIS); interviews with key informants; and observation of key meetings. This report documents program implementation to March 2005.

<u>Site Visits</u>

During the timeframe of the current evaluation study both the Project Director, Dr. Hornick and the Project Co-director, Dr. Boyes made an average of two site visits to PEI per year. Activities during the site visits included such things as training sessions with the workers, meetings with the Best Start Director and Board Members, meetings with the Family Resource Centre, meetings with Public Health Nursing, meetings with the Evaluation Advisory Committee, and presentations of interim findings to government representatives.

<u>Interviews with Program Administrators and Staff</u>

The interview process consisted of regular meetings that were held with the Best Start coordinators and the Public Health Nursing coordinator for Best Start to assist in monitoring program development and implementation. Meetings with program administrators and other staff were also attended as required to identify and discuss issues involving program implementation and the evaluation.

The following administrators, staff and key informants were interviewed during the evaluation: Ann Robertson, C.H.A.N.C.E.S. Executive Director; Phil Matusiewicz, Best Start Provincial Coordinator; Roberta Ward, Best Start Coordinator, Kings and Queens Region; Jennifer Burgess, Best Start Coordinator, East Prince and West Prince; Sharon Lawlor, Manager of Public Health Nursing, Queens Region; June Tessier, Public Health Nurse responsible for Best Start in Queens County; and Linda Smith, Best Start Trainer.

Regular meetings were also held with Ann Robertson, Roberta Ward and Marilyn Norton, Jennifer Burgess, and June Tessier, as well as the Public Health Nurses responsible for Best Start in each region. The purpose of these meetings was to identify and discuss ongoing issues with respect to program implementation and the evaluation.

<u>Review of Program Administration Records</u>

The review of program records, designed to collect information on program goals, objectives, inputs and activities, included the following:

- program documents and reports;

- Best Start coordinator reports;

- Public Health Nursing coordinator reports;

- minutes from committees; and

- client file Management Information System (MIS).

<u>Management Information System (MIS)</u>

With the expansion of the Best Start program at C.H.A.N.C.E.S. province-wide, there was a need to also expand the functionality of the Management Information System (MIS). This was required to properly support the activities of home visitors in a larger number of more geographically-diverse program sites and to make the additional supervisor activities possible as well.

Site visits were conducted to ensure that all programs had access to the Internet, as well as the necessary training. Internet access was necessary to access the on-line version of the information system (built in SQL and made available over an encrypted Internet link) rather than using a local Microsoft Access version at each site. At that time, caseloads at the newer sites (outside of Charlottetown) were light and home visitors were given access to a practice area on the on-line site. Visitors were encouraged to create fictitious families on this practice site and try out the features of the on-line system in order to familiarize themselves with the system. All home visitors accessed the site and entered practice data.

In March 2005, CRILF transferred the home visitation web site to C.H.A.N.C.E.S. from the CRILF web server based in Edmonton, Alberta, thus providing for a PEI-based system maintained locally. In addition, CRILF staff trained a local consultant on site to support the system.

<u>Observation of Meetings</u>

The monthly meetings of the following Best Start Core Groups were regularly attended: West Prince Core Group; East Prince Core Group; Kings County Core Group; Best Start Provincial Core Group, as well as the bi-monthly meetings of the Prince County Operational Committee and the Queens and Kings Operational Committee.

3.3   Framework for Outcome Analysis

An outcome analysis focuses on the anticipated outcomes and longer-term impacts of the program and attempts to identify whether the program is effective at achieving these anticipated outcomes and impacts. The key issue for outcome analysis is establishing whether the results produced at post-test were <u>caused</u> by the program. To understand whether the post-test results were caused by the program, we need to know what would happen if the program had not been implemented. This is the key concept to making causal inferences. Thus, causal inference can be made if we can compare two situations that are identical in every respect except for the program. Given this situation, any differences at post-test can be attributed to the program (Treasury Board of Canada Secretariat, 1998, p. 11).

3.3.1 <u>Choice of Research Design</u>

The choice of the specific research design to map out the strategy for testing effectiveness is not a simple decision. The importance of decisions concerning evaluation research design and strategy has been highlighted by the recent debate about the use of

randomized control group trials (RCTs) as the "gold standard." This debate has been particularly contentious in the fields of medical research and educational research (see Penston, 2004; Donaldson et al., 2004), but it is also becoming a contentious issue in the broader field of evaluations of social programs.

As the Treasury Board of Canada Secretariat report *Program Evaluation Methods* (1998, p. 29) indicates, the most rigorous designs, called experimental or randomized designs, ensures the initial equivalents of the groups by creating them through random assignment of participants to "treatment" or separate "control" groups. This process ensures that the groups to be compared are equivalent. The equivalency of the groups over time minimizes the threats to internal validity and permits the researcher to conclude that differences between the two groups at post-test were caused by the intervention. "Unfortunately, in practice, the ideal design cannot be perfectly implemented since the perfect equivalents of the experimental and control groups can never be fully achieved" (p. 12). Even if an RCT is used in an evaluation, there still may be threats to internal validity of the design.

In the words of Campbell and Stanley (1963, p. 5), ensuring that an experiment has internal validity (i.e., it has dealt with threats to internal validity) is essential for concluding that "the experimental treatments make a difference in the specific experimental instance." Campbell and Stanley (1963, p. 5) identify eight threats to internal validity, which if not controlled in experimental designs might produce effects confounded with the effect of the experimental treatment. Five of these threats to internal validity are of particular relevance to this current study and are listed below.

- History: the specific events occurring between the first and second measurement in addition to the experimental variable.

- Maturation: the processes within the respondents operating as a function of the passage of time, e.g., growing older.

- Statistical Regression: operating where groups may have been selected on the basis of their extreme scores, i.e., the tendency for extreme scores to regress to the mean over time.

- Selection: biases resulting in differential selection of respondents for the comparison groups (including self-selection).

- Mortality: the differential loss of respondents from comparison groups.

As the report, *Program Evaluation Methods* (Treasury Board of Canada Secretariat, 1998, p. 34) points out, "experimental designs offer the most rigorous methods of establishing causal inference about the results of a program. They do this by eliminating threats to internal validity by using a control group randomization blocking and factorial designs. The main drawback of experimental designs is that they are often difficult to implement."

Furthermore, Cook and Campbell (1979) list the major obstacles to conducting randomized experiments and field settings as follows:

- Volunteerism: As Cook and Campbell (1979) state, "the growing emphasis upon volunteerism and informed consent in social experimentation will lead to an ever-increasing number of experiments that use randomized invitations to treatment rather than randomized assignment to treatments" (p. 363).

- Heterogeneity of Treatment: "This obstacle occurs when there's considerable variability in the extent to which treatment was received" (Cook and Campbell, 1979, p. 366). Standardization is a solution which, of course, would be difficult with home visitation programs.

- Attrition from the Experiment: As Cook and Campbell (1979) indicate, "Experimental treatments differ in their attractiveness to respondents, so that the number and nature of persons remaining in an experiment may differ between conditions if the experiment lasts any period of time" (p. 359).

Cook and Campbell (1979) suggest solutions to all the above obstacles – most of which would transform the RCT into a quasi-experimental design. Likewise, when randomized experimental designs or RCTs are not feasible, the *Program Evaluation Methods* report (Treasury Board of Canada Secretariat, 1998, p. 35) recommends the use of quasi-experimental designs. Quasi-experimental designs use comparison groups to make causal inferences, but do not use randomization to create treatment groups or control groups. The comparison group is selected so that its characteristics of interest resemble those of the program group as closely as possible. The degree of similarity between the groups is determined through pre-programmed comparisons. It is usually difficult to match perfectly on all variables of importance. This means that, typically, at least one rival explanation for the observed net program impacts will remain, namely that the two groups were unequal to begin with (p. 36). The choice of an appropriate quasi-experimental design will eliminate or minimize major threats, or at least allow the evaluator to account for their impact (p. 37).

3.3.2 Evaluation Context and Limitations

There are a number of factors which influenced the type of research design we chose to implement for the evaluation of the Best Start program. Some of these factors were the result of the inherent nature of the Healthy Families home visitation program itself and others were the result of the context of the program and/or contractual conditions. These are briefly discussed below.

Inherent Limitations Due to the Nature of the Program

There are a number of limitations which result directly from the nature of the Healthy Families home visitation program. Interestingly, these relate directly to the obstacles discussed above by Cook and Campbell (1979). They are as follows:

- Volunteerism: Enrollment and participation in all Healthy Families programs is voluntary, by definition. Only approximately 50% of those who qualify for the programs actually become involved in the programs. Very little is known about the similarities or differences between those who accepted involvement with the programs, and those who chose not to participate in the programs.

- Heterogeneity: Healthy Families home visitation programs (as primary prevention programs) serve a broad range of clients. These clients are a very heterogeneous group, as was documented by the Elnitsky et al. (2003) report. Even though these client families were assessed as "families at risk," the specific strengths and weaknesses of the individual families were unique. This makes these families both difficult to provide services to and difficult to evaluate. Further, because of the unique needs of these families, the specific program goals and activities differ significantly from family to family. In addition, the number of home visits received by the families (i.e., dosage) was determined more by the families than by the program.

- Attrition/Dropouts: Attrition or dropout rates for Healthy Families programs are known to be high. They usually range from 20 to 50% for the first year of involvement with the program. Few of the participants actually complete the program (for most programs when the child is six years old).

Conditions of the Funding Contract

In addition to the inherent limitations due to the nature of the program itself, conditions of the funding agreement also affected the type of evaluation design that was developed.

- Conditions on Funding: Funding for both the evaluation and the program were limited and required "contributions" by the recipients. In the case of the evaluators, we provided a data analyst at no cost. In the case of the program, their contribution involved having the home visitors collect data for the evaluation. The cost of implementing an RCT would have been prohibitive.

- Universality of the Program: Conditions of the funding also involved implementation of the program province-wide. Thus, the opportunity for a no treatment group was limited to those who qualified for, but chose not to be involved in the program.

- Capacity Building: Conditions of the funding also required that CRILF capacity build with the program. This involved CRILF working very closely with the program managers and the home visitors to develop a Management Information System (MIS). Our role in this component of the project was a formative evaluation role.

3.3.3 Outcome Analysis: Research Design

Given the restrictions and limitations discussed above, a pre-test multi-post-test quasi-experimental design was chosen to determine the effectiveness of the program. Pre-testing of families began after the first home visit and continued for the duration of the study or until families had withdrawn or finished the program (when the target child was three

years old).[11] As Figure 3.1 indicates, there is a comparison group (n=19), which was part of the first three-year study based in Summerside (we have been following this group since 1999). We also constructed two other comparison groups: a Completed Program Group (i.e., client families who left the program when the child reached their third birthday); and a Non-participant Comparison Group of parents who were screened positive but did not agree to do the assessment and become involved with the program. Further sub-samples of these groups have also been constructed and used in specific analysis. These are discussed in the section below.

Written informed consent was obtained from all participants of this study. The actual consent forms and protocols for obtaining consent varied slightly among the four study groups discussed above, however, all groups were fully informed regarding the purpose of the evaluation, the nature of their involvement, the confidentiality of the data, and the fact that they could withdraw consent at any point in time. The specific consent forms were developed to be consistent with the recently proclaimed *Freedom of Information and Protection of Privacy Act (FOIPP)*.

3.3.4   Comparison Groups

As indicated above, several comparison groups were constructed to maximize the rigor of the quasi-experimental design within the context and limitations of this evaluation. Understanding the equity and dissimilarities between these comparison groups at the pre-program stage facilitated analysis and interpretation of the findings in a manner that could account for the dissimilarities and maximized control on the threats to internal validity as discussed above. All of the study sample/comparison groups are contained in Figure 3.2.

Data regarding the relative risk level of the various study groups were obtained through the use of the standardized Record Screen, which is administered by the provincial Public Health Nurses to all parents of newborns. The Record Screen, which was adapted from the *Healthy Families Training Manual*, consists of 17 statements that relate to risk factors the parent may currently experience or has experienced in the past. The screen is scored positive if one of the following is true: single-parent; late prenatal care; or abortions sought or attempted with this pregnancy. Any two true scores on the other statements are also considered a positive screen. While the primary purpose of the Record Screen is to identify those who screen positive for further assessment, it is also very useful for identifying the relative pre-program risk since it is completely filled out for every parent of a newborn. The specific study groups/comparison groups are described below and their relative risk level at pre-program stage is discussed when it is relevant to data analysis.

---

[11]   Please note this was changed to target child reaching 18 months of age as of October 2004.

33

FIGURE 3.1
Client Flow and Research Groups
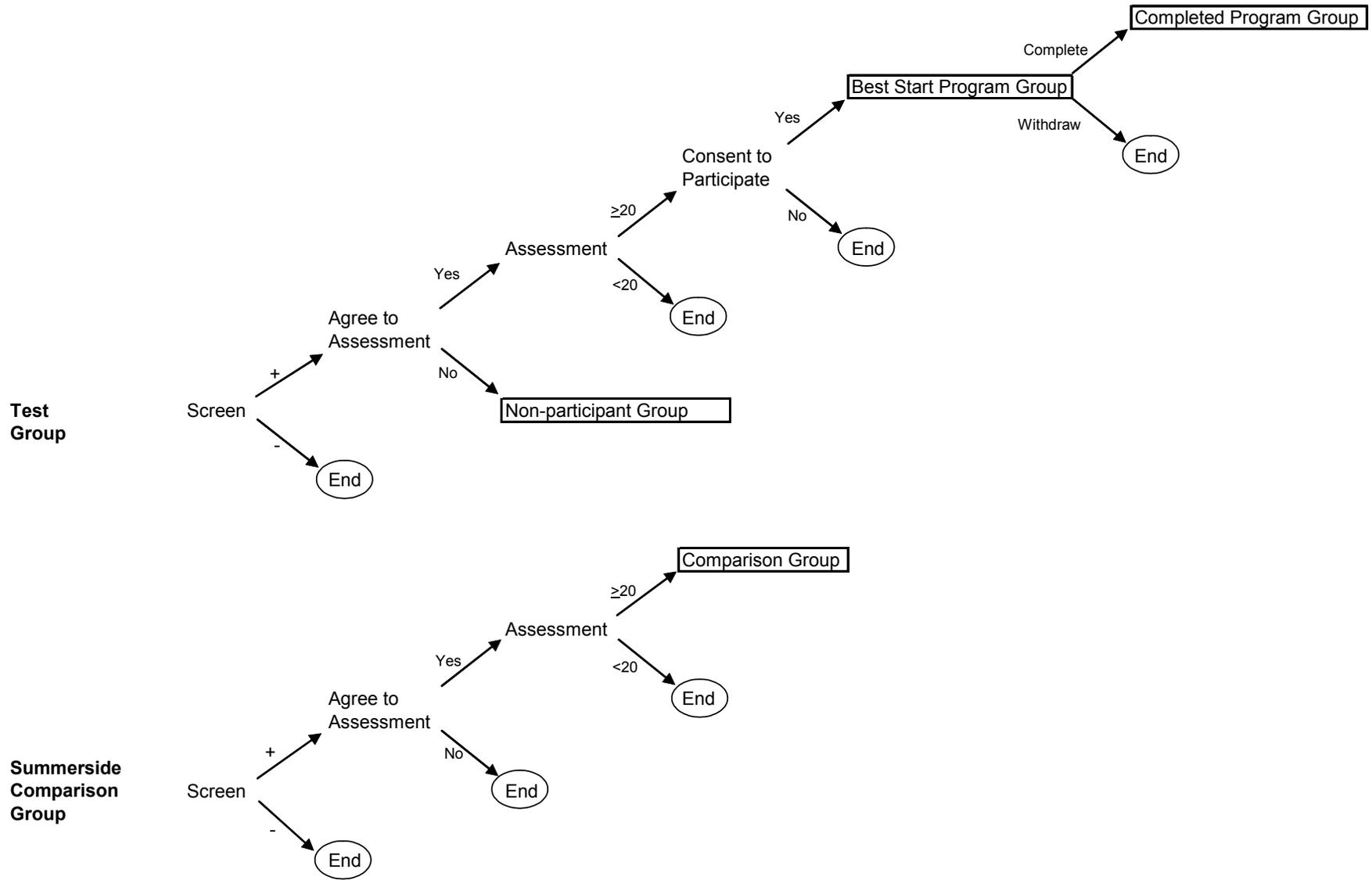
Figure 3.2
Study Sample and Comparison Groups by Outcome Measure

Study Sample/Comparison Groups		Outcome Measure

Best Start Clients who accepted the program; May 1999 -- Nov 2004 (n=542)	Positive screens who declined the program; May 1999 -- Nov 2004 (n=524)	- No outcome measures - Case flow and risk factor profiles
Best Start Program Group (active and new; Dec 2001 -- Nov 2004) (n=491)	Non-participant Comparison Group (n=50)	- Short-term standardized measures - Health utilization
Comparable Best Start Program Group (matched by time period of birth of child to Non-participant Comparison Group) (n=331)	Non-participant Comparison Group (n=50)	- Child Welfare involvement
Subsample of Active Best Start Clients (in program > 12 months) (n=50)		- Parent Survey (satisfaction with program and home visitor)
Completed Best Start Program Group (n=26)	Summerside Comparison Group (n=19)	- Long-term standardized measures - Child Welfare involvement - Health utilization

Data analysis focussed on comparison between these groups.

Best Start Program Group May 1999 to November 2004

This group consists of all of those families (n= 542) who were screened positive, assessed positive and accepted the program from May 1999 to November 2004. This group self-selected into the program, and it consists of just over 50% of all of those families who screened positive.

Positive Screens Declining Program May 1999 to November 2004

This group consists of all of those families (n= 524) who were screened positive and declined to become involved with the program from May 1999 to November 2004. This group self-selected out of the program, and it consisted of just less than 50% of all of those families who screened positive. Very little is known about those who declined to become involved with the program and thus, a sub-sample of non-participants (see Non-participant Comparison Group) was recruited and is discussed below.

Pre-program Comparison: Accepted/Declined Program

Data from the Record Screen provided a pre-program comparison for the mothers on the 17 risk items listed in the Record Screen for the two groups above. Interestingly, those who accepted the program appeared to be much higher risk than those who declined the program. The accepted program group was statistically significantly higher on 12 of the 17 items in comparison with those who declined the program. Specifically, the accepted program group was higher risk on partner unemployed, inadequate income, unstable housing, education under 12 years, inadequate emergency contacts, substance abuse,

poor prenatal compliance, relinquishment for adoption, family problems, depression, domestic violence, and involvement with criminal justice system (see Appendix A, Table A-1).

Best Start Program Group

This group consists of all of those families (n=491) who were active clients in December 2001 when the new phase of this current evaluation began or became active in the program between December 2001 and November 2004. This group self-selected into the program.

Non-participant Comparison Group

This group consists of 50 families who were recruited by the Public Health Nurses for the evaluation from the positive screen declined program group above. The recruitment of this group occurred at the fourth month visit to the homes by the Public Health Nurses since the fourth month visit was the final cut off for accepting the program. At this time, families who screened positive but declined to become involved in the program were asked if they would be involved in the evaluation as part of a non-program study group. If they agreed their contact information was passed on to the CRILF research team and they were interviewed twice over a 12-month period. They were paid $50 for each interview. In total, the Public Health Nurses referred the names of 81 families. Of these, the research team contacted 62 (when 50 had agreed to be in the comparison group, recruitment was discontinued); 50 of these agreed and were included in the study; and 12 declined involvement. Thus, the response rate was just over 80%.

Pre-program Comparison: Declined/Non-participant

As Figure 3.2 indicates, the above two groups were compared both for the short-term standardized measures (see Chapter 8.0) and health care utilization data (see Chapter 12.0). The key issue here was whether the Non-participant Comparison Group (n=50) was representative of the total population of the positive screens who declined to become involved in the program (n=524). As Table A-2 (see Appendix A) indicates, the Non-participant Comparison Group was very similar to the larger declined program group and thus was representative of that group in terms of the risk factors measured by the Record Screen items. There were only very slight differences between the two groups (most under 5%) with the exception of the history of involvement with the criminal justice system, where the declined program group reported just over 10% and the Non-participant Comparison Group reported 4% (this difference was not statistically significant).

Comparable Best Start Program Group

The Comparable Best Start Program Group matched by time period of birth of child to the Non-participant Comparison Group (n=331) was constructed specifically for the data analysis of Child Welfare involvement (Chapter 11.0). The intent was to create a study group which would equalize the amount of time in which each group would have possible involvement with Child Welfare.

Pre-program Comparison: Comparable Best Start/Non-participant

Data from the Record Screen provided a pre-program comparison of the families on the 17 risk items listed in the Record Screen for the Comparable Best Start Program Group and the Non-participant Comparison Group. Overall, it appeared that the Comparable Best Start Program Group was a significantly higher risk group than the Non-participant Comparison Group. As Table A-3 (see Appendix A) indicates, the Comparable Best Start Program Group was higher on 14 of the 17 items than the Non-participant Comparison Group and five of these differences were statistically significant. This would lead us to expect a higher level of involvement with Child Welfare for this group in comparison to the Non-participant Comparison Group.

Sub-sample of Active Best Start Clients

A sub-sample of active Best Start clients (n=50) was randomly chosen from a total of 82 clients who had been in the program for more than 12 months. The CRILF research team administered the Parent Survey by a telephone interview. The primary purpose of this interview was to identify the satisfaction of the clients with the program and the home visitor (see Chapter 10.0).

Pre-program Comparison: Completed/Did Not Complete Parent Survey

Given that the research team was dependent upon the Best Start workers for the recruitment of the sub-sample of active Best Start clients, the key issue is whether this group is systematically different than the group that did not complete the survey. As Table A-4 (see Appendix A) indicates, the group that did not complete the Parent Survey is only slightly higher risk than the completed survey group; however, none of these differences were statistically significant. The only difference that was statistically significant was that the completed survey group had a higher proportion of clients with education under 12 years than the group that did not complete the Parent Survey.

Completed Best Start Program Group

A sample of clients who completed the Best Start program was also identified in order to determine the longer-term effects of the program. In April 2004, the CRILF research team identified 40 families that had completed the program after 36 months of involvement. The Best Start workers were able to contact 28 of these clients, all of whom agreed to be contacted by the research team for interviews. The CRILF research team was able to contact 26 of the 28 and all of these agreed to be interviewed.

Summerside Comparison Group

CRILF began data collection in 1999 with the Summerside Comparison Group at the beginning of the previous evaluation study (see Elnitsky et al., 2003). When the second phase of the study began in December 2001, the decision was made to continue to follow this group in order to make comparisons with the program completed group to identify the long-term effects of the Best Start program. We continued to pay this group ($20 per

interview) and were successful at keeping all 19 participants involved in the study up to November 2004.

This group was originally selected from Summerside and the East Prince area since this was the second-largest community in the province and thus the most similar to Charlottetown. Further, at the time it did not have a Healthy Families home visitation program. Because of budget limitations, as well as the limited population in Summerside, we decided to include only 20 families in this comparison group. Further, since the recruitment of this group occurred prior to universal screening in the province, the Public Health Nurses in Summerside were instructed to identify families that fit the Record Screen requirements. In order to facilitate the identification process, CRILF provided the Summerside Public Health Nurses with a statistical profile of Best Start clients to date and instructed them to identify similar families and complete the Record Screen. If the families screened positive, they were informed about the study and ask to participate. A retired Public Health Nurse, hired by CRILF and trained as a research assistant, then administered the instruments based on the testing schedules. The same research assistant continued to work for CRILF following these families until data collection was completed in November 2004.

Pre-program Comparison: Completed Program/Summerside

As Figure 3.2 indicates, the Completed Program Group and the Summerside Comparison Group were compared for differences on the long-term standardized measures (Chapter 9.0), Child Welfare involvement (Chapter 11.0), and health care utilization (Chapter 12.0). Thus, it was important to examine the similarity/dissimilarity of these groups on the pre-program risk items. As Table A-5 indicates (see Appendix A), the Completed Program Group was somewhat higher risk than the Summerside Comparison Group. Note for example, that two of the three significant differences between the groups indicated that the Completed Program Group was higher on depression and involvement with the criminal justice system. In contrast, the Summerside Comparison Group was only significantly higher on marital status (single, separated or divorced).

3.3.5 Standardized Instruments

Two sets of standardized instruments were used in this evaluation. First, measures of short-term outcomes which focus on families with children aged 0 to 3 were administered to the families during their involvement with the program by the Best Start workers. These are contained in Table 3.2.

The choice of these instruments was based upon three criteria: (1) fit with the stated objectives of the program; (2) use in prior evaluations of home visitation programs; and (3) relevance of the instrument to the Best Start workers. Further, when possible, priority was given to instruments that had been "normed" or "standardized" on a large sample of individuals from the general population, providing an indication of how parents or children compare to others. The population average, derived from this standardization process, was used as a basis for comparison on these measures.

Table 3.2
Standardized Instruments Used to Measure Short-term Outcomes in Best Start Program (Children Aged 0-3)

Instrument	Description	Administration	Validity/Reliability
Record Screen	- a checklist of 17 items (risk factors) related to current or historical experience of the parent - the screen was adopted from the Healthy Families Training Manual - if the parent scores positive they are asked to complete the Family Stress Checklist assessment	- these are administered to mothers of all newborns by Public Health Nurses within the first few visits to the family - this measure was not repeated	- N/A
Family Stress Checklist (FSC)	- checklist has 10 assessment areas which focus on markers of stress within the family (e.g., history of abuse, drug use, mental illness, and domestic violence) - each area is scored 0-10 in increments of 5 - a score of 20 or higher is a positive assessment	- these are administered to mothers who screened positive on the Record Screen by specially trained Public Health Nurses - takes one to two hours to complete - this measure was not repeated	- Inter-Rater=.93
Family Assessment Device (FAD)[1]	- 12-item questionnaire designed to assess general family functioning.	- self-administered or read to the mother by the Best Start worker - used only when a partner lives with the mother	- Test-Retest = .71 at 1 week
Child Development Inventory (CDI)[1]	- 39 true or false items to assess knowledge of child development (0-3 years). Measures: • emotional; • cognitive; • physical; and • social development	- self-administered or read to the mother by the Best Start worker	- Internal consistency = .93 for KCDI
Maternal Social Support Index (MSSI)[1]	- 18-item questionnaire which provides information on the following three subscales: • day-to-day help around the home; • social support network; and • community contact and social support	- self-administered or read to the mother by the Best Start worker	- Test-Retest = .72 at 8 weeks
Center for Epidemiological Studies Depression Scale (CES-D)[2]	- 20-item questionnaire that focuses on the core symptoms of depression.	- self-administered or read to the mother by the Best Start worker	- Test-Retest = .57 for patient population - Internal consistency = .90

Table 3.2 (cont'd)

Instrument	Description	Administration	Validity/Reliability

The Home Observation for Measurement of Environment Scale (HOME)[2]	- 45-item checklist (+ or -) designed to assess:
	  • I emotional and verbal responsivity
	  • II acceptance of child behaviour
	  • III organization of environment
	  • IV provision of play material
	  • V parental involvement with child
	  • VI opportunities for variety
	- Note: sub-scale III and IV have been modified to reflect cultural sensitivity.
		- checklist is filled in by an observer, the Best Start worker
		- used <u>only</u> if the Best Start workers want to use it as a checklist
			- Test-Retest = .64 to .77 at 12-24 months

Carey Infant Temperament Questionnaire (Carey) (revised)[3]	- 54-item questionnaire for assessing temperamental characteristics of infants four to eight months.	- self-administered or read to the mother by the Best Start worker	- Test-Retest = .66 to .81

Denver Developmental Screening Test (DDST II or Denver II)[4]	- a clinical screening tool designed to assist in early detection of developmental delays. It is composed of 105 items for children two weeks to 6.4 years old. The areas covered include:
	  • personal – social
	  • fine motor adaption
	  • language
	  • gross motor coordination
		- involves the Best Start worker asking the parent questions and having the child perform certain tasks	- Test-Retest = .89 at 7-10 days; same tester
			- Inter Rater = .99

[1] These instruments are administered every 12 months.

[2] These two instruments are contained on the MIS but administration for the purpose of the evaluation is optional. If the worker chose they may administer these to help in clinical decision making.

[3] The Carey is administered at five months and the Parents Perspective scale is repeated at 12 months.

[4] The Denver is first administered at three months then every six months.

For the purpose of the process analysis, the first time these measures were administered provided a detailed picture of the needs of the clients. For the purpose of the outcome evaluation, examining change in scores across time (i.e., from the first administration to the second, from the second administration to the third administration and so on) provided an indication of program success. All of these instruments are contained in the Best Start client file Management Information System (MIS) discussed above and were administered by the Best Start workers at 12-month intervals.

The second set of measures contained in Table 3.3, are measures of longer-term outcome which focus on families with children aged 3 to 6. These instruments were administered by the CRILF research team to the Completed Program Group and the Summerside Comparison Group at approximately 12-month intervals. The criteria for the choice of these instruments was as follows: (1) fit with the stated objectives of the program; and (2) used in prior evaluations of home visitation and early childhood programs. Likewise, preference was given to instruments that have been "normed" or "standardized."

Strategy for Analysis of Standardized Measures

During the previous three-year pilot study of the Best Start program and programs at other sites across Canada, it was very difficult to demonstrate the effectiveness of these early intervention programs for at least four reasons: (1) the nature of the clients themselves; (2) the difficulty in accurately identifying what services were received; (3) the difficulty in identifying and tracking relevant outcomes and benefits; and (4) the effects of history (e.g., changing societal events) on the clients over time.

As indicated above, the previous evaluation indicated that client families who received the Healthy Families programs were a very heterogeneous group. Even though these client families were assessed as "families at risk," the specific strengths and weaknesses of the individual families were unique and only a few characteristics were commonly shared, i.e., most clients were young, single, poorly educated and had children with difficult temperaments. This makes these families both difficult to serve and difficult to evaluate. Further, because of the unique needs of these families, the specific program goals and activities differ significantly from family to family.

As indicated above, the standardized measures were first administered to clients early in the program (most within the first three months) to provide a detailed picture of the clients' needs. This picture indicated that few clients shared the same pattern of needs. Thus, since all instruments were standardized and "normed" on large samples from the general population, it was possible to determine cut off scores or predetermined boundaries for each instrument which distinguished between those clients who "needed to improve" on any specific scale from those who were in the normal range and had no need to improve.

Table 3.3
Standardized Instruments to Measure Long-term Outcomes for Best Start Program (Children Ages 3-6)

Instrument	Description	Administration	Validity/Reliability
Parenting Sense of Competence Scale (PSOC)	• Provides mid-term outcome data related to parents' adaptation to their role as parents • Consists of 16 items and produces scale scores for Parent Satisfaction (with the role of parent) and Parent Efficacy (feelings of self-efficacy related to parenting)	• Applicable to parents of children aged 0 to 6 • Can be self-administered by parent or workers	• Test-Retest = .46 to .82 at 6 week period • Internal reliability = .72
Social Network(s) Index (SNI)	• Fills in the gap related to the level of social connectedness or isolation and support experienced by client families • Covers the amount of social contact with friends and neighbors • Asks parents about the extent of their contacts over the previous three weeks with friends, relatives, and neighbours • Consists of 12 questions	• Self-administered or by worker	• Test-Retest = .92 at 14 weeks; University freshmen
Crisis in Family Systems Scale (CRISYS)	• Provides an overview of the nature and impact of life events on client families • Includes how much stress client families have and how much it is impacting their life	• Self-administered consisting of two parts • Families answer a number of questions circling yes or no to whether a particular event has occurred in the last 6 months • Families rate the level of difficulty surrounding that event	• Test-Retest = .88 at 2 week period

Community Contact and Referral Tracking System	• Designed as a systematic means for collecting and organizing community contacts and referrals recommended and/or facilitated by program staff
	• Based on a category system of organizing those contacts
	• The category system will be used to construct the:
	  - CCRT Parent Survey
	  - CCRT Knowledge Survey
		• The main contact and referral tracking system will be used by program personnel to enter referrals and contact information on a regular basis	• N/A

Child Behavior Checklist (CBCL)	• Consists of 99 behavior problem items that can be scored on the Child Behavior Profile for ages 2-3
	• Scoring profile consists of six scales derived from factor analyses of checklists filled out by parents of 400 2-3 year olds
	• The six scales are:
	  - anxious/depressed - somatic problem
	  - withdrawn - aggressive behavior
	  - sleep problems - destructive behavior
		• Administered to care giver and takes approximately 20 minutes to complete	• Test-Retest = .92 at 1 week for boys ages 4-5 and .93 at 1 week for girls ages 4-5

Given that the sample of Best Start clients was relatively large, we were able to dichotomize the sample for each instrument by those clients who needed to improve and compared them with those who did not need to improve and identified what change occurred over time. This approach was employed for analyzing the standardized outcome instruments when possible. There is the possibility that this procedure may well increase regression to the mean, which could be a considerable threat to internal validity. There are recently developed procedures for using test/re-test reliability coefficients to estimate the magnitude of regression to the mean, thus correcting change scores for instruments for which the reliability coefficients is known (see Trochim, 2002). However, the correction of change scores using re-test correlation coefficients requires that the coefficients "must come from reliable studies with subjects and the time between tests similar to those of your study" (Hopkins, 2002).

We have included test/re-test scores and the time intervals in Tables 3.2 and 3.3, which list the standardized instruments. It is obvious that these are not well matched to the current study and thus bring to question the use of these coefficients in the current study. In addition, it is only in "extreme cases of r=0, scores on re-test regress, on average, all the way back to the mean" (Hopkins, 2002, p. 2). Thus, given the test/re-test scores in Tables 3.2 and 3.3, it is likely that any change in scores over the testings is only partially due to regression to the mean. Further, this limitation can be minimized in quasi-experimental designs by careful interpretation of the comparison group changes over time.

3.3.6 Parent Survey

A total of 50 clients who had been in the program for a minimum of 12 or more months were randomly chosen from a list of all active clients who had been in the program for at least 12 months. All of those contacted agreed to participate and were interviewed. Two survey instruments were utilized: a Home Visitation Parent Survey that was based on one used in 2001 for a survey of Healthy Families program clients (Elnitsky et al., 2003), and the Visitor-family Relationship Inventory. The Parent Survey focuses on how the program has affected the client's life, as well as its impact on their child and other family members. The Visitor-family Relationship Inventory contains 26 statements describing different views the client may hold about the family visitor. Respondents were asked to rate on a Likert scale their level of agreement with each statement in the Inventory.

A project researcher contacted clients by telephone from May through July 2005 in order to conduct the survey. On average, the interviews took about 20 to 30 minutes.

All individuals freely volunteered to participate in the survey. They were informed that their participation (or refusal) did not in any way affect their eligibility to receive home visitation services, and that their participation was confidential.

3.3.7 Child Welfare Data

A request for Child Welfare data was initially made to the Prince Edward Island Department of Health and Social Services in January 2005. The request specifically asked for data on four study groups:

1. Best Start Program Group – Best Start families who had an active file with Best Start during the period December 1, 2001 to December 31, 2004;

2. Completed Program Group – Best Start families who completed three years with the Best Start program and agreed to participate in the research (a subset of the Best Start Program Group);

3. Non-participant Comparison Group – Families who were eligible for and declined the Best Start program and agreed to participate in the research; and

4. Summerside Comparison Group – Families who were eligible for the Best Start program in 2000 and agreed to participate in the program.

The request specified that the review should include the following information regarding formal investigations (assessments were not included) concerning the client mother and targeted child: date of investigation; investigation outcome – founded or unfounded; and for investigations in which the child was found in need of protection, the action taken. In addition, for each service action, the legal authority, placement type, duration of placement, and service contract type were also recorded. CRILF provided the names of individuals within each study group to be included in the review. File reviews were conducted during April and May 2005 and received by CRILF in June.

3.3.8 Health Data

A request for health data was initially made to the Prince Edward Island Department of Health and Social Services in March 2005. The request specifically asked for data on four study groups:

1. Best Start Program Group – Best Start families who had an active file with Best Start during the period December 1, 2001 to December 31, 2004;

2. Completed Program Group – Best Start families who completed three years with the Best Start program and agreed to participate in the research (a subset of the Best Start Program Group);

3. Non-participant Comparison Group – Families who were eligible for and declined the Best Start program and agreed to participate in the research; and

4. Summerside Comparison Group – Families who were eligible for the Best Start program in 2000 and agreed to participate in the program.

The request specified that the data on target children should include the following: number of emergency room visits and reported illness/injury; number of hospitalizations and reported illness/injury (excluding the birth event); number of visits to a family physician; and number of visits to specialists/pediatricians. In addition, data were requested on the target

child by age of the child for each year from birth to age six. Data were also requested in these categories for the general population excluding study participants and stillbirths. CRILF provided the names of individuals within each study group to be included in the review. The data runs were conducted by the Department and received by CRILF in May 2005.

4.0   PROGRAM DESCRIPTION

This chapter describes the general model of the Healthy Families program upon which the Best Start program is based, and outlines the program's goal, objectives and anticipated outcomes.

4.1   Healthy Families America Program

Healthy Families America (HFA), which provided the model for Best Start, is a focussed, intensive family visitor program for new parents to help their children get a healthy start. The program promotes positive parenting and child health and development, with the intention of preventing child abuse and other poor childhood outcomes. The vision of the HFA program is to offer all new parents support when their babies are born and to offer those parents facing the greatest challenges intensive home visitation services. The program is based on existing research and has evolved from the Hawaii Healthy Start program.

The HFA approach to home visitation is defined by a set of critical program elements developed on the basis of past research. These elements are organized into three areas: initiation of service; service content; and selection and training of service providers.

Initiation of Service

Service must be:

- initiated prenatally or at birth;

- based on the use of a standardized assessment tool to identify families who are most in need; and

- voluntary with positive, persistent outreach.

Service Content

Services should be:

- offered intensively (at least once a week) with well-defined criteria for increasing or decreasing intensity of service, and over the long term (initially up to three years, after October 2004 up to 18 months);

- culturally sensitive, relevant and appropriate;

- focused on supporting the parent(s) as well as supporting parent-child interaction and child development;

- focused on linking families to community resources to ensure optimal health and development; and

- provided by staff with limited caseloads to assure an adequate amount of time to spend meeting the unique needs of each family and to plan for future activities.

Selection and Training of Service Providers

Service providers should:

- be selected because of their personal characteristics (non-judgmental, compassionate, able to establish a trusting relationship), their willingness to work in or their experience in working in culturally diverse communities, and their skills to do the job;

- receive basic training in areas such as cultural competency, domestic violence, drug-exposed infants, and services available in the community;

- receive intensive training specific to their role to understand the essential components of family assessment and home visitation; and

- receive ongoing, effective supervision.

4.2   Best Start Program

Best Start is a province-wide screening, assessment, and in-home visiting program for newborn infants and their families. The overall mission for the Best Start program is to maximize the development of young children and their families in order to increase the children's opportunities for later success.

The program focuses on prevention and the achievement of health as a result of interventions aimed directly at the newborn. The primary target population for Best Start was initially children from 0-3 years in Prince Edward Island. After October 2004, the target population was changed to children up to 18 months old. The secondary target population is young, single parents who are at risk. The maximum age limit for intake of target children is 6 months.

The host agency for Best Start is C.H.A.N.C.E.S. (Caring, Helping, And Nurturing Children Every Step), which is a non-profit community agency funded by Health Canada under the Community Action Program for Children (CAPC). The mandate of C.H.A.N.C.E.S. is to actively contribute to the healthy development of children from conception to age 6 by establishing a Family Resource Centre in Charlottetown and offering a continuum of programs and services for children and their parents.

4.3   Program Goal, Objectives and Outcomes

The Best Start goal is to maximize the development of young children and their families, particularly those experiencing conditions of risk and thereby reducing the risk of future involvement in criminal activity.

4.3.1 <u>Objectives</u>

The objectives of Best Start are to:

- reduce the risk of abuse and neglect in early childhood;

- enhance the capacity of parents to parent effectively;

- increase the likelihood of healthy child development outcomes for the child;

- impact the child's readiness to learn upon school entry;

- promote positive parent-child interaction; and

- promote parents' personal development.

4.3.2 <u>Anticipated Outcomes</u>

The anticipated outcomes of the Best Start program include parent/family-related outcomes, child-related outcomes, and community-related outcomes.

<u>Parent/Family-Related Outcomes</u>

- Systematically assess families of newborns for strengths, needs, and risks, and refer as needed.

- Enhance family functioning by building trusting relationships, teaching problem solving skills, improving the family's support system, and increasing the family's level of community contact and involvement.

- Promote parents' personal development, for example:
  - increase knowledge of child development;
  - increase level of education and employment; and
  - increase coping abilities and reduce stress.

- Promote positive parent-child interaction and parent behaviours that optimize child development.

<u>Child-Related Outcomes</u>

- Promote healthy childhood growth and development, for example:
  - full immunization;
  - decrease readmission to hospital of infants after birth;
  - increase readiness to learn;
  - early identification of disabilities; and
  - improved social functioning.

<u>Community-Related Outcomes</u>

- Increase appropriate utilization of health care system.

- Decrease rates of child abuse or neglect.

- Decrease dependence on income security.

- Increase collaboration and capacity with service providers in the community.

5.0   PROGRAM INPUTS

This chapter documents program implementation up to December 31, 2004 with respect to the following inputs: funding; operational structure; staff; training; and partnerships.

5.1   Funding

Funding for the Best Start program has been made available from the National Crime Prevention Centre (NCPC), Justice Canada and the province of PEI. NCPC has assumed responsibility for the cost of replicating the Best Start program in Prince and Kings Counties. The province of PEI has assumed responsibility for the cost of the continued operation of the current Best Start program in Queens County. The province of PEI agreed to gradually assume financial responsibility for Best Start in Prince and Kings counties over a four-year time period. In 2004, funding of all programs was reviewed by the provincial government and the funding for Best Start for 2004-2005 was maintained at the 2003/2004 level, which meant that the funding from the province was $155,000 less than expected. The province did, however, continue to fund the Public Health Nursing component of the program at approximately $186,000 per year. The total budget for the 2004/2005 fiscal year was $991,581 ($380,761 from NCPC; $379,000 from the provincial government; and $231,820 in-kind).

Comprehensive consultations regarding the funding loss and funding options took place during August and September 2004. Consultations including C.H.A.N.C.E.S. and Best Start staff, Core Working Groups and Operational Planning Committees, partners, CRILF and C.H.A.N.C.E.S. Board of Directors took place. The purpose of the consultations was to maintain the integrity of the Best Start program in making recommendations for program adjustments based on the funding loss. It was decided to reduce participation time in the program from 36 months to 18 months. From October 1 to December 31, 2004 a total of 50 families finished the program at 18 months: 44 in Queens Region and 6 in East Prince Region. Protocols were developed to manage the caseload and create opportunity for families that needed more time in the program to exit the program without significantly increasing risk.

5.2   Operational Structure

The Board of Directors of C.H.A.N.C.E.S. Inc. Family Resource Centre is the legal entity with overall responsibility for the province-wide Best Start program as is pictured in Figure 5.1. The following key elements are part of the responsibility of C.H.A.N.C.E.S. Inc.:

- Being financially accountable to funding partners.

- Establishing policies and guidelines related to the Best Start program.

- Managing the provincial Best Start program by providing direct supervision and support of all personnel working in the in-home visiting component of Best Start.

FIGURE 5.1
Best Start Governance and Management
(December 2004)

```
┌─────────────────────┐          ┌─────────────────────┐
│   National Crime     │          │  Ministry of Health  │
│  Prevention Centre   │          │  and Social Services │
└─────────────────────┘          └─────────────────────┘
              │                            │
              └────────────┬───────────────┘
                           │
              ┌─────────────────────────┐
              │   C.H.A.N.C.E.S. Inc.    │
              │   Board of Directors     │
              └─────────────────────────┘
                           │
              ┌─────────────────────────┐
              │   Executive Director     │
              │     C.H.A.N.C.E.S.       │
              └─────────────────────────┘
                           │
┌─────────────┐            │            ┌─────────────────────┐
│  Provincial │────────────┼────────────│     Provincial      │
│ Coordinator │            │            │ Advisory Committee  │
└─────────────┘            │            └─────────────────────┘
                           │
┌──────────────────────┐   │   ┌──────────────────────┐
│ Queens and Kings County│  │   │    Prince County     │
│      Operational       │──┼───│     Operational      │
│      Committee         │  │   │     Committee        │
└──────────────────────┘   │   └──────────────────────┘
        ┌──────────────────────┐        ┌──────────────────────┐
        │  Best Start Coordinator│       │ Best Start Coordinator│
        │   (Queens and Kings)   │       │       (Prince)        │
        │     C.H.A.N.C.E.S.     │       │     Kids R First      │
        │  Family Resource Centre│       │ Family Resource Centre│
        └──────────────────────┘        └──────────────────────┘
          │                │               │                │
┌────────────────┐ ┌────────────────┐ ┌──────────────┐ ┌──────────────┐
│ Main Street     │ │  Carousel      │ │ Coalition    │ │  Kids West   │
│ Family Resource │ │  Family        │ │ Actions      │ │              │
│ Centre*         │ │  Resource      │ │ Pour Enfants │ │              │
│                 │ │  Centre        │ │              │ │              │
└────────────────┘ └────────────────┘ └──────────────┘ └──────────────┘
```

* Main Street Family Resource Centre was previously called Lend a Hand Family Centre.

- Coordinating Best Start across the province to ensure that Best Start is implemented in a systematic and standardized way, while allowing the flexibility required to respect and address regional needs.

- Working in partnership with the Ministry of Health and Social Services in establishing provincial and regional mechanisms that will provide ongoing consultation, advice and support for the Best Start program.

- Partnering with five of the Family Resource Centres across the province to implement the in-home visiting component of Best Start in the respective regions and building partnerships with each of the respective Health Authorities for the provision of screening and assessment through Public Health Nursing.

- Providing initial and on-going training as required for Best Start staff, including for screening, assessment and in-home support.

The Executive Director of C.H.A.N.C.E.S. is accountable to the Board of Directors of C.H.A.N.C.E.S. and has responsibility for managing the province-wide Best Start program, maintaining and supporting partnerships, and linking with the funders.

The Best Start Program Coordinators are accountable to the Executive Director and manage the supervisors and workers in each respective region. The Best Start Provincial Coordinator, who was seconded from Queens Health Region in January 2003, supports the implementation of Best Start across the province.

Each of the four health regions has a Public Health Nurse who is designated as responsible for the Best Start program. The designated nurse provides support and resources for the Public Health Nurses who conduct the screens and assessments, reviews all assessments, and is responsible for collecting statistical data on the screens and assessments. The Public Health Nurse responsible for the program in Queens County supports the province-wide expansion of Best Start by providing training and other resources to the nurses.

Two committees were established to provide provincial and regional consultation and support: the Prince County Operational Committee; and the Queens and Kings Operational Committee. These committees have membership that includes all of the key directors from the respective Health Regions, representatives from the Family Resource Centres, and Best Start. The role of the Operational Committees is as follows: to function in support of Public Health Nursing and the Best Start workers; to provide support and guidance regarding operational issues; to nurture partnerships; and to facilitate appropriate referrals to other programs and services within each Health Region. The Operational Committees have been co-chaired by the Executive Director of C.H.A.N.C.E.S. and a representative from the respective Regional Health Authority. Terms of Reference have been developed and formally adopted for each committee.

Four core working groups, organized by geography, were also established to provide regional consultation and support: West Prince Core Group; East Prince Core Group;

Kings County Core Group; and Queens Core Group. The membership of the groups has consisted of representatives from Public Health Nursing, Child and Family Services and Best Start. The primary function of the core groups is to facilitate the delivery of services between Public Health Nursing, Best Start and Child and Family Services. The core groups have been co-chaired by the regional Best Start Coordinator and a representative from the regional Public Health Nursing office. Terms of Reference have been developed and formally adopted for each of the working groups.

The Provincial Advisory Committee was established and met on October 8, 2004. The Committee has representation from the Best Start program (Best Start Provincial Coordinator), Child Secretariat, PEI Director of Social Policy, C.H.A.N.C.E.S. Board of Directors, and NCPC.

A number of policies were developed and adopted to provide direction for the program, including the following: Governance Model; Coordination, Consultation and Support Model; Memorandum of Understanding between C.H.A.N.C.E.S. and each of the other six Family Resource Centres; Best Start and Child Protection Protocol; Engagement Protocol; and Transfer Policy.

The purpose of the proposed Best Start and Child Protection Protocol is to ensure clear and open communication between Child Protection Services and the Best Start program that supports decision making as to the most appropriate program response. The principles of the protocol are as follows: Best Start is an early prevention program focussing on prevention, and as a preventative program, Best Start is not intended to provide services to families when they are actively engaged with a child protection service. The protocol includes the following procedures:

1. Families who participate in the Best Start program voluntarily sign a release of information yearly, which ensures that there are no active protection services.

2. If Child and Family Services become involved with a family because of protection concerns, Best Start will be advised of open protection service.

3. The Child and Family Services child protection supervisor or intake supervisor may choose to discuss with the Best Start Coordinator the nature of the protection concerns to determine the most appropriate service, through a conference process.

4. If the nature of the child protection involvement is less than six months, the Best Start Coordinator may choose to maintain the service in the family. Otherwise, the service will be terminated.

5. Child and Family Service may refer a family to the Best Start program if the family was initially in the program and the protection services have terminated and the break in service is less than six months.

The Best Start and Child Protection Protocol, which has not been formalized through approval by the Director of Child Welfare, has been under review because of the increasing number of families that remained in Best Start while receiving protection services. There is

now an informal agreement at the senior level of the Health Regions that a more comprehensive response to families receiving protection services is required. Therefore, a process will be developed to formally review and continue Best Start services to families with open protection services.

The purpose of the Engagement Protocol is to maximize the opportunity for eligible families to participate in the Best Start program. In order to provide families with multiple opportunities to engage with the program, families who are eligible for the program will have until the child's fourth month to initially participate in the program. The principles of the protocol are as follows: all families who screen positive for the program should be given every opportunity to participate in the program; a family's readiness to participate in the program may vary and families should be given the opportunity to reconsider their decision; and all families will be given the opportunity to engage with the Best Start program either prenatally or at birth, 2 months and 4 months.

The purpose of the Transfer Policy is to provide for a smooth transition of Best Start families from region to region and within a region. The transfer of family must be done in a manner that is respectful of the family and the case plan that has been established with the family and the future plans of the family. The policy includes the following procedures:

1. The transfer of families must be coordinated between the Regional Best Start Coordinators to ensure the appropriate assignment.

2. Files should be sent to the Regional Best Start Coordinator.

3. An up-to-date case plan should be on file along with a transfer summary that must be completed when the file is transferred.

4. Every effort should be made to ensure that personal transfers are done to ensure the new Best Start worker is personally introduced to the family.

5. Only in rare exceptional circumstances should file transfers take place.

6. When a transfer occurs, the case plan should be reviewed with the new Best Start worker and the family.

7. Transfers should be done in a planned, organized and timely manner.

An informal policy was developed to deal with repeat pregnancies among Best Start mothers. It was decided that those families that qualified after being re-assessed by a Public Health Nurse would be re-offered the program.

5.3   Staff

The Provincial Coordinator has supported the implementation of the Best Start program across the province. In this capacity the Coordinator has facilitated the establishment of the core working groups and Operational Planning Committees, has developed Terms of Reference for each committee, has developed program policies and

protocols, has attended committee meetings and prepared minutes, and has coordinated and presented information sessions on Best Start to service providers in all provincial health regions.

As of November 30, 2004, there were two Best Start Program Coordinators: one Coordinator for Queens and Kings Regions and one Coordinator for East Prince and West Prince. The Program Coordinator for Queens and Kings managed one full-time supervisor in Queens and one part-time supervisor in Kings. The full-time supervisor in Queens supervised four workers and one worker/supervisor, who in turn supervised two workers. The part-time supervisor in Kings supervised two workers. The Program Coordinator for East and West Prince managed one full-time supervisor in East Prince and supervised two workers in West Prince. The full-time supervisor in East Prince supervised one worker at Cap Enfant in Wellington and four workers in East Prince.

As of November 30, 2004, there were 17 Best Start workers: eight at Best Start in Charlottetown in Queens Region; two in Kings Region (one at the Main Street Family Resource Centre in Souris in Eastern Kings and one at the Carousel Family Resource Centre in Montague in Southern Kings); four at Kids R First Family Resource Centre in Summerside in East Prince; one at the Coalition Pour Enfants (Cap Enfant) in Wellington in East Prince; and two at Kids West in Alberton in West Prince. The Coordinator for East Prince and West Prince and two of the Best Start workers are fluently bilingual.

Staff turnover has been minimal. Between December 1, 2003 and November 30, 2004 one Best Start worker in Kings Region left permanently. The Coordinator for Queens Region and Kings Region returned from maternity leave. Two Best Start workers returned from maternity leave, one each in Queens and Kings Region.

Supervision and support for Best Start workers included formal weekly one-on-one meetings with their supervisor, informal discussion with their supervisor and Best Start Coordinator, and team meetings as required. All Best Start workers across the province meet once each month.

Hiring Committees, which were comprised of the Best Start Coordinator for Queens Region and management, staff and parents from the respective Family Resource Centre, interviewed and selected applicants for the new Best Start worker positions in each region. Best Start workers continued to be selected on the basis of a minimum of Grade 12 education and a combination of personal experience and qualities, maturity and formal training.

Each of the four health regions in the province has a Public Health Nurse who is responsible for the Public Health Nursing component of the Best Start program. The designated nurse provides support and resources for the Public Health Nurses, reviews each assessment, and is responsible for collecting statistical data on the screens and assessments.

As of November 30, 2004, there were 42 Public Health Nurses in the province: 17 in Queens Region; 11 in Kings Region (4 in Eastern Kings and 7 in Southern Kings); 10 in East Prince; and 4 in West Prince. All Public Health Nurses, as well as casual and part-

time nurses, have received the core Best Start training for nurses and all conduct screening and assessments. The community nurse for Lennox Island First Nations also conducts screens and assessments in that community. Public Health also provides bilingual screening and assessment services in Queens County and Prince County.

5.4   Training

The Best Start program has invested heavily in training and has two trainers certified with Great Kids Inc. Linda Smith was certified to conduct the home visiting training for Best Start workers and June Tessier was certified to conduct the screening and assessment training for Public Health Nurses. This investment has allowed for in-province training by local trainers as needed for new workers and nurses. The training of Best Start workers has been offered twice each year to accommodate the training requirements of new staff. The training of Public Health Nurses has been offered once each year.

All Best Start workers have received the four-day core training, as well as one-day core content training and on-going wrap-around training. The wrap-around training, which is presented by staff of C.H.A.N.C.E.S., government and community agencies, consists of approximately 40 sessions and is typically offered every six weeks. In addition, new workers had orientation to Best Start and their respective Family Resource Centre, participated in "shadow" visits with Best Start workers, and had self-directed study in the Best Start program, core content, and community services and resources in their respective region. Best Start workers are encouraged to take the four-day training every two years.

The Core Best Start Worker Training for new Best Start workers was conducted in June 2003, November 2003, and June 2004. Additional training included the new child protection legislation in January 2004, professional boundaries in January 2004, and a ropes course in June 2004. Additional training included: smoking cessation for pregnant women, family violence, home visitation, youth and peer violence. In September 2004, the workers participated in a one-day session regarding development strategies for families that would be offered an additional six months in the Best Start program. The training also focused on strategies that would help the workers deal with feelings of disappointment, frustration or anger that parents may have with respect to the reduction of services provided by the program.

Best Start supervisors have received training by Linda Smith. Ten staff attended two four-hour training workshops in 2004. In addition, training in Time Management and Reflective Supervision was offered to supervisors in March 2004.

Public Health Nurse training in screening and assessment consisted of a four-day intensive formal training session presented by a Great Kids Inc. certified trainer, as well as a one-day program manager training component. June Tessier, the Nursing Coordinator for Queens County provided this training for Public Health Nurses in October 2003 (nine participants) and in April 2004 (four participants). During 2003, the Nursing Coordinator, Queens Region also conducted one-day refresher training sessions on screening and assessment in Kings Region on January 15; in West Prince on March 18; and in East Prince on March 21, as well as a two and a half hour refresher session in Queens Region. Nurses had regular updates on Best Start during staff meetings and participated in regional

in-service training that was offered to Public Health Nurses and Best Start.

5.5   Partnerships

The key partners in Best Start are the provincial Ministry of Health and Social Services and the existing network of Family Resource Centres across PEI. The direct service delivery of Best Start is supported by a partnership between the provincial government system and the community-based system.

The delivery of Best Start is offered in partnership with Public Health Nursing, whose representatives are instrumental in establishing the program across the province. The nurses screen every newborn infant and their family, assess those families that are determined to have challenges and make referrals, where appropriate, to the in-home visiting component of Best Start.

Family Resource Centres are key partners in the Best Start program. The centres are: Main Street in Eastern Kings; Carousel in Southern Kings; Mik'maq Family Resource Centre, which serves the off-reserve Aboriginal community; Kids R First in East Prince; Cap Enfant, which serves the Francophone community; and Kids West in West Prince. Best Start workers are located in all centres with the exception of the Mik'maq Family Resource Centre. Workers in the centres are provided with office space, computers and telephone access.

The partnership with the Lennox Island First Nations Band has continued. The Lennox Island community nurse has received training in conducting screens and assessments and has referred families to Best Start. Best Start is also partnering with Scotchfort First Nations Reserve to provide services to families. Currently one family on reserve receives Best Start services.

Best Start is partnering with the PEI Active Living Alliance through a steering committee called Active for Life. The objective is to promote healthy physical activity in children from 6 months to 48 months of age. The project will develop materials that will promote the benefits of an active life style that parents of young children can use. Best Start will incorporate the information into the core content that has been developed.

Other informal partnerships include Queens Printer, which publishes brochures at minimal costs and the other Health Regions, which share information and resources.

The Best Start program has benefited from the reputation and acceptance of C.H.A.N.C.E.S., the other six Family Resource Centres, and Public Health Nursing. The Best Start program has also benefited from the pre-existing relationships of each of these agencies with their respective community and other agencies. Best Start staff have been able to capitalize on the experience and expertise of C.H.A.N.C.E.S., the other Family Resource Centres, and Public Health Nursing. In addition, Best Start families have increased access to the wide range of programs and services (i.e., parenting programs, drop-in play, toy lending) that are offered at C.H.A.N.C.E.S. and the other Family Resource Centres.

The involvement of the two Best Start Operational Committees and the five core groups has increased the awareness, understanding and acceptance of Best Start among other community agencies in each region. Public Health Nursing has representation on each of the core groups. The Family Resource Centres and Public Health Nursing have representation on each of the Operational Committees.

6.0   PROGRAM ACTIVITIES

There are three specific components of the services offered by Best Start: screening and intake; assessment; and home visits.

6.1   Screening and Intake

Public Health Nurses offer the Best Start program to all parents of newborns, as well as to expectant mothers who are referred prenatally. Public Health Nurses screen all families of newborn children within the first few visits (or prenatally), based on verbal consent of the parents.

Public Health Nurses use the standardized Record Screen, which was adapted from the Healthy Families Training Manual, as a pre-assessment screening tool. The screen consists of 17 statements that relate to issues the parent may be currently experiencing or has experienced in the past. A true score on the screen means the particular statement is an issue in the parent's life. The screen is scored positive if one of the following is true: single parenting; late prenatal care; or abortion sought or attempted with this pregnancy. Any two true scores on the other statements are considered a positive screen. Further, if information is not known for seven or more items, the screen is also scored positive.

If families initially refuse or move into the region after the birth of their baby, they may be referred to the program within six months of the birth of the baby. The two-month and four-month immunization visits provide opportunities to re-offer the program to those families who initially were not interested.

During 2003 Public Health Nurses continued universal screening in Queens Region and began screening in Eastern Kings on February 1, in Southern Kings on March 1, and in East Prince and West Prince on April 1. Universal screening continued after 2004.

6.2   Assessment

If families are screened as positive and are willing to be involved with the Best Start program, a strength-based assessment of the family is conducted by a Public Health Nurse. The Public Health Nurse obtains written consent from the parent(s) to complete the assessment.

The Family Stress Checklist (FSC) is used to gather information through a face-to-face interview with the parent(s) either prenatally or after the birth of their baby. The interview typically takes one to two hours to complete. The Checklist has 10 assessment areas, which are each scored on a scale of 0-10 in increments of 5. A total score of 20 or higher for either parent is considered a positive assessment. Families with a positive assessment are offered the in-home visiting component of the Best Start program.

The screening and assessment process offers parents the opportunity to talk about various aspects of their lives, including their own childhood, personal goals, knowledge of parenting, mental health history, drug or alcohol use, family violence, and criminal activity.

Assessments by Public Health Nurses in Queens County have continued. Assessments in the other regions were delayed due to unavailability of staff to conduct and document the interviews. The assessment process commenced in Eastern Kings in March 2003, and in Southern Kings in April 2003. The assessment process commenced in East Prince and West Prince in the early summer of 2003.

6.3   Home Visits

The Best Start program and services use a strength-based approach, which aims to support parents to take responsibility for growth and change in their family. The primary activity of the Best Start program is the home visit. Home visits provide comprehensive in-home support to families, which gives the worker an opportunity to work with families in their own environment, as well as establishing trust between the worker and family. Best Start workers provide support to families that includes the following: information and enhancement of skills in the area of child development and parenting; connections between parents and existing programs and services; focus on training and career planning for parents; and promotion of family literacy.

Home visits are approximately of one-hour duration and focus primarily on the parent-child relationship, healthy child growth and development, and enhancing parenting skills through the provision of information and support. Specific activities for each family are individualized and may include a range of topics, which include: developing relationships; providing support in problem solving; setting and monitoring goals; providing information on child development; encouraging and supporting positive parent-child interaction; referring families to community resources and facilitating contact; modelling good parenting practice; and responding to crisis.

A component of the home visit continues to focus on goal setting with families. Goal setting typically begins after the family has been involved with Best Start for three months, depending on their individual circumstances. A number of activities and forms are used by the workers to introduce the concept of goal plans and identify relevant goals with each individual family. Families' progress with goal plans is recorded on the computerized database.

Best Start has had a Quality Assurance Program in place since February 2002, which is updated annually. Assurance measures that are being used include the following: supervisors conducted telephone surveys of each worker's families to determine the quantity and quality of home visits; supervisors "shadowed" two home visits per worker; supervisors calculated the monthly percentage of home visits completed per worker and compared it to the standard; and supervisors conducted performance reviews of all new workers at six months and of all workers every 12 months.

The development of standardized information and resources for families began during the summer of 2002, when the Program Coordinator, Linda Smith, began refining program information and assembling a filing system of information by topic. In January 2003 two of the Best Start workers collaborated with the other workers in developing

materials for home visits for the other regions, including copies of the core content, toys and books. Linda Smith undertook the full development of core content during 2003.

Ms Smith first met with the Best Start Program Coordinators in December 2002 to discuss the need to develop core content and then met with the Coordinators and workers to identify topics for each developmental age, which included language and physical development. During March 2003, two of the Best Start workers assisted Ms Smith in identifying and accessing suitable resources. Ms Smith reviewed these resources and determined which would be included. The manual was finalized over the summer and was piloted during September and October 2003. The manual is considered an ongoing developmental process and will be added to or changed as required. However, proposed additions or changes to core content will be reviewed and approved by a committee prior to inclusion. The manual provides the Best Start workers with standardized information that is consistent with both the province and Health Canada.

Best Start Core Content is a significant contribution to the home visiting component of the program. This comprehensive curriculum is designed to support the development of nurturing and empathetic parent/child relationships for children aged 0 to 3 years. The focus of the Core Content Manual is on child development, health, parenting concerns, and the dynamics of the parent-child and family relationships. It contains a list of topics with supporting information and resources to be utilized by Best Start workers. It also contains a Best Start Core Content Checklist to aid workers in ensuring that all of the core information is provided to families.

The objectives of the Best Start Core Content are as follows:

- To clearly establish a core content for the Best Start Home Visiting Program.

- To ensure program continuity from one family to the next and among families in the program region.

- To ensure that families receive accurate, current and consistent information/messages on matters related to child care and parenting.

Best Start adheres to the Healthy Families system of client "levels" to determine the intensity of service required for each family. All families start at Level 1, which is the most intense level of service, and progress through less intense levels of service. For example, at Level 1 clients receive one home visit per week; at Level 4 clients receive one home visit every three months. Families participate at Level 1 for at least nine months after entering the program. Average participation at Level 1, however, has been 1.5 years. There is no standard time frame for participation at Levels 2 or 3.

6.3.1 <u>Creative Outreach</u>

Creative outreach provides flexibility for accommodating changes within families while maintaining contact. Best Start workers find it to be an excellent tool that ensures families access to full services when they are ready. The purpose of creative outreach is to create trust and demonstrate care for those families that have missed home visits.

Creative outreach includes making telephone calls, networking with Public Health Nursing, and leaving letters, cards, etc. The timing for initiating creative outreach usually depends on the individual circumstances of the family and the reason for the break in service. Best Start is flexible in how it applies the HFA guideline of closing a file after three months of no contact. If, for example, a family has had telephone contact over the course of three months, their file may be kept open for a longer period of time than a family that has had absolutely no contact with the Best Start worker. Creative outreach has been relatively successful, and the majority of families have re-engaged with Best Start as a result. Public Health Nurses have also become active in creative outreach efforts by attempting to reach those families that the worker cannot and encouraging them to connect with Best Start.

7.0   PROGRAM OUTPUTS: CLIENTS SERVED

This chapter presents information on the intake and flow of clients, as well as profiles of clients in terms of demographics, risk scores at assessment, and baseline scores on the standardized instruments administered as part of the outcome evaluation.

7.1   Client Intake

Detailed client intake information is available from Public Health Nurses' (PHN) records for the entire province and is presented in Table 7.1 for 2003 and 2004. As Table 7.1 indicates, there was considerable consistency in patterns of screenings, assessments, and referrals for 2003 and 2004. First note that screening of all live births is nearly universally conducted by PHNs with only approximately 10% not being screened. Of those few not screened most were either "not interested" (31.4%), felt they had "sufficient informal support" (27.4%), or had moved (12.5%), as is indicated by Table 7.2.

Table 7.1
Families Screened, Assessed, and Referred to the
Best Start Program at All Provincial Sites for 2003 and 2004

Best Start Program Sites	Number of live births	Total families screened		Families screened positive		Total families assessed		Families assessed positive		Total assessed positive and referred to Best Start	
2003											
	n	n	%[1]	n	%[2]	n	%[2]	n	%[2]	n	%[2]
Charlottetown	725	681	100.0	179	26.3	100	55.9	95	95.0	89	93.7
Summerside	263	240	100.0	74	30.8	47	63.5	45	95.7	45	100.0
Alberton	149	114	100.0	34	29.8	21	61.8	13	61.9	13	100.0
Montague	102	100	100.0	35	35.0	17	48.6	16	94.1	16	100.0
Souris	54	56	100.0	15	26.8	7	46.7	7	100.0	7	100.0
Total	1293	1191	100.0	337	28.3	192	57.0	176	91.7	170	96.6
2004											
	n	n	%[1]	n	%[2]	n	%[2]	n	%[2]	n	%[2]
Charlottetown	704	632	100.0	174	27.5	87	50.0	87	98.9	84	96.6
Summerside	323	285	100.0	77	27.0	44	57.1	43	97.7	43	100.0
Alberton	146	109	100.0	38	34.9	24	63.2	18	75.0	16	88.9
Montague	127	120	100.0	37	30.8	18	48.6	18	100.0	17	94.4
Souris	61	64	100.0	12	18.8	4	33.3	4	100.0	4	100.0
Total	1361	1210	100.0	338	27.9	177	52.4	170	96.0	164	96.5

Source of data: PHN records.

[1] Percentage based on number of births actually screened.

[2] These percentages reflect the proportion of families that were carried over from the column immediately to the left.

Of the families screened in 2004, a low of 18.8% for Souris to a high of 34.9% for Best Start Alberton were screened positive as is indicated by Table 7.1. Of the families screened positive, over half completed the assessment except in Souris. This ranges from a low of 33.3% of the families at the Best Start Souris site to a high of 63.2% at the Best

Start Alberton site. Virtually all (over 95%) of the families assessed positive (i.e., a score on the Family Stress Checklist over 20). Only the Best Start Alberton site was lower at 75%. Of the families who screened positive but did not complete the assessment, Table 7.2 indicates 47.3% said they were "not interested," and 30.5% indicated that they had "sufficient informal support." Further, the Record Screen data (see Table A-1, Appendix A) indicates that those who declined the program were significantly lower risk than those who accepted the program.

Table 7.2
Reasons Why Families were not Screened, Assessed, or Referred to
Program for All Provincial Sites for 2003 and 2004

Reason	Families not Screened		Families not Assessed		Families not Referred to Program	
	n	%	n	%	n	%
Known CP involvement	8	2.7	9	2.9	2	15.4
Family not interested	93	31.4	149	47.3	2	15.4
Family member not supportive of program	1	0.3	9	2.9	1	7.7
Family feels they have sufficient informal support	81	27.4	96	30.5	3	23.1
Family connected to Family Resource Centre	2	0.7	2	0.6	0	0.0
Family moved/unable to contact	37	12.5	16	5.1	0	0.0
Other	74	25.0	31	9.8	5	38.5
Total	296	100.0	312	100.0	13	100.0

Source of data: PHN records.

Table 7.3 contains an annual history of file status for Best Start Charlottetown from 1999 when the program opened its first case (May 1999) to December 31, 2004. In addition, Table 7.3 contains a history of file status for other Best Start sites for 2003 when intake began and 2004. In terms of Best Start Charlottetown, it is noteworthy that the program increased its caseload (i.e., total files open within the year) approximately 300% in 20 months (from 33 cases to 107 cases) and continued to grow until 2003 when caseloads seemed to stabilize at approximately 200 per year, which was the maximum estimated in the Best Start proposal (March 2002).

In terms of the total number of cases processed by the Best Start program, by December 31, 2004, Best Start Charlottetown had 374 files ever opened and the other Best Start sites had 168.

As the program in Charlottetown approached three years of operation, a number of families "completed" the program since the target child had reached three years old. In October 2004 "completing" the program was changed to the target child reaching 18 months old which significantly increased the number of cases which finished the program. By 2004, 27.8% of the cases receiving services that year completed the program and left. The 18-month limit was based on the need to save funds due to the cut backs in support from the provincial government.

Table 7.3
Case File Status by Year for Best Start Charlottetown
and Other Best Start Sites 1999 to 2004

File Status	1999	2000	2001	2002	2003	2004
Best Start Charlottetown						
Total files open[1]	33	107	141	164	193	205
Files open at year end	30	89	115	111	124	102
Closed assessment only	3	9	2	3	1	2
Closed home visits received[2]	0	9	23	36	40	44
Completed program	0	0	1	14	28	57
Annual completed rate[3]	--	--	0.7	8.5	14.5	27.8
Annual attrition rate[4]	9.1	16.8	17.7	23.8	21.2	22.4
Cumulative Total of Files Ever Open	**33**	**110**	**162**	**211**	**293**	**374**
Cumulative attrition rate including closed assessments only[5]	**9.1**	**19.1**	**28.4**	**40.3**	**43.0**	**46.0**
Cumulative attrition rate excluding closed assessments only[6]	**--**	**9.2**	**21.6**	**35.1**	**39.3**	**42.9**
Other Best Start Sites						
Total files open[1]	--	--	--	--	85	159
Files open at year end	--	--	--	--	76	119
Closed assessment only	--	--	--	--	0	0
Closed home visits received[2]	--	--	--	--	9	34
Completed program	--	--	--	--	0	6
Annual completed rate[3]	--	--	--	--	--	3.8
Annual attrition rate[4]	--	--	--	--	10.6	21.4
Cumulative Total of Files Ever Open	**--**	**--**	**--**	**--**	**85**	**168**
Cumulative attrition rate including closed assessments only[5]	**--**	**--**	**--**	**--**	**10.6**	**25.6**
Cumulative attrition rate excluding closed assessments only[6]	**--**	**--**	**--**	**--**	**10.6**	**25.6**

Source of data: MIS.

[1] This category includes all files where services was provided at some point during the year. Some of these were opened during the year and some were carried over from the previous year.

[2] Those families, with home visits, that left the program before their child's third birthday up to October 2004 when "completing" the program was changed from the child being 36 months old to 18 months old.

[3] The Annual Completed Rate is based on the number of cases "Completed Program" divided by the "Total Files Open" in the year.

[4] Annual Attrition rates are based on the number of cases "Closed Home Visits Received" and "Closed Assessment Only" divided by the "Total Files Open" in the year.

[5] Cumulative Attrition Rate "Including Closed Assessments Only" = cumulative totals of "Closed Home Visits Received" plus "Closed Assessment Only" divided by the "Cumulative Total Number of Files Ever Opened."

[6] Cumulative Attrition Rate "Excluding Closed Assessments Only" = cumulative totals of "Closed Home Visits Received" divided by the "Cumulative Total Number of Files Ever Opened" minus "Closed Assessments Only."

7.1.1 Attrition/Dropouts

Annual attrition rates were very low for Charlottetown in the first few years of operation but grew to 23.8% in 2002 and then leveled off (e.g., 22.4% in 2004). The attrition rate for other Best Start sites in 2004 was comparable at 21.4%.

The previous Healthy Families report (Elnitsky et al., 2003) indicated that the Best Start program had the lowest attrition rate at 22.2% of the five program sites across Canada. Thus, the program continues to have much lower rates of attrition than the average of other programs in the previous study (i.e., above 50%).

Attrition is a common problem in family support and home visitation programs, which tend to accept only clients who voluntarily enter the program. The first year attrition rates reported in the research literature are usually about 50% per year, thus the Best Start program has done very well in maintaining annual attrition rates just above 20% and a cumulative attrition rate in Charlottetown of 46% for the first 5.5 years of the program (see Duggan et al., 1999; Duggan et al., 2000; Duggan et al., 2004).

As Gomby (1999, p. 42) points out:

If those who remain in the program are somehow different from those who have dropped out (perhaps because they are more motivated to seek improvement), then an evaluation that assesses only those families that remain in the program may overestimate the program's benefits. Those persevering families might well have benefitted without home visiting services, because they might have sought out other community services or resources on their own.

Gomby (1999, p. 42) goes on to point out that most methodologists believe that the most appropriate way to assess a program with attrition is by measuring all families, whether or not they receive the intended service. This however is expensive because it requires that the evaluators locate families (some of whom may have moved) who may prefer to be left alone.

Unfortunately, it was not possible for us to continue following those who dropped out of the program. When this issue was raised with the program staff who were responsible for collecting data, the research team was told that dropouts tend to avoid further contact with the program staff by not responding to calls or messages. Freedom of Information and Protection of Privacy legislation did not permit the evaluators to approach the dropouts without first having consent to do so.

Fortunately, however, we are able to estimate the possible effects of dropouts by comparing their baseline profiles on the standardized instruments with a group of non-dropout Best Start clients. The results of this comparison on three measures (the Family Assessment Device, the Child Development Inventory, and the Maternal Social Support Index, see Tables A-6 through A-8, Appendix A) indicates that there were no differences between the groups on these measures.

Table 7.4 contains information regarding why families dropped out of the Best Start program prior to finishing. The most common reasons for Charlottetown families were "family does not want the program" (21.6%), "unable to contact" (19.3%), and "moved" (16.5%). For the other Best Start sites the pattern was slightly different with "moved" (25%) being the most common reason.

Table 7.4
Reasons Why Cases were Closed[1] 1999 to 2004

Reason Cases Closed	Best Start Charlottetown		Other Best Start Sites[2]	
	n	%	n	%
Child apprehension	6	3.4	1	2.3
Family does not want program	38	21.6	10	22.7
Family has enough support	16	9.1	5	11.4
Moved	29	16.5	11	25.0
Not connected to program	25	14.2	2	4.5
Outside boundary	5	2.8	--	--
Referred to other services	1	0.5	--	--
Transferred to other program site	2	1.1	--	--
Unable to contact	34	19.3	4	9.1
Other	20	11.4	11	25.0
Total	176	100.0	44	100.0

Source of data: On-line MIS from May 1999 to December 31, 2004.

[1] Includes cases "Closed Assessment Only" and cases "Closed Home Visits Received," but excludes cases that finished the program.

7.1.2 Caseload and Dosage

Information regarding caseload ratios as "day counts" were also available for the on-line MIS client information system. The caseload calculation for November 30, 2004 indicated that the average caseload for a full-time worker was 16.5 for Charlottetown Best Start workers and 15.1 for workers at other Best Start sites. These caseload averages would be considered appropriate especially given the fact that in both locations over 50% of the cases are Level 1 cases which are the highest risk and should have weekly visits.

The Healthy Families model level system of home visits suggests that an average family at Level 1 would receive weekly visits for up to 9 to 12 months; families at Level 2 would receive one visit every other week for up to 12 months; and families at Level 3 would receive one visit per month. It should be noted that these are the maximum number of home visits that could be expected; however, as previous research has indicated, they do not provide a realistic estimate of the number usually received. Gomby's (2003, p. 31) meta-analysis of home visitation programs found that the vast majority of programs delivered less than half of the intended home visits. Further, Duggan et al. (2000, p. 254) found that for the Hawaii Healthy Start program the average number of home visits for all families was 13 in their first year. This finding led Duggan to question whether the expectation of four home visits per month at Level 1 was realistic given the complexity of the families and the resistance toward services by many of the families, as well as the availability for home visits given competing demands of work and school.

Figure 7.1, which contains information on the average number of home visits received at 6 month intervals up to 24 months indicates that on average the families received about half of the maximum dosage of home visits and the relative number of visits received diminished over the time of a case as cases moved from Level 1 to Level 2. The dosage levels for the Best Start program are consistent with previous research. From the point of view of the programs, factors such as vacations, training, and sick times, all work to reduce the number of home visits possible. Cancellations and travel time also should be considered. An analysis of the "Home Visits Report," available on the Best Start MIS for

the year 2005, indicated that there were a total of 5,600 home visits scheduled across the province. Of the total, 73% (n=4,087) were actually delivered; 21% (n=1,180) were cancelled or no shows by the family; and 6% (n=333) were cancelled by the home visitor. The average travel time for each home visit ranged from a low of just over 20 minutes in East Prince to a high of 42 minutes for home visits in West Prince.

Further, in terms of program efficiency, a time budget study from the previous evaluation of the Best Start program and four other programs across Canada indicated that the Best Start program had the highest percent of time, over 40%, for client-focused activities with direct client contact (compared to approximately one-third or less for the other programs (Elnitsky et al., p. 87).

The findings presented above strongly suggest the need to lower expectations regarding what dosage levels are desirable and possible for the Best Start program, as well as for home visitation programs in general.

Figure 7.1
Average Number of Home Visits Received for Best Start Sites by Time in Program

Maximum Number of Visits[1]

| 24 | 24 | 12 | 12 |
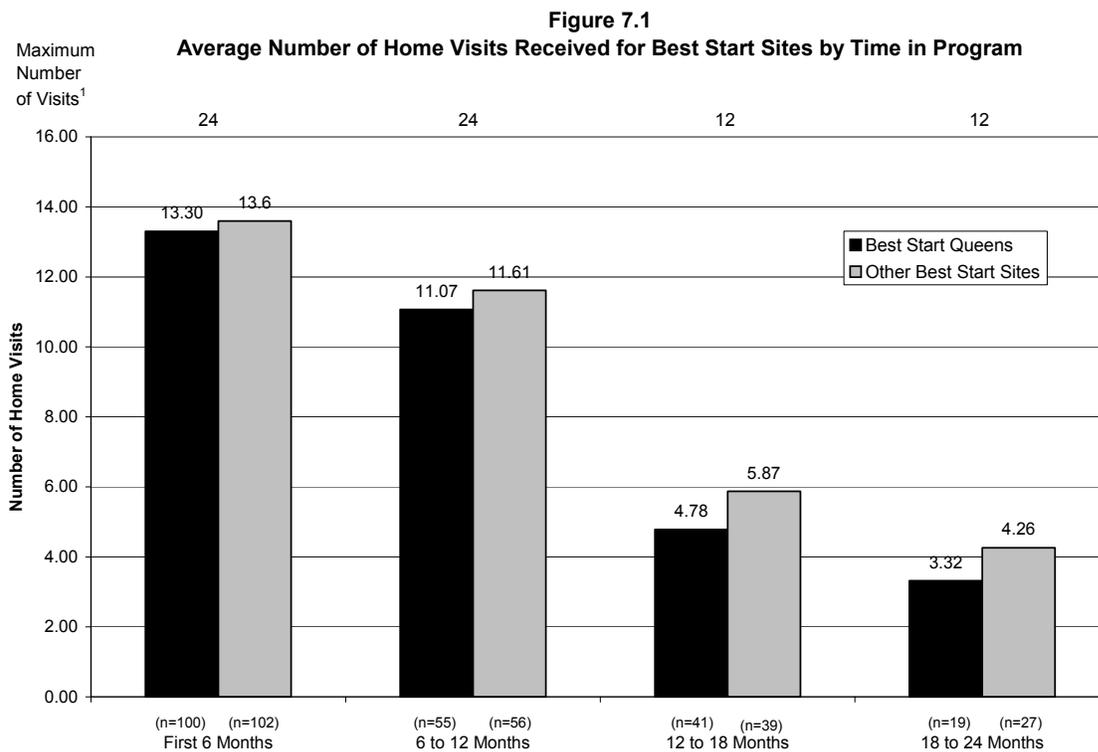
Source of data: On-line MIS from December 1, 2001 to November 30, 2004
[1] Based on weekly visits at Level 1 for 12 months and biweekly visits for Level 2 for 12 months.

7.2   Profile of Clients Served

Demographic data are available on all Best Start clients from the on-line MIS. In this section of the report, data are presented for all the clients who had continuing involvement with Best Start on December 1, 2001, as well as new clients from December 1, 2001 to November 30, 2004 by site.

Age of Mother

As Table 7.5 indicates, the average age of the mother entering the program and receiving home visits was 23.8 years for Best Start Charlottetown and 24.5 years for other Best Start sites. Over half of the mothers were under 22 at all sites and only approximately 20% were over 28 years old.

Table 7.5
Age of Mother at Program Entrance for Best Start Charlottetown and Other Best Start Sites

Best Start Program Sites	Under 18		18 - 22		23 - 27		28 - 32		Over 32		Totals[1]	
	n	%	n	%	n	%	n	%	n	%	n	%
Best Start Charlottetown (Mean age = 23.8)	13	5.1	125	49.0	67	26.3	32	12.5	18	7.1	255	100.0
Other Best Start Sites (Mean age = 24.5)	15	10.6	55	38.0	33	23.4	19	13.5	19	13.2	141	100.0

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.
[1] Missing Cases: Best Start Charlottetown = 72; Other Best Start Sites = 18.

First Births

The rate of first births was 83.3% for Best Start Charlottetown and 70.3% for other Best Start sites as indicated by Table 7.6.

Table 7.6
First Births for Best Start Charlottetown and Other Best Start Sites

Best Start Program Sites	Yes		No		Totals[1]	
	n	%	n	%	n	%
Best Start Charlottetown	234	83.3	47	16.7	281	100.0
Other Best Start Sites	99	70.3	42	29.8	141	100.0

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.
[1] Missing Cases: Best Start Charlottetown = 46; Other Best Start Sites = 18.

Marital Status

Of the mothers involved with Best Start Charlottetown, 48.3% were single parents and 51.7% were two parent families. In the other Best Start sites, 52.8% were single parent families and 47.2% were two parent families. In 2001, for the general PEI population of families with children at home, 25.2% were single parent families and 74.8% were two parent families (Statistics Canada, 2001 Census).

Age of Baby

As Table 7.7 indicates, most families entered the program before the baby was nine weeks old, i.e., 82.2% for Best Start Charlottetown and 75.6% for the other Best Start sites.

Table 7.7
Age of Baby at Program Entrance for Best Start
Charlottetown and Other Best Start Sites

Best Start Program Sites	Prenatal		4 weeks or less		5 to 8 weeks		9 to 12 weeks		Over 12 weeks		Totals[1]	
	n	%	n	%	n	%	n	%	n	%	n	%
Best Start Charlottetown	38	12.3	97	31.4	119	38.5	32	10.4	23	7.4	309	100.0
Other Best Start Sites	4	2.6	67	42.9	47	30.1	14	9.0	24	15.4	156	100.0

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.
[1] Missing Cases: Best Start Charlottetown = 18; Other Best Start Sites = 2.

7.3   Risk Assessment Scores

Risk assessment scores indicate the level of need or risk of families entering the program and are based on the Family Stress Checklist (FSC) that is completed at assessment. The Family Stress Checklist was developed by Healthy Families America as a clinical tool to aid in the assessment of new families. In the Best Start program specially trained Public Health Nurses use the FSC to conduct an extensive clinical interview with potential clients. Families where either parent scores over 20 are considered to be at risk and qualify for the program.

Table 7.8 presents the risk assessment scores for the mothers. In cases where the mother's score was below the 20 point threshold (i.e., 2.8% for Best Start Charlottetown and 5.6% for other Best Start sites), the family would have qualified for the program based on the father's score being 20 or higher. Over half of the Best Start Charlottetown clients (55.3%) were moderate risk (i.e., 20 to 35) and 41.9% were high risk (i.e., over 40 score) compared to 55% at moderate risk and 39.4% at high risk for the other Best Start sites.

Table 7.8
Risk Assessment Score[1] for Best Start Charlottetown and Other Best Start Sites

Best Start Program Sites	Score									
	0 to 15		20 to 35		40 to 55		60 and above		Total	
	n	%	n	%	n	%	n	%	n	%
Best Start Charlottetown	6	2.8	120	55.3	79	36.4	12	5.5	**217**	**100.0**
Other Best Start Sites	9	5.6	88	55.0	62	38.8	1	0.6	**160**	**100.0**

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.
[1] Based on the Family Stress Checklist (Parent Interview), completed at assessment on the mother for new cases from December 1, 2001 to November 30, 2004. The Family Stress Checklist is scored in units of five.

7.4   Baseline Scores on Standardized Instruments

As indicated previously, a set of standardized instruments were administered to all clients receiving the program from December 1, 2001 to November 30, 2004. These instruments were chosen primarily because they reflect on the short-term outcomes of the Best Start program. In addition, it was anticipated that these instruments would be useful to the home visitors since they identify the needs of individual families. To facilitate the usefulness of these instruments to the programs, all home visitors were trained in the administration and interpretation of the instruments. In addition, all instruments are contained in the Best Start Management Information System. The MIS provides automatic feedback summaries to the workers.

All the standardized instruments have been "normed" on a large sample of the general population and thus provide a direct comparison with the population average. The first time these measures were administered they provided a detailed baseline picture of the current needs of the clients. Thus, in the analysis to follow, the clients who needed to improve on specific instruments and the clients who were functioning normally and were not expected to improve were identified. Tracking the improvement over time with these cases where improvement is necessary was the measure of successful outcomes presented in the next chapter.

The instruments included in these analyses were as follows (see Table 2.1):

- Family Assessment Device (FAD);
- Child Development Inventory (CDI);
- Maternal Social Support Index (MSSI);
- Carey Infant Temperament Questionnaire; and
- Denver II.

7.4.1 The Family Assessment Device (FAD)

The Family Assessment Device (FAD) provides an overview of the level of functioning within the family in two parent families. The general functioning scale of the FAD has 12 statements on it and the parent(s) is asked to indicate the extent to which they agree or disagree with each statement as it relates to their own family. Low scores suggest that the family is functioning quite well while high scores (above 2.0) suggest that there may be problems in family functioning. Since this instrument measures functioning in dyadic relationships it was administered only in cases where the mother was living with a partner.

As Table 7.9 indicates, 26% of Best Start Charlottetown and 23.7% of the other Best Start sites families were identified in this outcome instrument as having problems with family functioning and needing to improve it (mean scores were the same, 2.4).

Table 7.9
Mean Scores at T1 on the Family Assessment Device (FAD) for Cases with
Improvement Expected and Improvement Not Expected[1]

Best Start Program Sites	FAD Score
	Mean
Best Start Charlottetown	
Improvement Expected (n=56; 26.0%)	2.4
Improvement Not Expected (n=159; 74.0%)	1.6
Other Best Start Sites	
Improvement Expected (n=14; 23.7%)	2.4
Improvement Not Expected (n=45; 76.3%)	1.6

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Scores on the FAD range from 1 to 4 with higher scores indicating lower levels of family functioning. Cases with scores greater than 2 are assigned to the "Improvement Expected" group and cases with scores less than or equal to 2 are assigned to the "Improvement Not Expected" group.

7.4.2 The Child Development Inventory (CDI)

The Child Development Inventory (CDI) is intended to provide an indication of the parent's overall child development knowledge in each of the following areas:

- emotional development (refers to how much parents know about the causes and consequences of their child's emotional reactions);

- cognitive development (refers to how much parents know about their child's developing thought processes);

- physical development (refers to how much parents know about what young children are capable of in terms of eating habits, nutrition, and sleep patterns etc.); and

- social development (in the context of this measure, refers to how much parents know about how best to respond to their child's behaviour).

The CDI has 39 items scored on a scale of 0 to 100, and basically samples parents' knowledge about child development in each area. A high percentage score, where only a few items are missed, indicates that the parent knows a lot about this aspect of child development. A low percentage correct (e.g., missing half the items) can indicate that the parent is missing quite a bit of information about children and their development in that area.

As Table 7.10 indicates, most clients demonstrated a relatively high level of knowledge of child development. Only those with a score of less than 85 were identified as needing to improve. Best Start Charlottetown and the other Best Start sites clients were almost equally rated as needing to improve their knowledge of child development with 23% and 25% respectively needing improvement.

Table 7.10
Mean Scores at T1 on the Child Development Inventory (CDI)
for Cases with Improvement Expected and Improvement Not Expected[1]

Best Start Program Sites	Total Scale	Emotional Development Subscale	Cognitive Development Subscale	Physical Development Subscale	Social Development Subscale
	Mean	Mean	Mean	Mean	Mean
Best Start Charlottetown					
Improvement Expected (n=67; 23.0%)	78.0	84.8	85.4	81.0	71.6
Improvement Not Expected (n=224; 77.0%)	93.6	95.1	96.3	93.8	90.3
Other Best Start Sites					
Improvement Expected (n=28; 24.8%)	76.5	86.8	85.7	77.9	69.8
Improvement Not Expected (n=85; 75.2%)	92.3	94.5	95.1	92.4	88.8

Source of data: On-line MIS from December 1, 2003 to November 30, 2004.
[1] Scores on the CDI are based on the percentage of correct answers and range from 0-100. Cases with scores less than 85 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 85 are assigned to the "Improvement Not Expected" group.

The scores on the CDI at T1 may be higher than they would be if they were truly baseline measures since the families may have had up to eight visits by the home visitor prior to first administration of the instrument.

7.4.3 The Maternal Social Support Index (MSSI)

The Maternal Social Support Index (MSSI) is intended to provide an overall picture of the amount of social support parents (usually mothers) feel they have or are able to get when they need it. The scale has 18 items and covers social support in seven areas including help with daily tasks, quality of contact with family/relatives, support from partner, and community involvement. The total scale is further broken down into three subscales: support around the home; support outside the home; and community contact.

Table 7.11 contains the breakdown of clients who would be expected to improve and those not expected to improve by the total scale scores. In addition, the subscale scores are presented for these two groups based on the total scale breakdown. Note that the mean on the total scale for both the Best Start Charlottetown group expected to improve and the clients from the other Best Start sites was just over 16%. The results for the subscales support around the home and support outside the home were also very similar for the Best Start Charlottetown and other Best Start sites. However, the community contact subscale indicates that those clients in the other Best Start sites had fewer community contacts than the Best Start Charlottetown group. Note for those in the improvement expected group, the Best Start Charlottetown clients had an average of just over 2 on the community contact subscale compared to less than 1 for the other site clients. Even those clients not expected to improve in the other Best Start sites were significantly lower than the Charlottetown clients (1.8 compared to 3.0).

Table 7.11
Mean Scores at T1 on the Maternal Social Support Index (MSSI) for Cases
with Improvement Expected and Improvement Not Expected[1]

Best Start Program Sites	Total Scale	Support Around Home Subscale	Support Outside Home Subscale	Community Contact Subscale
	Mean	Mean	Mean	Mean
Best Start Charlottetown				
Improvement Expected (n=104; 36.0%)	16.4	3.1	11.2	2.1
Improvement Not Expected (n=185; 64.0%)	26.3	6.7	16.5	3.0
Other Best Start Sites				
Improvement Expected (n=48; 41.7%)	16.5	3.4	12.3	0.9
Improvement Not Expected (n=67; 58.3%)	26.1	7.1	17.3	1.8

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Scores on the MSSI total scale range from 0 to 39 with lower scores indicating lower levels of social support. Cases with scores less than 22 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 22 are assigned to the "Improvement Not Expected" group. Scores on the Support Around Home subscale range from 0-10. Scores on the Support Outside Home subscale range from 0-21. Scores on the Community Contact subscale range from 0-8.

7.4.4 <u>Carey Infant Temperament Questionnaire</u>

The nature and quality of parent-child interactions is a core factor in young children's developmental outcomes. How these interactions proceed over time is a joint function of what the parents and what the child brings to them. For the parent's part, their knowledge, social support, and parenting skill set makes up what they bring to these important ongoing interactions. For the infant and child's part, their contribution comes in the form of their temperament. Infant/child temperament consists of a number of behavioural tendencies that together can play an influential role in how they are viewed and responded to by their caregivers and later by their peers.

The Carey Infant Temperament Scale provides a detailed picture of an infant's temperament or behavioural style. Temperament is what the infant/child brings to the social interactions. It is made up of a number of basic behavioural tendencies or ways of responding to situations in the world. The Carey assesses temperament across the following nine dimensions:

- activity (the amount of physical motion during daily routine);

- rhythmicity (regularity of bodily functioning in sleep, hunger, bowel movement, etc.);

- approach (responses to new persons, places, events);

- adaptability (the ease/difficulty with which the infant can change to socially acceptable behaviour);

- intensity (the amount of energy in a response whether negative or positive);

- mood (general amount of pleasant or unpleasant feelings);

- persistence (attention span – how long the infant stays with a task or activity);

- distractibility (the effect of external stimuli such as sounds, persons, etc., on ongoing behaviour); and

- threshold (general sensitivity or insensitivity to stimuli like sound, odor, taste, light, etc.).

Based on earlier work with this measure in this and other early intervention programs, it was decided to administer only those five scales that reflect "difficult" aspects of temperament (see: Elnitsky et al., 2003). It was reasoned that assisting parents in gaining the confidence and competence to manage any of the difficult aspects of their child's temperament is a core focus of these sorts of programs.

Useful information can be gathered from the application of the Carey Temperament scales in early intervention settings. First, the five scales of the Carey that predict the extent to which infants have "difficult" temperament provides an additional indicator of the degree of challenge and risk faced by the new families in the program. Children that are

temperamentally difficult place a higher demand upon parents' parenting skills and resources than do children who are temperamentally "easier." In addition, the Carey measure makes it possible to compare parents' impressions of their infants with behaviourally anchored ratings of each child's actual temperament. Parents whose parenting skills and knowledge of their infant are less than optimal may seriously under or over estimate their child's actual level on any temperament dimension.

Table 7.12 presents the average scores of infants at the Best Start Charlottetown site and at the other Best Start sites on each of the five "difficult" temperament dimensions measured by the Carey. These average scores are compared to existing population norms that provide a general picture of the nature of the infants within the families (i.e., what the infants bring to interactions). Infants involved with Best Start Charlottetown scored significantly higher than the population averages for their age group on the dimensions of rhythmicity, approachability, adaptability, and intensity. Across the other Best Start sites infants scored significantly higher than the population averages for their age group on the dimensions of rhythmicity, adaptability, and intensity.

Table 7.12
Mean Child Behaviour Rating on Five Dimensions of the Carey
Scale for Best Start Charlottetown and Other Best Start Sites[1]

Dimension	Mean	Standard Deviation	Population Mean[2]	Mean Difference
Best Start Charlottetown (n=239)				
Rhythmicity	2.8	0.7	2.4	0.4***
Approachability	2.5	0.7	2.3	0.2***
Adaptability	2.4	0.6	2.0	0.4***
Intensity	3.6	0.6	3.4	0.2***
Mood	2.8	0.7	2.8	0.0
Other Best Start Sites (n=100)				
Rhythmicity	2.7	0.8	2.4	0.3***
Approachability	2.4	0.7	2.3	0.1
Adaptability	2.3	0.6	2.0	0.3***
Intensity	3.6	0.8	3.4	0.2*
Mood	2.7	0.7	2.8	-0.1

* $p < .05$.

** $p < .005$.

*** $p < .001$.

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Includes the first data point for each case. Children who score greater than one standard deviation above the mean on a behaviour dimension are considered difficult on that dimension.

[2] The population mean is the average of scores for children of that age (i.e., four months). A comparison of the program averages for each dimension indicates whether or not the infants in the program are similar to the general population.

Table 7.13 shows the number of temperament scales on which the infants were scored as clearly being on the difficult end of the scale (at least one standard deviation above the normative sample's mean). Infants scoring above this cutoff on three or more scales can be described as temperamentally difficult while infants scoring above this cutoff on two scales can be described as challenging in terms of the additional load they will place upon parental skills and resources. For the Best Start Charlottetown and other Best Start groups, 17.1% and 20.6% of infants respectively, fall in the difficult temperament category while an additional 20.3% and 14.7% fall in the challenging category. The results are clearly above the approximately 10% estimate of infants in the general population that are

temperamentally difficult, indicating that this is another risk factor to be considered when planning interventions with at-risk infants and their families.

Table 7.13
Number of Children who Scored as "Difficult" at
Best Start Charlottetown and Other Best Start Sites by the Five Scales

Best Start Program Sites	Number of Scales													
	0		1		2		3		4		5		Total[1]	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Best Start Charlottetown	89	36.2	65	26.4	50	20.3	25	10.2	15	6.1	2	0.8	246	100.0
Other Best Start Sites	37	36.3	29	28.4	15	14.7	15	14.7	5	4.9	1	1.0	102	100.0

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.
[1] Missing cases: Best Start Charlottetown=72; Other Best Start sites=53. Missing cases are due to the timing of administration of the instrument.

It is also possible to examine the role that home visitors may have played in assisting families with temperamentally difficult infants in developing the skills and resources they need to optimally manage their child's development. Specifically, we can examine the degree to which each parent's view of his or her infant's temperament matches the behaviourally anchored rating of his or her infant's temperament. A positive match occurs when the parent's rating of the infant's temperament matches the behaviour rating exactly. In addition, given that only those temperament dimensions reflecting difficult aspects of temperament are being examined here, it also makes sense to include situations where the parent views the infant as being slightly less difficult than the behavioural rating suggests in the positive match category. This is because it is likely that such parents hold this particular view because they possess the skills and resources necessary to effectively manage that aspect of their child's temperament (and the related behaviour) and as such, are not overwhelmed by, or ignoring, the challenging behaviours.

On the other hand, parental ratings of infants as more difficult than the behaviour rating suggests and parental ratings of infants as very low on difficult temperament dimensions when they are in fact high reflect negative mismatches. Both of these cases reflect a potentially problematic lack of understanding of the child's temperament on the part of the parent that would or should lead the home visitor to focus their intervention on the parent's parenting knowledge, parenting skills and parenting resources. Anecdotal feedback from home visitors suggests that this is, in fact, what occurs, but it is also possible to see if this is reflected in changes in this match/mismatch designation from the first to the second Carey assessment point.

Table 7.14 shows the number and percentages of parent-infant pairs with positive matches or negative mismatches at the first Carey testing time. As can be seen, the level of mismatch was quite high ranging from 12.4% to 38.2% for Best Start Charlottetown clients depending upon the temperament dimension in question. Likewise, the level of mismatch for clients at the other Best Start sites was high, ranging from 12.8% to 31.9%.

Table 7.14
Match Between Carey Behaviour Ratings and Parental Impression
Rating at T1 at Best Start Charlottetown and Other Best Start Sites[1]

Dimension	Match		Mismatch	
	n	%	n	%
Best Start Charlottetown				
Rhythmicity (n=234)	194	82.9	40	17.1
Approachability (n=233)	204	87.6	29	12.4
Adaptability (n=225)	163	72.4	62	27.6
Intensity (n=228)	141	61.8	87	38.2
Mood (n=235)	198	84.3	37	15.7
Other Best Start Sites				
Rhythmicity (n=94)	69	73.4	25	26.6
Approachability (n=94)	82	87.2	12	12.8
Adaptability (n=89)	68	76.4	21	23.6
Intensity (n=91)	62	68.1	29	31.9
Mood (n=94)	79	84.0	15	16.0

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Includes the first data point for each case for behaviour ratings and the first data point for parental impression ratings.

Behaviour ratings and parental impression ratings are considered to match if both are the same (e.g., both ratings are low).

Parental impression ratings that are lower than behaviour ratings are considered "positive mismatches" and these are also

considered a match. Parental impression ratings that are higher than behaviour ratings are considered "negative mismatches."

7.4.5 Denver Developmental Screening Test-II (DDS-II)

The Denver Developmental Screening Test-II (DDS-II) is a clinical screening tool designed to assist in the early detection of developmental delays. It identifies children whose development appears to be delayed in comparison to the development of other children. The DDS-II covers four basic developmental areas including gross motor (sitting, crawling, walking, etc.), language, fine motor-adaptive (clapping, reaching, grasping, hand-eye coordination, etc.), and personal-social (ability to relate to others).

In developmental terms, items are scored as advanced, normal, caution, or delay. An item is scored advanced if the child has passed an item that most children do not pass until an older age. An item is scored normal if it is developmentally expected that the child can pass the item or if the child has failed or refused items that are developmentally more complex than the current level of development (i.e., the child is not expected to pass them until an older age). An item is scored caution if a majority of the standard sample passed the item at a younger age than the child being tested. This indicates that there is a possibility that the child may show a small lag in development, although it is not of sufficient size to warrant a delay designation. Finally, an item is scored as delayed if almost all the standard sample passed the item at a younger age than the child being tested. The overall designations, based on the scores on individual items, include normal (no delays and a maximum of one caution), suspect (two or more cautions and/or one or more delays), and untestable (one or more refusals of items that the child is developmentally expected to pass).

Of the 327 families whose files were ever open during the current evaluation of the Best Start Charlottetown site, there were a total of 347 children administered a total of 813 Denver Developmental Assessments (from one to six per child, depending upon how long their families had been involved with the program). Of these children, 85 (24.5%) had at

least one "suspect" developmental assessment. Of these 85, only 21 (6.1%) did not have at least one "normal" developmental assessment.

Of the 159 families whose files were ever open during the current evaluation of the other Best Start sites, there were a total of 146 children administered a total of 238 Denver Development Assessments (from one to three per child, depending upon how long their families had been involved with the program). Of these children, 39 (26.7%) had at least one "suspect" developmental assessment. Of these 39, only 9 (6.2%) did not have at least one "normal" developmental assessment.

7.5   Overview of Baseline Scores on Standardized Instruments

In summary, Table 7.15 indicates that overall from 23.7% to a high of 41.7% of Best Start families fell into the "improvement expected" category on the standardized instruments. Further, the differences between the other Best Start site clients needing improvement in comparison with the Best Start Charlottetown clients was minimal.

Table 7.15
Summary of "Improvement Expected" at T1 for Standardized
Measures for Best Start Charlottetown and Other Best Start Sites

Best Start Program Sites	Instruments			
	FAD	CDI	MSSI	Carey (Mismatches)[1]
Best Start Charlottetown	26.0%	23.0%	36.0%	22.2%
Other Best Start Sites	23.7%	24.8%	41.7%	22.2%

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.
[1] Average mismatches over the five Carey subscales (Table 6.14).

Table 7.16 indicates that over two-thirds of the Best Start families (i.e., 68.9% for Best Start Charlottetown and 70.2% for other Best Start sites) fell into a "needs improvement" category on at least one of the standardized instruments previously discussed. Further, almost a third of clients from both Best Start Charlottetown and the other Best Start sites were in the "needs improvement" category on at least two instruments.

Table 7.16
Number of Instruments on which Cases Scored at Risk at
T1 for Best Start Charlottetown and Other Best Start Sites

Best Start Program Sites	Number of Instruments									
	0		1		2		3		4	
	n	%	n	%	n	%	n	%	n	%
Best Start Charlottetown (n=296)	92	31.1	121	40.9	63	21.3	19	6.4	1	0.3
Other Best Start Sites (n=117)	35	29.9	47	40.2	29	24.8	5	4.3	1	0.9

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

8.0   OUTCOME RESULTS DURING PROGRAM: STANDARDIZED INSTRUMENTS – CHILD 0-3 YEARS OLD

The purpose of this chapter is to identify the effectiveness of the Best Start program in achieving short-term objectives with clients during their first year of involvement in the program.   The short-term objectives were measured by the following standardized instruments:

- Family Assessment Device (FAD);
- Child Development Inventory (CDI);
- Maternal Social Support Index (MSSI); and
- Carey Infant Temperament Questionnaire (Carey).

Since randomization of the treatment and control group was not possible, a quasi-experimental research design using a constructed comparison group was implemented (see Section 3.3). This design used the following groups for the analysis of the short-term objectives of the Best Start program.

- Best Start Program Group: This group included all clients who were active in the Best Start program from December 1, 2001 to November 30, 2004. Clients from the Best Start program in Charlottetown were grouped with clients from the other sites since there were fewer clients in the new sites and preliminary analysis indicated very similar patters of change.

- Non-participant Comparison Group: This group consisted of 50 families who had been screened positive and declined to become involved in the program. These subjects were recruited by the Public Health Nurses and appeared to be representative of the total population of those who screened positive but declined to be assessed and involved with the program (as compared on the Record Screen items, see Section 3.3.5). Further, it should also be noted that those who declined the program appeared to be lower risk on the Record Screen than the group who accepted involvement with the Best Start program.

During the previous three-year pilot study involving the Best Start program and programs at other sites across Canada, it was very difficult to demonstrate the effectiveness of these early intervention programs for at least four reasons: (1) the heterogeneous nature of the clients; (2) the difficulty in accurately identifying what services were received; (3) the difficulty in identifying and tracking relevant outcomes and benefits; and (4) the effects of history (e.g., changing social events) on the clients over time.

Thus, in order to develop a strategy that was sensitive to these clients, the standardized measures were first administered to clients early in the program (staggered within the first three months) to provide a detailed picture of the clients' needs. This picture indicated that few clients shared the same pattern of needs, which was consistent with previous research. Thus, since all instruments were standardized and "normed" on large samples from the general population, it was possible to determine cut off scores or

predetermined boundaries for each instrument which distinguished between those clients who "needed to improve" on any specific scale from those who were in the normal range and had no need to improve.

Given that the current sample of Best Start clients is relatively large, we were able to dichotomize the sample for each instrument by those clients who need to improve and compare them with those who do not need to improve and identify any change that occurs over time. This approach was used for analyzing the standardized outcome instruments discussed below.

8.1   The Family Assessment Device (FAD)

For those families where the mother was living with a partner at any time during the study period, the FAD provides an overview of the level of functioning within the family. Scores range from 1 to 4. Low scores suggest that the family is functioning quite well while high scores (above 2) suggest that there may be problems in family functioning. As Table 8.1 indicates, 33% of the Best Start Program Group fell into the improvement expected group compared to just 14% of the Non-participant Comparison Group. This finding would be consistent with the assumption that the Non-participant Comparison Group is a lower risk group than the Best Start Program Group. In terms of change over time, there is virtually no difference between the Best Start Program Group and the Non-participant Comparison Group. Where improvement was expected, both groups improved significantly from T1 to T2 (mean change=-0.3). Both improvement not expected groups also changed, however, the change was less dramatic (mean change=0.1) and it was in the opposite direction, i.e., scores indicate slightly lower family functioning. Given the magnitude of this change, it is most likely due to regression to the mean.

Table 8.1
Mean Scores at Time 1 and Time 2 and Mean Change Scores
across Testings on the Family Assessment Device for the
Best Start Program Group and the Non-participant Comparison Group[1]

	Study Group	Mean Score at T1	Mean Score at T2	Mean Change from T1 to T2[2]
Improvement Expected Group[3]	Best Start Program Group (n=51)	2.4[+]	2.1[+]	-0.3
	Non-participant Comparison Group (n=6)	2.5[+]	2.2[+]	-0.3
Improvement Not Expected Group	Best Start Program Group (n=106)	1.6[+]	1.7[+]	0.1
	Non-participant Comparison Group (n=38)	1.5	1.6	0.1

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[+] Denotes a significant difference within a group from Time 1 to Time 2 at $p < .05$.

[1] Scores on the FAD range from 1 to 4 with lower scores indicating higher levels of family functioning. Cases with scores greater than 2 are assigned to the "Improvement Expected" group and cases with scores less than or equal to 2 are assigned to the "Improvement Not Expected" group.

[2] Negative mean change scores indicate improvement in family functioning.

[3] Of the 157 cases in the "Best Start Program Group," 32.5% fell into the "Improvement Expected" group. Of the 44 cases in the "Non-participant Comparison Group," 13.6% fell into the "Improvement Expected" group.

8.2   The Child Development Inventory (CDI)

The CDI is intended to provide an indication of the parent's overall knowledge of child development in each of the following areas: emotional, cognitive, physical, and social. The percentage score (i.e., percent correct) serves as a general indication of how knowledgeable a parent is within each area of child development. The higher the percentage score, the more knowledge the parent has in a particular area. Scores below 85 indicate that the parent may be missing information in a particular area of child development and needs to improve. Scores 85 and above indicate that, for the most part, the parent is knowledgeable in a specific area of development and improvement would not necessarily be expected.

Table 8.2 contains the overall scores on the Child Development Inventory (CDI) for clients who were expected to improve (i.e., those below 85%) and clients who were not expected to change (i.e., 85% and above). As the data indicate 24% of the Best Start Program Group fell into the improvement expected group compared to 33% of the Non-participant Comparison Group. In terms of overall change from T1 to T2, where improvement was expected the Best Start Program Group improved significantly increasing from 76.9 to 84.8. The Non-participant Comparison Group also improved slightly but not to a level that was statistically significant. Both of the improvement not expected groups decreased slightly most likely due to regression to the mean.

Table 8.2
Mean Scores at Time 1 and Time 2 and Mean Change Scores
across Testings on the Child Development Inventory for the
Best Start Program Group and the Non-participant Comparison Group[1]

	Study Group	Mean Score at T1	Mean Score at T2	Mean Change from T1 to T2
Improvement Expected Group[2]	Best Start Program Group (n=47)	76.9[+]	84.8[+]	7.9
	Non-participant Comparison Group (n=16)	76.1	82.7	6.6
Improvement Not Expected Group	Best Start Program Group (n=148)	93.6	91.8	-1.8
	Non-participant Comparison Group (n=32)	93.2	91.8	-1.4

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[+] Denotes a significant difference within a group from Time 1 to Time 2 at $\underline{p}$ <. 05.

[1] Scores on the CDI are based on the percentage of correct answers and range from 0 to 100. Cases with scores less than 85 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 85 are assigned to the "Improvement Not Expected" group.

[2] Of the 195 clients in the "Best Start Program Group," 24.1% fell into the "Improvement Expected" group. Of the 48 clients in the "Non-participant Comparison Group," 33.3% fell into the "Improvement Expected" group.

Tables 8.3 through 8.6 present the findings of the CDI by each subscale: emotional, cognitive, physical, and social development. Interestingly, for the most part, the same pattern of change occurs as was demonstrated for the total scale scores in Table 8.2. More specifically the improvement expected Best Start Program Group improved significantly on all of the subscales. While the improvement expected Non-participant

Comparison Group also tended to improve on all the subscales, the improvement was not statistically significant. Likewise for the improvement not expected group, for the most part, there was either no change or a slight decrease in scores from T1 to T2.

Table 8.3
Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings
on the Emotional Development Subscale of the Child Development Inventory
for the Best Start Program Group and the Non-participant Comparison Group[1]

	Study Group	Mean Score at T1	Mean Score at T2	Mean Change from T1 to T2
Improvement Expected Group[2]	Best Start Program Group (n=47)	84.0[+]	90.6[+]	6.6
	Non-participant Comparison Group (n=16)	78.1	83.8	5.7
Improvement Not Expected Group	Best Start Program Group (n=148)	95.8	95.4	-0.4
	Non-participant Comparison Group (n=32)	94.4	95.0	0.6

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[+] Denotes a significant difference within a group from Time 1 to Time 2 at p <. 05.

[1] Scores on the CDI are based on the percentage of correct answers and range from 0 to 100. Cases with scores less than 85 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 85 are assigned to the "Improvement Not Expected" group.

[2] Of the 195 clients in the "Best Start Program Group," 24.1% fell into the "Improvement Expected" group. Of the 48 clients in the "Non-participant Comparison Group," 33.3% fell into the "Improvement Expected" group.

Table 8.4
Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings
on the Cognitive Development Subscale of the Child Development Inventory for
the Best Start Program Group and the Non-participant Comparison Group[1]

	Study Group	Mean Score at T1	Mean Score at T2	Mean Change from T1 to T2
Improvement Expected Group[2]	Best Start Program Group (n=47)	85.5[+]	91.5[+]	6.0
	Non-participant Comparison Group (n=16)	77.5	82.5	5.0
Improvement Not Expected Group	Best Start Program Group (n=148)	96.2	95.2	-1.0
	Non-participant Comparison Group (n=32)	96.9	94.1	-2.8

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[+] Denotes a significant difference within a group from Time 1 to Time 2 at p <. 05.

[1] Scores on the CDI are based on the percentage of correct answers and range from 0 to 100. Cases with scores less than 85 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 85 are assigned to the "Improvement Not Expected" group.

[2] Of the 195 clients in the "Best Start Program Group," 24.1% fell into the "Improvement Expected" group. Of the 48 clients in the "Non-participant Comparison Group," 33.3% fell into the "Improvement Expected" group.

Table 8.5
Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings
on the Physical Development Subscale of the Child Development Inventory
for the Best Start Program Group and the Non-participant Comparison Group[1]

	Study Group	Mean Score at T1	Mean Score at T2	Mean Change from T1 to T2
Improvement Expected Group[2]	Best Start Program Group (n=47)	77.5+	84.9+	7.4
	Non-participant Comparison Group (n=16)	84.4	85.6	1.2
Improvement Not Expected Group	Best Start Program Group (n=148)	92.8	94.0	1.2*
	Non-participant Comparison Group (n=32)	94.4+	90.9+	-3.5*

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

+ Denotes a significant difference within a group from Time 1 to Time 2 at $p < .05$.

* Denotes a significant difference between groups at $p < .05$.

[1] Scores on the CDI are based on the percentage of correct answers and range from 0 to 100. Cases with scores less than 85 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 85 are assigned to the "Improvement Not Expected" group.

[2] Of the 195 clients in the "Best Start Program Group," 24.1% fell into the "Improvement Expected" group. Of the 48 clients in the "Non-participant Comparison Group," 33.3% fell into the "Improvement Expected" group.

Table 8.6
Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings
on the Social Development Subscale of the Child Development Inventory
for the Best Start Program Group and the Non-participant Comparison Group[1]

	Study Group	Mean Score at T1	Mean Score at T2	Mean Change from T1 to T2
Improvement Expected Group[2]	Best Start Program Group (n=47)	70.9+	79.0+	8.1
	Non-participant Comparison Group (n=16)	76.4	79.2	2.8
Improvement Not Expected Group	Best Start Program Group (n=148)	90.8+	86.9+	-3.9
	Non-participant Comparison Group (n=32)	86.8	87.9	1.1

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

+ Denotes a significant difference within a group from Time 1 to Time 2 at $p < .05$.

[1] Scores on the CDI are based on the percentage of correct answers and range from 0 to 100. Cases with scores less than 85 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 85 are assigned to the "Improvement Not Expected" group.

[2] Of the 195 clients in the "Best Start Program Group," 24.1% fell into the "Improvement Expected" group. Of the 48 clients in the "Non-participant Comparison Group," 33.3% fell into the "Improvement Expected" group.

8.3 The Maternal Social Support Index (MSSI)

The Maternal Social Support Index (MSSI) is intended to provide an overall picture of the amount of social support parents (usually mothers) feel they have or are able to get when they need it. The scale has 18 items and covers social support in a number of areas including help with daily tasks, quality of contact with family/relatives, support from partner,

and community involvement. The total scale is further broken down into three subscales: support around the home; support outside the home; and community contact.

Cases with scores less than 22 on the total MSSI are considered "low" scores indicating that the parent feels they have low social support as opposed to average or high support. Thus, cases with scores lower than 22 on the total scale were assigned to the improvement expected group and those with scores 22 or higher were assigned to the improvement not expected group.

As indicated by Table 8.7, 37% of the Best Start Program Group fell into the improvement expected group compared to 32% of the Non-participant Comparison Group. In terms of change from T1 to T2 for the improvement expected group, there was a tendency for both the Best Start Program Group and the Non-participant Comparison Group to improve slightly, but not to a level that was statistically significant. In terms of the improvement not expected group the Best Start Program Group actually decreased significantly from T1 to T2, while the Non-Participant Comparison Group stayed virtually the same over time.

Table 8.7
Mean Scores at Time 1 and Time 2 and Mean Change Scores
across Testings on the Maternal Social Support Index for
the Best Start Program Group and the Non-participant Comparison Group[1]

	Study Group	Mean Score at T1	Mean Score at T2	Mean Change from T1 to T2
Improvement Expected Group[2]	Best Start Program Group (n=74)	17.1	18.2	1.1
	Non-participant Comparison Group (n=15)	17.5	18.3	0.8
Improvement Not Expected Group	Best Start Program Group (n=125)	26.2[+]	23.7[+]	-2.5*
	Non-participant Comparison Group (n=32)	26.7	26.2	-0.5*

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[+] Denotes a significant difference within a group from Time 1 to Time 2 at $\underline{p}$ <. 05.

* Denotes a significant difference between groups at $\underline{p}$ <. 05.

[1] Scores on the MSSI total scale range from 0 to 39 with lower scores indicating lower levels of social support. Cases with scores less than 22 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 22 are assigned to the "Improvement Not Expected" group.

[2] Of the 199 cases in the "Best Start Program Group," 37.2% fell into the "Improvement Expected" group. Of the 47 cases in the "Non-participant Comparison Group," 31.9% fell into the "Improvement Expected" group.

Tables 8.8 through 8.10 contain the findings for the subscales: support around home; support outside home; and community contact. For the most part, the pattern of change over time was the same for all of the subscales as it was for the overall scale. The improvement expected groups both improved slightly and the improvement not expected groups either decreased or stayed the same. These differences were slightly more pronounced for the support around home subscale (see Table 8.8) but that was the only exception and it was not statistically significant.

Table 8.8
Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings
on the "Support Around Home" Subscale of the Maternal Social Support Index
for the Best Start Program Group and the Non-participant Comparison Group[1]

	Study Group	Mean Score at T1	Mean Score at T2	Mean Change from T1 to T2
Improvement Expected Group[2]	Best Start Program Group (n=74)	3.4	3.6	0.2
	Non-participant Comparison Group (n=15)	3.4	3.1	-0.3
Improvement Not Expected Group	Best Start Program Group (n=125)	6.6[+]	6.1[+]	-0.5
	Non-participant Comparison Group (n=32)	7.1	7.2	0.1

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[+] Denotes a significant difference within a group from Time 1 to Time 2 at $\underline{p}$ <. 05.

[1] Scores on the MSSI "Support Around Home" subscale range from 0 to 10 with lower scores indicating lower levels of social support. Cases with scores less than 22 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 22 are assigned to the "Improvement Not Expected" group.

[2] Of the 199 cases in the "Best Start Program Group," 37.2% fell into the "Improvement Expected" group. Of the 47 cases in the "Non-participant Comparison Group," 31.9% fell into the "Improvement Expected" group.

Table 8.9
Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings
on the "Support Outside Home" Subscale of the Maternal Social Support Index
for the Best Start Program Group and the Non-participant Comparison Group[1]

	Study Group	Mean Score at T1	Mean Score at T2	Mean Change from T1 to T2
Improvement Expected Group[2]	Best Start Program Group (n=74)	11.7	12.5	0.8
	Non-participant Comparison Group (n=15)	12.7	13.5	0.8
Improvement Not Expected Group	Best Start Program Group (n=125)	16.5[+]	14.8[+]	-1.7*
	Non-participant Comparison Group (n=32)	17.4	17.3	-0.1*

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[+] Denotes a significant difference within a group from Time 1 to Time 2 at $\underline{p}$ <. 05.

* Denotes a significant difference between groups at $\underline{p}$ <. 05.

[1] Scores on the MSSI "Support Outside Home" subscale range from 0 to 21 with lower scores indicating lower levels of social support. Cases with scores less than 22 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 22 are assigned to the "Improvement Not Expected" group.

[2] Of the 199 cases in the "Best Start Program Group," 37.2% fell into the "Improvement Expected" group. Of the 47 cases in the "Non-participant Comparison Group," 31.9% fell into the "Improvement Expected" group.

87

Table 8.10
Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings
on the "Community Contact" Subscale of the Maternal Social Support Index
for the Best Start Program Group and the Non-participant Comparison Group[1]

	Study Group	Mean Score at T1	Mean Score at T2	Mean Change from T1 to T2
Improvement Expected Group[2]	All Clients (n=74)	2.0	2.2	0.2
	Non-participant Comparison Group (n=15)	1.5	1.7	0.2
Improvement Not Expected Group	All Clients (n=125)	3.0	2.7	-0.3
	Non-participant Comparison Group (n=32)	2.1	1.7	-0.4

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Scores on the MSSI "Community Contact" subscale range from 0 to 8 with lower scores indicating lower levels of social support. Cases with scores less than 22 on the total scale are assigned to the "Improvement Expected" group and cases with scores greater than or equal to 22 are assigned to the "Improvement Not Expected" group.

[2] Of the 199 cases in the "Best Start Program Group," 37.2% fell into the "Improvement Expected" group. Of the 47 cases in the "Non-participant Comparison Group," 31.9% fell into the "Improvement Expected" group.

8.4   Carey Infant Temperament Questionnaire

The nature and quality of parent-child interactions is a core factor in young children's developmental outcomes. How these interactions develop over time is a function of what both the parents and the child brings to them. For the parents' part, their knowledge, social support, and parenting skill set makes up what they bring to these important ongoing interactions. For the infant and child's part, their contribution comes in the form of their temperament. Infant/child temperament consists of a number of behavioural tendencies that together can play an influential role in how they are viewed and responded to by their caregivers and later by their peers.

The Carey Infant Temperament Scale provides a detailed indication of an infant's temperament or behavioural style. Temperament is what the infant/child brings to the social interactions. It is made up of a number of basic behavioural tendencies or ways of responding to situations in the environment. The Carey assesses temperament across nine dimensions; however, as indicated in Chapter 7.0, only the five scales that measure the difficult aspects of temperament were used in this analysis. These scales are:

- rhythmicity (regularity of bodily functioning in sleep, hunger, bowel movement, etc.);
- approachability (responses to new persons, places, events);
- adaptability (the ease/difficulty with which the infant can change to socially acceptable behaviour);
- intensity (the amount of energy in a response whether negative or positive); and
- mood (general amount of pleasant or unpleasant feelings).

In addition to directly measuring the infant's temperament, the Carey collects information on the parents' perception of the infant's temperament. This allows us to examine the degree to which each parent's view of his or her infant's temperament

matches the behaviourally anchored rating of his or her infant's temperament. A positive match occurs when the parent's rating of the infant's temperament matches the behaviour rating exactly. In addition, given that only those temperament dimensions reflecting difficult aspects of temperament are being examined here, it also makes sense to include situations where the parent views the infant as being slightly less difficult than the behavioural rating suggests in the positive match category. This is because it is likely that such parents hold this particular view because they possess the skills and resources necessary to effectively manage that aspect of their child's temperament (and the related behaviour) and thus, are not overwhelmed by, or ignoring, the challenging behaviours.

On the other hand, parental ratings of infants as more difficult than the behaviour rating suggests and parental ratings of infants as very low on difficult temperament dimensions when they are in fact high reflect negative mismatches. Both of these cases reflect a potentially problematic lack of understanding of the child's temperament on the part of the parent that would or should lead the home visitor to focus their intervention on the parent's parenting knowledge, parenting skills and parenting resources. Anecdotal feedback from home visitors suggests that this is, in fact, what occurs. However, it is also possible to see if this is reflected in changes in this match/mismatch designation from the first to the second Carey assessment point six to seven months after the first administration of the instrument at approximately five months of age.[12]

Table 8.11 presents the T2 matches and mismatches of those parent-infant comparisons that had a negative mismatch at T1 to see if there was evidence that their participation in the program had produced a positive change in this area. As shown in Table 8.11, with the exception of mood, all of the temperament dimensions on which these infants scored above the normative average for difficult temperament further showed a significant number of the parent ratings were changed from negative mismatches to matches. Mismatches for approachability and intensity improved the most (i.e., over 50%). Further, adaptability mismatches improved for 25% of parents and rhythmicity improved for 36.4% of parents. This is an indication that the program is effectively targeting the important core issues of parenting knowledge, parenting skills and parenting resources especially among those parents who clearly need them the most to support them in raising difficult infants.

---

[12]   Elnitsky et al., 2003 found that there was very little change in the infant behaviour component of the Carey results from four months to eight months. The parents' perception, however, did change considerably. Thus, in this study the infant behaviour component is administered only once at five months, but the parents' perception is measured twice.

Table 8.11
**Change in Match Between Carey Behaviour Ratings and Parental Impression Ratings
from T1 to T2 for All Best Start Sites for Cases with Negative Mismatches at T1[1]**

Dimension	Number of Negative Mismatches at T1	Status of T1 Negative Mismatches at T2		
		Match	Mismatch	% Improvement
Rhythmicity (n=155)	44	16	28	36.4
Approachability (n=155)	30	17	13	56.6
Adaptability (n=147)	52	13	39	25.0
Intensity (n=147)	79	41	38	52.0
Mood (n=155)	34	1	33	2.9

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Includes the first data point for each case for behaviour ratings and the first and second data points for parental impression ratings. Behaviour ratings and parental impression ratings are considered to match if both are the same (e.g., both ratings are low), or parental impression ratings are lower than behaviour ratings. Parental impression are lower than behaviour ratings. Parental impression ratings that are higher than behaviour ratings are considered mismatches.

9.0   OUTCOME RESULTS AFTER PROGRAM:
STANDARDIZED INSTRUMENTS – CHILD 3-6 YEARS OLD

The purpose of this chapter is to identify the effectiveness of the Best Start program in achieving long-term objectives with clients after they have completed their involvement with the program. Collecting data for this analysis involved following clients who completed the program for at least one year after completion. This provided information on whether clients regressed after leaving the program. The long-term objectives were measured by the following standardized instruments, which were administered at 12 month intervals:

- Parenting Sense of Competency Scale (PSOC);
- Social Networks Index (SNI);
- Crisis in Family Systems Scale (CRISYS);
- Community Contact and Referral Tracking System (CCRT); and
- Child Behavior Checklist (CBCL).

Since randomization of the treatment and control group was not possible, a quasi-experimental research design using a constructed comparison group was implemented (see Section 3.3). This design used the following groups for the analysis of the short-term objectives of the Best Start program:

- Summerside Comparison Group: CRILF has been following this comparison group of 19 families since the beginning of the previous evaluation study (see Elnitsky et al., 2003) in May 1999. When the second phase of the study began in December 2001, the decision was made to continue to follow this group in order to make comparisons with a program completed group to identify the long-term effects of the Best Start program (see Section 3.3.4).

- Completed Program Group: A sample of clients who completed the Best Start program was also identified in order to determine the long-term effects of the program. In April 2004, the research team identified 40 families that had completed the program after 36 months of involvement. The Best Start workers were able to contact 28 of these clients, all of whom agreed to be contacted by the research team for interviews. The research team was able to contact 26 of the 28, and all agreed to be interviewed.

Analysis of the Record Screen (see Section 3.3.4) indicates that these groups were reasonably well matched; however the Completed Program Group is somewhat higher risk than the Summerside Comparison Group. More specifically the Completed Program Group was higher on depression and involvement with the criminal justice system. In contrast Summerside Comparison Group was only significantly higher on single, separated, or divorced marital status. It should be noted the small number of participants in each group made it difficult to attain statistical significance in the analysis below.

9.1 Parenting Sense of Competency Scale (PSOC)

The Parenting Sense of Competency Scale (PSOC) provides information regarding parenting in two major areas. First, it provides a general indication of how satisfied relatively new parents are with themselves as parents. This provides a general indication of how well the parent is adjusting to the new rules and responsibilities of parenthood. Second, it provides an indication of how effective the parent feels they are being as a parent compared to other parents, and to the demands of parenting in general. This second indicator is sometimes called *parenting efficacy* and it may be thought of as that portion of the parents' self-esteem that arises specifically out of how they feel they are doing as parents. Together, the two parts of this measure describe generally how new parents are faring in their transition to the role of parents, and further, how successfully they are incorporating the facts and responsibilities of parenthood into their lives and core self concepts.

As Table 9.1 indicates, the Completed Program Group had a higher total score at T1 than the Summerside Comparison Group (i.e., 57.2 compared to 54.8). Further, over time, the Completed Program Group increased slightly in a sense of competency while the Summerside Comparison Group decreased slightly. In terms of the subscales, the Completed Program Group increased significantly from T1 to T2 on the Efficacy subscale and decreased significantly on the Satisfaction subscale (however it should be noted that the T1 score on Satisfaction was very high, i.e., 44.9).

Table 9.1
Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings on Parenting Sense
of Competence Scale for Cases in the Summerside Comparison Group and the Completed Program Group

Study Group	Satisfaction Subscale[1]			Efficacy Subscale[2]			Total Scale[3]		
	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2
Summerside Comparison Group (n=19)	40.6	38.8	-1.8	14.2	15.7	1.5	54.8	54.5	-0.3
Completed Program Group (n=26)	44.9[+]	43.1[+]	-1.8	12.2[+]	14.2[+]	2.0	57.2	57.3	0.1

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[+] Denotes a significant difference within a group from Time 1 to Time 2 at $p < .05$.

[1] Satisfaction Subscale range: 9-54. Higher scores indicate greater satisfaction.

[2] Efficacy Subscale range: 7-42. Higher scores indicate greater efficacy.

[3] Total Scale range: 16-96. Higher scores indicate higher parental sense of competence.

9.2 Social Network Index (SNI)

The Social Network Index (SNI) is designed to provide a general picture of the nature and extent of social contacts made or maintained (based on the recent past) by the person responding to the scale. The instrument collects data on how many people one is in contact with on a regular basis, typically over the last two weeks. The social network includes family, friends, coworkers, neighbours, etc. Social networks are an important aspect of social support, but are not very well addressed by basic social support scales. By providing a general indication of the degree of social isolation or of social connectedness, the SNI provides an indication of whether the respondent might benefit from efforts to assist them in making and maintaining more social connections in their neighbourhood and community.

Table 9.2 contains the data analysis for the SNI. First, it is important to point out that at T1 the Completed Program Group scored higher than the Summerside Comparison Group on all three subscales. Note, for example, that on the High Contact Roles subscale the Completed Program Group had a mean of 6.4 at T1 compared to 6.0 for the Summerside Comparison Group.   On the People in Social Network subscale the Completed Program Group at T1 had a mean score of 22.3 compared to 17.3 for the Summerside Comparison Group. Finally the score for the Completed Program Group on the Embedded Networks was 2.7 compared to 2.0 for the Summerside Comparison Group. While these differences were not statistically significant (most likely due to the small n's), they were consistent. In terms of change over time, both groups tended to decrease, however none of the changes were statistically significant.

Table 9.2
Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings on the Social
Network Index for Cases in the Summerside Comparison Group and the Completed Program Group[1]

Study Group	High Contact Roles[2]			People in Social Network			Embedded Networks[3]		
	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2
Summerside Comparison Group (n=19)	6.0	5.7	-0.3	17.3	16.3	-1.0	2.0	2.0	0.0
Completed Program Group (n=26)	6.4	6.0	-0.4	22.3	20.8	-1.5	2.7	2.5	-0.2

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.
[1] Higher scores on this scale indicate a larger, more diverse social network.
[2] High Contact Roles range: 0-12.
[3] Embedded Networks range: 0-8.

9.3   Crisis in Family Systems Scale (CRISYS)

The Crisis in Family Systems Scale (CRISYS) provides a detailed report on stress in 11 broad areas. Respondents are asked if any of the 62 stressful life events recently occurred. Then they are asked to rate the difficulty experienced in dealing with each event they check off. Finally, they are asked if the events in a checked area still contribute to their overall stress level at the time they complete the CRISYS. This information provides a detailed picture of the recent and ongoing levels of stress within the families, as well it provides information about the nature and severity of the particular events they are experiencing. The large number of stress categories and stressful life events make it possible to characterize potentially a very broad range of stressful event profiles that families experience. This is important as the actual experience of each family may vary quite dramatically depending upon the nature and severity of the stressful life events of the experience. Given the detail and complexity of this instrument, the results of analysis are reported in separate tables for the two groups below.

Table 9.3 contains the CRISYS stress scores at T1 and T2 for the Summerside Comparison Group. Overall, the average number of events at T1 was 7.4 and at T2 it was 5.5. The pattern of stress was similar at T1 and T2. Financial, career, and home issues were the top three stressors in both time periods. A considerable portion of families experienced these stresses. Note, for example at T1, 74% of families indicated they were experiencing financial stress and at T2 this only decreased to 58%.

Table 9.3

Scores at Time 1 and Time 2 on the Crisis in Family Systems Scale for Summerside Comparison Group (n=19)

	Categories	Maximum Possible Events	Average Number of Events	Number of Families[1]	Percentage of Families	Average Level of Difficulty[2]	Events Still a Factor	
							Average Number of Events[3]	Percentage of Events
Time 1	Financial Stress	11	1.8	14	73.7	2.7	0.4	35.7
	Legal Stress	3	0.3	6	31.6	5.0	0.2	50.0
	Career Stress	4	1.1	13	68.4	1.9	0.1	15.4
	Relationship Stress	6	1.0	12	63.2	3.4	0.4	41.7
	Home Safety Stress	3	0.1	2	10.5	5.5	0.1	100.0
	Community Safety Stress	8	0.6	8	42.1	4.6	0.3	50.0
	Medical (Self) Stress	6	0.4	5	26.3	3.7	0.2	20.0
	Medical (Others) Stress	3	0.3	3	15.8	--	0.1	33.3
	Home Issues Stress	7	1.0	13	68.4	4.0	0.2	30.8
	Authority Stress	4	0.3	5	26.3	3.6	0.1	20.0
	Prejudice Stress	7	0.5	8	42.1	2.9	0.1	25.0
Time 2	Financial Stress	11	1.2	11	57.9	2.5	0.5	45.5
	Legal Stress	3	0.1	2	10.5	4.5	0.1	50.0
	Career Stress	4	0.7	9	47.4	20.0	0.1	22.2
	Relationship Stress	6	0.6	8	42.1	3.2	0.1	25.0
	Home Safety Stress	3	0.2	3	15.8	4.7	0.1	33.3
	Community Safety Stress	8	0.5	4	21.1	3.6	0.3	75.0
	Medical (Self) Stress	6	0.4	5	26.3	3.6	0.1	20.0
	Medical (Others) Stress	3	0.3	5	26.3	--	0.2	60.0
	Home Issues Stress	7	0.7	10	52.6	2.7	0.2	30.0
	Authority Stress	4	0.4	5	26.3	3.2	0.1	20.0
	Prejudice Stress	7	0.4	7	36.8	2.9	0.1	28.6

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Number of families that checked a stressful life event in each category.

[2] Level of difficulty experienced with an event ranges from 0-6.

[3] Average is based on number of events in the particular category where the event is still a factor when the measure was completed.

Table 9.4 contains the CRISYS stress scores for the Completed Program Group at T1 and T2. Overall, the average number of events at T1 was 5.4 and at T2 it was 8.0. The pattern of stress was only slightly different than the pattern for the Summerside Comparison Group. Note, for example, the top three stresses for this group were financial stress, community safety stress, and home issues at T1. These changed slightly to financial, career and community safety stress at T2. Again over half of the families experienced financial stress in both time periods and over 65% of families experienced career stress at T2.

9.4 Community Contacts and Referral Tracking System (CCRT)

The Community Contacts and Referral Tracking System (CCRT) parent survey asked parents to work through a category system and to list or check off any community resources they are currently or recently connected with. This measure provides a detailed description of the nature and extent of community connections experienced by the respondent. It can be used both as a profile of the population and as a baseline against which ongoing program community contacts and referrals can be measured. The instrument collects information in a broad range of areas including health, basic needs (such as food, clothing, and shelter), childcare and support, family and parent support, education and schools, recreation, general support agencies, and spiritual/cultural.

Table 9.5 contains the mean scores for T1 and T2 for both study groups. Several interesting patterns emerged. Note first that at T1 the Completed Program Group reported higher involvement with health, education, and spiritual/cultural resources than did the Summerside Comparison Group, which in contrast reported higher contacts with basic needs, childcare, family/parent support, recreation, and general support resources. Next, over time, the Completed Program Group tended to increase involvement with the different resources with the exception of family/parent support, which decreased, and recreation activities, which stayed the same from T1 to T2. In contrast, the Summerside Comparison Group tended to decrease contact over time with the exception of family/parent support, the use of resources in education and general support areas, which increased slightly. Please note that the decrease in the contact with health resources for the Summerside Comparison Group from T1 to T2 was statistically significant. Likewise, change over time in the area of health resources was significant for this group in comparison with the Completed Program Group. The Completed Program Group also significantly increased utilization of childcare/support from T1 to T2.

9.5 Child Behavior Checklist (CBCL)

Achenbach's (1983) Child Behavior Checklist for ages 2-3 consists of behavior problem items that can be scored on a child behavior profile. The scoring profile consists of six scales derived from a factor analysis of checklists filled out by parents of 400, 2- 3-year-old children. Some of the children were referred for mental health services and considered at risk for problems and others were drawn from general population samples. The six scales are anxious/depressed, withdrawn, sleep problems, somatic problems, aggressive behavior, and destructive behavior.

Table 9.4
Scores at Time 1 and Time 2 on the Crisis in Family Systems Scale
for the Best Start Completed Program Group (n=26)

	Categories	Maximum Possible Events	Average Number of Events	Number of Families[1]	Percentage of Families	Average Level of Difficulty[2]	Events Still a Factor	
							Average Number of Events[3]	Percentage of Events
Time 1	Financial Stress	11	1.4	13	50.0	3.3	0.5	69.2
	Legal Stress	3	0.1	2	7.7	4.0	--	50.0
	Career Stress	4	0.5	12	46.2	3.4	0.1	25.0
	Relationship Stress	6	0.4	8	30.8	3.0	--	--
	Home Safety Stress	3	0.2	6	23.1	3.8	--	--
	Community Safety Stress	8	1.2	14	53.8	2.3	0.4	28.6
	Medical (Self) Stress	6	0.3	5	19.2	3.8	--	20.0
	Medical (Others) Stress	3	0.2	5	19.2	--	--	20.0
	Home Issues Stress	7	0.7	13	50.0	1.9	--	--
	Authority Stress	4	0.1	3	11.5	5.0	--	--
	Prejudice Stress	7	0.3	7	26.9	4.0	0.2	57.1
Time 2	Financial Stress	11	2.1	18	69.2	3.7	1.3	77.8
	Legal Stress	3	0.3	6	23.1	5.2	0.2	66.7
	Career Stress	4	1.0	17	65.4	3.5	0.2	29.4
	Relationship Stress	6	0.8	15	57.7	4.3	0.4	66.7
	Home Safety Stress	3	0.4	8	30.8	4.6	0.1	37.5
	Community Safety Stress	8	1.1	14	53.8	4.8	0.6	50.0
	Medical (Self) Stress	6	0.4	10	38.5	5.3	0.2	60.0
	Medical (Others) Stress	3	0.5	12	46.2	--	0.2	50.0
	Home Issues Stress	7	0.6	11	42.3	4.1	0.4	72.7
	Authority Stress	4	0.3	5	19.2	3.8	0.2	80.0
	Prejudice Stress	7	0.5	10	38.5	4.4	0.4	70.0

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Number of families that checked a stressful life event in each category.

[2] Level of difficulty experienced with an event ranges from 0-6.

[3] Average is based on number of events in the particular category where the event is still a factor when the measure was completed.

Table 9.5

Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings on the Community Contact and Referral Tracking System for Cases in the Summerside Comparison Group and the Completed Program Group[1]

Study Group	Health			Basic Needs			Child Care/ Support			Family/Parent Support		
	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2
Summerside Comparison Group (n=18)	2.1[+]	0.9[+]	-1.2*	1.2	0.9	-0.3	0.9	0.9	0.0	0.4	0.7	0.3
Completed Program Group (n=26)	2.6	2.9	0.3*	0.6	0.8	0.2	0.5[+]	0.7[+]	0.2	0.2	0.1	-0.1

Study Group	Education			Recreational/Family Activities			General Support			Spiritual/ Cultural		
	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2
Summerside Comparison Group (n=18)	0.4	0.6	0.2	1.6	1.1	-0.5	0.1	0.3	0.2	0.2	0.1	-0.1*
Completed Program Group (n=26)	0.8	0.9	0.1	1.1	1.1	0.0	0.0	0.1	0.1	0.4	0.5	0.1*

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[+] Denotes a significant difference within a group from Time 1 to Time 2 at $p < .05$.

* Denotes significant difference between groups at $p < .05$.

[1] Higher scores indicate a greater number of community contacts.

On the CBCL profiles for ages 2-3, the percentiles at the right of the graphic display are based on parent's ratings of the normative sample of children. Scores above the 98th percentile are considered to be in the "clinical range" and signify a child with extreme behavioral difficulties. Scores above the 84th percentile can be considered "difficult" but still in the normal range.

The CBCL profiles for the children from the Summerside Comparison Group and the Completed Program Group are contained in Figures 9.1 and 9.2. Overall the profiles of the children from both groups are well within the normal range; however, the children in the Summerside Comparison Group were slightly higher in the withdrawn and somatic problems categories at T1. Both groups of children progressed towards the 50th percentile at T2 (see Appendix A, Table A-9).

Figure 9.1
T Scores at Time 1 and Time 2 on the Child Behavior Checklist
for Cases in the Summerside Comparison Group
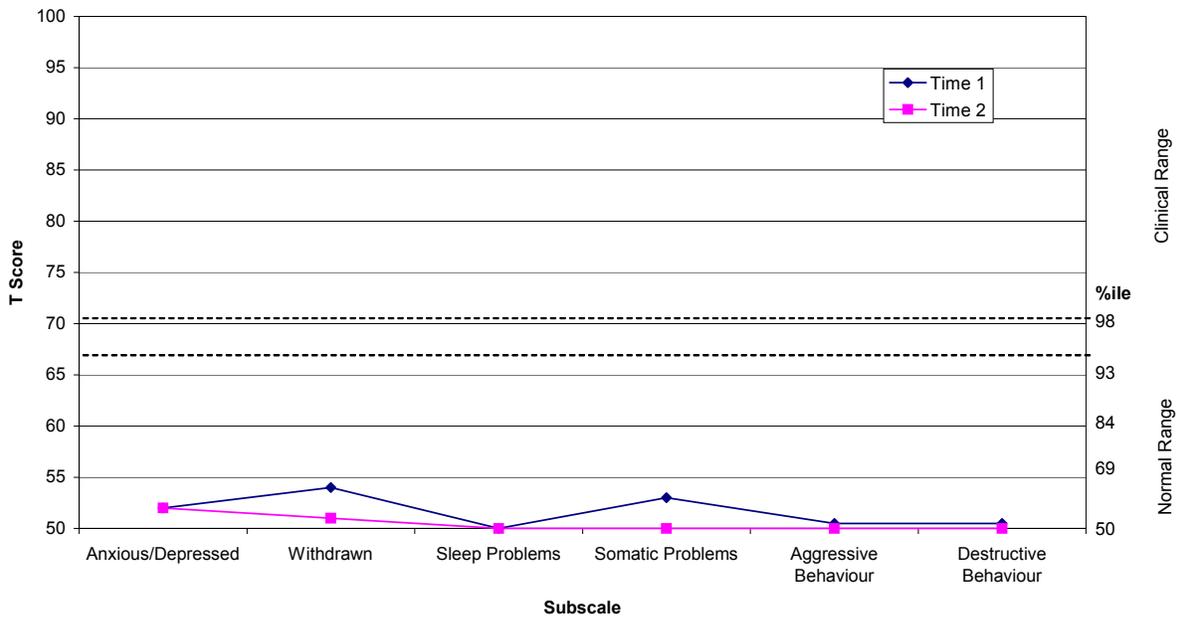
Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

Figure 9.2
T Scores at Time 1 and Time 2 on the Child Behavior Checklist
for Cases in the Completed Program Group
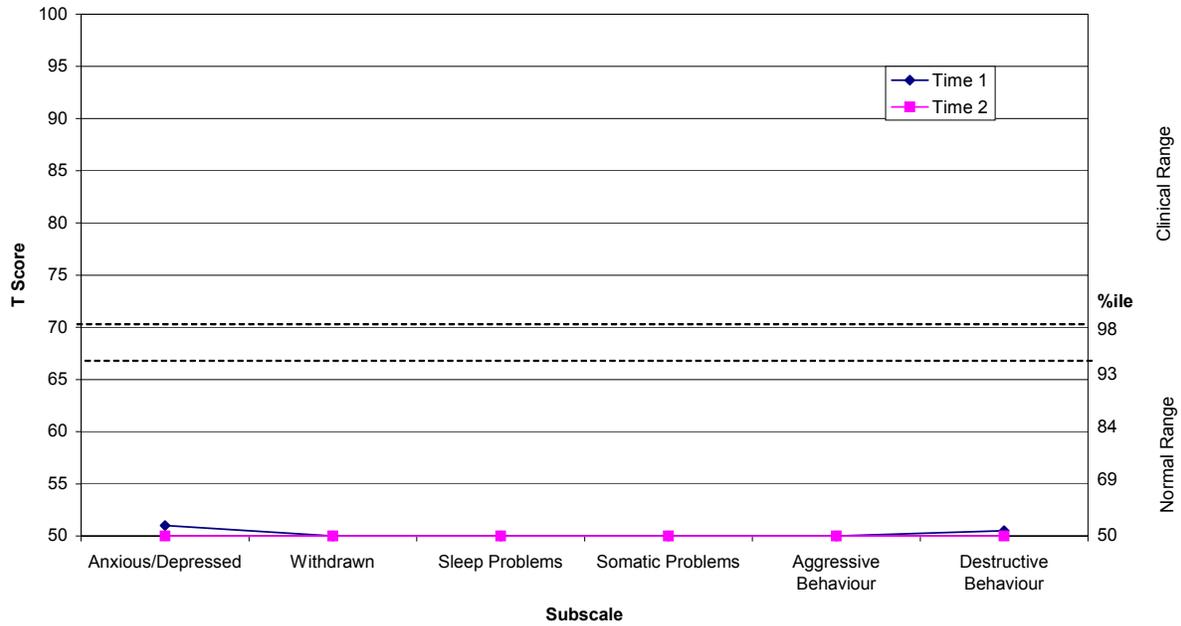
Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

10.0 OUTCOME RESULTS: PARENT INTERVIEW AND VISITOR-FAMILY RELATIONSHIP INVENTORY

Telephone interviews were conducted with 50 clients who had been in the Best Start program 12 months or more in order to collect information on families' experiences and views of the home visitation services. Two instruments were completed by respondents. The Parent Survey solicited participants' opinions of the extent to which they thought the program had helped them in various areas and with various challenges they might have experienced. The Visitor-family Relationship Inventory collected information regarding clients' perceptions of their relationship with their home visitor. It should be noted that because individuals voluntarily participated in the survey, the results do not necessarily represent all home visitation clients. However, comparison of the Record Screen data for clients who completed the interview with those who did not indicates those who did not complete the interview were only slightly higher risk than those who did the interview (see Appendix A, Table A-4).

10.1 Parent Survey

Individuals were asked about the degree to which the program has helped them in a number of different areas. Clients were also asked about whether the program has helped them with challenges that may make parenting more difficult.

Table 10.1 below presents the extent to which the respondents thought the program had provided them with assistance in a number of different areas. Overall, respondents were very positive in rating how the program has helped them. Well over three-quarters indicated the program helped "very much" with most child-related areas. This ranged from 77% who thought that the program has helped them very much with respect to being patient with their child's behaviour, to 94% who felt that the program helped very much in terms of their understanding of child development.

Respondents were also quite positive regarding other issues. Approximately half of the clients felt the program provided very much help with their ability to cope with stress (50%) or with problem solving (55%). However, a smaller proportion of clients rated the program as helping "very much" when it came to their personal relationships with other people (44%) or with their partner/spouse (40%). If the ratings are combined to include "some" then over 90% of the respondents felt that the program provided help with their ability to cope with stress and solve problems. Further, over 85% of respondents indicated that the program helped with their relationships with a partner or with other people either "very much" or to "some extent." Very few respondents reported that the program had helped "a little" or "not at all" in any area.

Table 10.1
Clients' Views of How the Program has Helped Them (n=50)[1]

Area	Very Much		Some		A Little		Not At All		Total	
	n	%	n	%	n	%	n	%	n	%
Understanding of child development	47	94.0	3	6.0	0	0.0	0	0.0	50	100.0
Understanding of parenting	42	84.0	8	16.0	0	0.0	0	0.0	50	100.0
Confidence in taking care of my child	43	86.0	6	12.0	1	2.0	0	0.0	50	100.0
Patience with my child's behaviour	37	77.1	8	16.7	3	6.3	0	0.0	48	100.0
Relationship with my child	41	87.2	4	8.5	2	4.3	0	0.0	47	100.0
The health of my child	39	84.8	6	13.0	1	2.2	0	0.0	46	100.0
The number of people I can rely on for help	26	54.2	18	37.5	4	8.3	0	0.0	48	100.0
The number of places I know about that I can go to for help	35	71.4	12	24.5	2	4.1	0	0.0	49	100.0
The number of places in my community that I can take my child to do things	31	62.0	15	30.0	4	8.0	0	0.0	50	100.0
Ability to cope with stress	24	50.0	20	41.7	4	8.3	0	0.0	48	100.0
Ability to solve problems	26	55.3	20	42.6	1	2.1	0	0.0	47	100.0
Relationship with my partner/spouse	14	40.0	16	45.7	4	11.4	1	2.9	35	100.0
Relationship with other people	18	43.9	19	46.3	3	7.3	1	2.4	41	100.0

Source of data: Home Visitation Parent Survey 2005.
[1] "Not applicable" responses and missing data have been excluded.

In asking how the program has helped clients, the interview also included questions about whether the program assisted individuals in meeting certain challenges that may make parenting more difficult. Respondents were asked to rate the degree to which the program was helpful to the client in responding to these challenges. The results are shown in Table 10.2. Challenges in which the clients felt the program was a great deal of help to them were in the following areas: dealing with baby's difficult temperament or nature (82%); building a social or support network (73%); and not feeling good about yourself (68%). Consistent with findings from the previous question also relating to helpfulness of the program, responses here indicated the significant impact of the Home Visitation program in playing a supportive role, and in providing effective parenting strategies. Lack of transportation, unemployment, and not having enough money for basic needs were the only areas where a few clients (13% to 23%) were not helped by the program.

Table 10.2
How the Program has Helped Clients Deal with Challenges (n=50)[1]

Challenges	A Great Deal		Somewhat		Not At All		Total	
	n	%	n	%	n	%	n	%
Lack of transportation	4	30.8	6	46.1	3	23.1	13	100.0
Not feeling a part of your community	12	54.5	8	36.4	2	9.1	22	100.0
Your social/support network (e.g., lack of family and friends you can rely on)	33	73.3	11	24.4	1	2.2	45	100.0
Not feeling good about yourself	30	68.2	14	31.8	0	0.0	44	100.0
Baby's difficult temperament or nature	36	81.8	8	18.2	0	0.0	44	100.0
Family relationships (other than with your child)	10	31.3	22	68.8	0	0.0	32	100.0
Trouble controlling your anger	11	47.8	11	47.8	1	4.3	23	100.0
Mental health issues (e.g., depression)	13	61.9	8	38.1	0	0.0	21	100.0
Medical/physical issues	7	58.3	5	41.7	0	0.0	12	100.0
Racial/cultural issues	1	100.0	0	0.0	0	0.0	1	100.0
Discrimination	0	0.0	0	0.0	0	0.0	0	--
Not having enough education	12	48.0	12	48.0	1	4.0	25	100.0
Unemployment	8	53.3	5	33.3	2	13.3	15	100.0
Inadequate housing	6	50.0	5	41.7	1	8.3	12	100.0
Not having enough money for basic needs	4	30.8	7	53.8	2	15.4	13	100.0
Involvement with the criminal justice/legal system	0	0.0	0	0.0	1	100.0	1	100.0
Family violence	1	50.0	1	50.0	0	0.0	2	100.0
Alcohol or drug use	2	66.7	1	33.3	0	0.0	3	100.0
Gambling	0	0.0	0	0.0	0	0.0	0	--
Child welfare involvement with children	0	0.0	0	0.0	0	0.0	0	--
Other stressful life events (e.g., death of a loved one)	3	100.0	0	0.0	0	0.0	3	100.0

Source of data: Home Visitation Parent Survey 2005.
[1] "Not applicable" responses and missing data have been excluded.

10.2 Visitor-family Relationship Inventory

A total of 50 respondents were given the Visitor-family Relationship Inventory. As shown in Table 10.3, overall the responses were extremely positive. For all items, the vast majority of respondents agreed that their home visitor was a positive influence in their lives. The items in which at least 80% of respondents indicated they strongly agreed with the statement describing their home visitor were:

- the home visitor "explains the information she gives me" (92%);

- the home visitor "motivates me to protect my baby's/child's health" (84%);

- the home visitor "is sensitive to how I feel" (84%);

- "My work with my home visitor helps the healthy development of my baby/child" (83.7%);

- the home visitor "cares about what happens to me" (80%);

- the home visitor "respect my family's ways of doing things" (80%); and

- "My work with my home visitor helps my own development as a mother/parent" (80%).

Table 10.3
Client Ratings on the Visitor-family Relationship Inventory (n=50)

My home visitor…	Agree Strongly		Agree		Neither Agree/ Disagree		Disagree		Disagree Strongly	
	n	%	n	%	n	%	n	%	n	%
Helps me understand	32	64.0	18	36.0	0	0.0	0	0.0	0	0.0
Helps me keep a positive outlook	34	68.0	16	32.0	0	0.0	0	0.0	0	0.0
Brings out the best in me	22	44.0	27	54.0	1	2.0	0	0.0	0	0.0
Helps me learn to solve my problems	24	48.0	23	46.0	2	4.0	1	2.0	0	0.0
Encourages me to make my own decisions	33	66.0	17	34.0	0	0.0	0	0.0	0	0.0
Helps my family get along better	27	54.0	21	42.0	2	4.0	0	0.0	0	0.0
Does not ask me to do anything I cannot do	33	66.0	16	32.0	0	0.0	1	2.0	0	0.0
Seems to understand my situation	31	62.0	19	38.0	0	0.0	0	0.0	0	0.0
Helps me build my role within the family	36	72.0	14	28.0	0	0.0	0	0.0	0	0.0
My work with my home visitor helps my own development as a mother/parent	40	80.0	10	20.0	0	0.0	0	0.0	0	0.0
My work with my home visitor helps the healthy development of my baby/child[1]	41	83.7	8	16.3	0	0.0	0	0.0	0	0.0
Understands my plans and goals	31	62.0	18	36.0	1	2.0	0	0.0	0	0.0
Helps me develop as a member of my family	29	58.0	18	36.0	3	6.0	0	0.0	0	0.0
Respects my independence	38	76.0	12	24.0	0	0.0	0	0.0	0	0.0
Accepts my ways	36	72.0	14	28.0	0	0.0	0	0.0	0	0.0
Motivates me to protect my baby's/child's health	42	84.0	7	14.0	1	2.0	0	0.0	0	0.0
Cares about what happens to me	40	80.0	10	20.0	0	0.0	0	0.0	0	0.0
Is sensitive to how I feel	42	84.0	8	16.0	0	0.0	0	0.0	0	0.0
Explains the information she gives me (such as information sheets)	46	92.0	4	8.0	0	0.0	0	0.0	0	0.0
Understands me	38	76.0	12	24.0	0	0.0	0	0.0	0	0.0
Praises me when I reach a goal	39	78.0	10	20.0	1	2.0	0	0.0	0	0.0
Shares with me how she feels about things	28	56.0	18	36.0	1	2.0	3	6.0	0	0.0
Encourages me to succeed in daily life	37	74.0	13	26.0	0	0.0	0	0.0	0	0.0
Respects my family's ways of doing things	40	80.0	10	20.0	0	0.0	0	0.0	0	0.0
Work we do together builds my strengths	36	72.0	14	28.0	0	0.0	0	0.0	0	0.0
I trust my home visitor to look after my best interests	39	78.0	11	22.0	0	0.0	0	0.0	0	0.0
Tells me about herself	19	38.0	26	52.0	2	4.0	2	4.0	1	2.0

Source of data: Visitor-Family Relationship Inventory.

[1] One case was missing data on this question.

11.0 OUTCOME RESULTS: INVOLVEMENT WITH CHILD WELFARE SERVICES[13]

The purpose of this chapter is to identify the effect of the Best Start program on the frequency and nature of intervention by Child Welfare services. This analysis includes data regarding the number of investigations, reasons for investigation, and action taken. Data on assessments prior to investigations under Section 11(1) of the *Child Protection Act (CPA)* were not included in this analysis. The data for analysis were supplied to CRILF by the Director of Child Welfare under Section 9(2) of the *CPA*, which permits the disclosure of information that does not identify particular persons. Unfortunately, the lack of identifying information does not permit data analysis that would require linking with other data sets.

The overall strategy of analysis of data for this chapter involves three separate and distinct analyses. First, we examined data from the Best Start Program Group to identify a profile of involvement with Child Welfare over time. Second, a comparative analysis was conducted which examined the involvement with Child Welfare for the Non-participant Comparison Group and a Comparable Best Start Program Group. Third, a comparative analysis was conducted which examined the longer-term involvement with Child Welfare for the Summerside Comparison Group compared with the Completed Program Group. Descriptions of these groups and their relative equality at pre-program are summarized from Section 3.3.4 and described below.

- Best Start Program Group: This group consists of all those families (n=491) who were active clients in December 2001 when the new phase of this current evaluation began or became active in the program between December 2001 and November 2004.

- Non-Participant Comparison Group: This group consists of 50 families recruited by the Public Health Nurses for the evaluation. These were families who were screened positive but declined to become involved in the program. They appear to be representative of the total population of positive screens who declined to become involved in the program (n=524) (see Section 3.3.4 and Table A-2 in Appendix A).

- Comparable Best Start Program Group: The Comparable Best Start Program Group (n=331) matched the time period of the birth of the child to the Non-participant Comparison Group (n=50) and was constructed specifically for the data analysis of Child Welfare involvement. The intent was to create a study group which would match the Non-participant Comparison Group on the age of the target child, thus equalizing the amount of time that each group would have for possible involvement with Child Welfare. Analysis in Section 3.3.4 (and Table A-3, Appendix A) suggests that the Comparable Best Start Program Group is a significantly higher risk group than the Non-participant Comparison Group. Thus, by definition, we would expect higher levels of involvement with Child Welfare for this group in comparison with the Non-participant Comparison Group.

---

[13] We would like to thank Mr. Ron Stanley, Director of Child Welfare, Prince Edward Island for his detailed review and contribution to a previous draft of this chapter.

- Summerside Comparison Group: CRILF began data collection in 1999 with the Summerside Comparison Group. This group was originally selected as a "non-treatment" comparison group since Summerside was the second-largest community in the province and thus the most similar to Charlottetown. As well, at the time it did not have a Healthy Family home visitation program (see Section 3.3.4).

- Completed Program Group: A sample of clients who completed the Best Start program were also identified in order to determine the longer-term effects of the program. In April 2004, the CRILF research team identified 40 families that had completed the program after 36 months of involvement. The Best Start workers were able to contact 28 of these clients, all of whom agreed to be contacted by the research team for interviews. The CRILF research team was able to contact 26 of the 28 and this group is included in the analysis. As the description of analysis indicates above, the Completed Program Group and the Summerside Comparison Group were compared regarding involvement with Child Welfare. Thus, it is important to identify any pre-program differences between the groups which could affect the results of the analysis. As the analysis in Section 3.3.4 indicates, pre-program scores on the Record Screen risk items suggest that the Completed Program Group is somewhat higher risk than the Summerside Comparison Group (see Table A-5, Appendix A). This would lead us to conclude that the Completed Program Group should have higher levels of involvement with Child Welfare than the Summerside Comparison Group.

11.1   An Overview of Child Welfare Services

Every Canadian provincial/territorial jurisdiction has a child protection service agency, which has legal responsibility under Child Welfare legislation for investigating reports that a child may be in need of protection and taking appropriate steps to protect children from maltreatment. Services for the child and parents may be provided in their home, or the child may be removed from the home on a temporary or permanent wardship basis. The agency may provide services either on a voluntary basis or an involuntary basis, using the legal system to require families to receive services or remove the child from parental care. In PEI, this agency is called Child Welfare Services and it operates under the authority of the *Child Protection Act (CPA)* (proclaimed May 2003).

Child Welfare services usually begin with the report that a child may be in need of protection as is shown in Figure 11.1. Reports are often made by professionals who have contact with the family, such as a family or emergency physician. Reports may also be made by a neighbour or parent. In Prince Edward Island, as with every other jurisdiction in Canada (with the exception of the Yukon), the reporting of a child suspected to be in need of protection is mandatory.

Figure 11.1
Decision Process for Child Welfare Services

Report of Child in Need of Protection → Assessment → Closed / Community Service

Investigation → Founded / Unfounded

Founded → Need of Protection / No Need of Protection

Need of Protection → Court Intervention / Voluntary Services
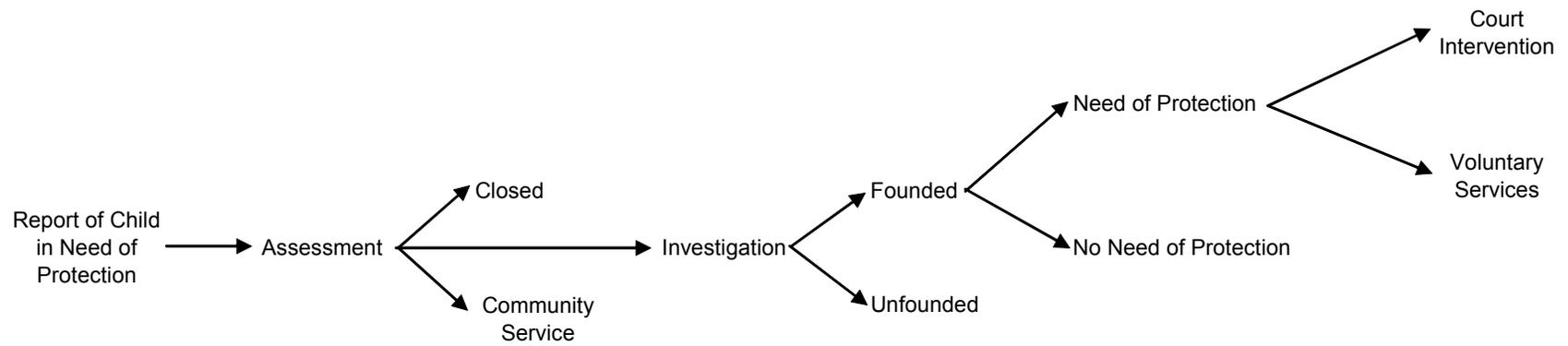
As Figure 11.1 indicates, in PEI the first step in determining whether a child is in need of protection is to conduct an assessment of the circumstances affecting the child (*CPA,* s. 11(1)). After the assessment is complete, the Director may determine whether the case requires: no further action and is closed; a fuller investigation; or a referral to community services. In addition, if circumstances require it, the Director may apprehend the child or make an application to the court for a supervision order or a custody and guardianship order. Data on assessments were not collected for the purpose of this report given the fact a high proportion of cases are closed after the initial assessment and/or referral to community services.

The next step in the process is the investigation. Under the *CPA* (s. 12(1)), the Director may carry out an investigation of the circumstances and condition of the child if there is reasonable grounds to believe that the child may be in need of protection. If the finding of an investigation is that a child is in need of protection, then further action might involve intervention by the agency and/or the provision of support placement services. Intervention could involve a range of responses from voluntary agreements to provide Child Welfare services (in the home or providing temporary out-of-home care) to emergency apprehension orders. Support services in the home (which can be provided by agreement or by court order) could involve such services as home supports or parenting education, whereas placement services (which can also be provided by agreement or court order) involve taking the child out of the home and placing him or her in another setting ranging from extended family to foster care.

If the Director concludes after the investigation that further action is required to protect the child, then the least intrusive course of action that adequately protects the child's health and safety is determined to be the appropriate response. More intrusive responses should only be employed after lesser intrusive responses are ruled out.

A recent national study of the incidence of child maltreatment by Trocmé et al. (2005) found that in Canada as a whole in 2003 there were 217,319 investigations. Almost one-half (47%) of these investigations were substantiated for an incidence rate of 21.7 substantiated investigations per 1,000 children across Canada. Of all the substantiated cases of maltreatment in 2003, 13% resulted in a change of residency for the child. For the 2003/2004 fiscal year, the Director of Child Welfare in PEI provided care and guardianship for 294 children (PEI Department of Health and Social Services).

11.2   Profile of Involvement for the Best Start Program Group

Investigations

Table 11.1 contains an overview of information regarding the involvement of the Best Start Program Group with Child Welfare. Each investigation was defined as an involvement. Overall, over 20% of the Best Start Program Group (n=100) had at least one report of a Child Welfare investigation up to December 2004. The total number of investigations was 190, which amounts to almost 2 investigations per case. Of these investigations 66% were founded and just over half of these were in need of protection (i.e., 34.7% in need of protection and 31.1% no need of protection, which normally results in the cases being closed). Almost a third of the cases (30%) were identified as unfounded.

Table 11.1
Cases with Child Welfare Involvement for Best Start Program Group[1]

	Best Start Program Group	
Total number of cases	491	
Number of cases with involvement	100	
Percentage of cases with involvement	20.4%	
Total number of investigations[2]	190	
Average number of investigations per case with involvement	1.9	
Investigation outcomes -- unfounded	57	30.0%
Investigation outcomes -- founded -- no need of protection	59	31.1%
Investigation outcomes -- founded -- in need of protection	66	34.7%
Investigation outcomes -- unknown	8	4.2%

Source of data: Prince Edward Island Child Welfare from December 2001 to December 2004.

[1] Involvement is defined as having one or more child welfare reports which resulted in an investigation. (Assessments were not included).

[2] Number of investigations per case ranges from 1-11. Focus of investigation includes: target child, n=95; both, n=55; unknown, n=15; and other child, n=22.

Timing of Investigation

Table 11.2 contains information on the timing of the investigation, i.e., whether the investigation occurred before the client became involved with the program, during the client's involvement with the program or after the client left the program. Overall, over 18% of the total investigations occurred before program involvement and over 60% occurred during the client's involvement with the program. Just over 20% occurred after the client left the program. As Table 11.2 further indicates, the rate of cases unfounded was lower during program involvement (i.e., 28.1%) than before program involvement or after program (both over 32%). The rate of founded – no need of protection was also relatively lower for the before program involvement group compared to the other categories.

It should be noted that prior to 2001 potential clients for the Best Start program who had open Child Welfare files were not eligible for the program (Elnitsky et al., 2003, p. 36). Since 2001 the program has been working much more closely with Child Welfare services and has even developed a draft protocol to ensure the clients involved in Child Welfare receive appropriate services.

Table 11.2
Characteristics of Child Welfare Involvement by Timing of
Investigation for Best Start Program Group[1]

Investigation Outcome	Before Program Involvement		During Program Involvement		After Program Involvement	
	n	%	n	%	n	%
Unfounded	11	32.4	32	28.1	13	33.3
Founded -- no need of protection	5	14.7	39	34.2	14	35.9
Founded -- in need of protection	13	38.2	41	36.0	11	28.2
Unknown	5	14.7	2	1.8	1	2.6
Total investigations	34	100.0	114	100.0	39	100.0

Source of data: Prince Edward Island Child Welfare from December 2001 to December 2004.

[1] The timing of the investigation was unknown for three investigations. These are excluded from the analysis.

109

Reasons for Investigation

Table 11.3 contains the reasons why Child Welfare investigations were initiated. Interestingly, the highest category was domestic violence with over 24%. Neglect was second with approximately 17%. Failure to adequately supervise/protect was the third most frequent reason and accounted for approximately 14% of the investigations followed by addiction, which was the reason given for 12% of the investigations.

Table 11.3
Reasons for Child Welfare Investigations for Best Start Program Group[1,2]

Reason	Best Start Program Group	
	n	%
Emotional abuse	7	3.7
Physical abuse	9	4.7
Neglect	32	16.8
Failure to adequately supervise/protect	26	13.7
Failure to provide proper supervision/protection	13	6.8
Sexual abuse	3	1.6
Substantial risk of abuse (all forms)	16	8.4
Domestic violence	47	24.7
Failure to provide proper treatment	2	1.1
Abandonment	2	1.1
Child out of control	1	0.5
Addiction	23	12.1
Other	13	6.8

Source of data: Prince Edward Island Child Welfare from December 2001 to December 2004.

[1] There may be more than one reason per investigation.

[2] Total number of investigations=190.

Action Taken

Table 11.4 contains information on action taken when Child Welfare investigations were founded – in need of protection for the Best Start Program Group. The most common action was voluntary service agreements, which were used in over 76% of the cases. Next, volunteer care agreements were used in approximately 7% of the cases. The next most common actions were apprehension (5%) and supervision orders (5%). In total there were only 14 cases of the original 66 cases found in need of protection where action other than voluntary service agreements were taken. These formal actions resulted in 10 placements, six of which were in foster care and four in a relative non-placement. While there were relatively few cases where actions and subsequent placements were made (i.e., 10 placements for the 66 founded – in need of protection investigations), this amounts to a rate of 15% of the cases requiring a change of residence of the child, which is comparable to the 13% identified in the national survey by Trocmé et al. (2005).

Table 11.4
Actions Taken for Child Welfare Investigations Founded -- In Need of
Protection for Target Child in the Best Start Program Group[1]

Action[2]	Best Start Program Group	
	n	%
Apprehension	3	5.1
Supervision order	3	5.1
Temporary Wardship	2	3.4
Permanent Wardship	2	3.4
Volunteer care agreement	4	6.8
Voluntary service agreement	45	76.3
Total	**59**	**100.0**

Source of data: Prince Edward Island Child Welfare from December 2001 to December 2004.

[1] Total number of investigations founded -- in need of protection (66-7 other child cases)=59.

[2] More than one action may be taken in an investigation.

11.3   Best Start/Non-participant Comparison Group

This section of the analysis of Child Welfare data focuses on a comparison of the Comparable Best Start Program Group and the Non-participant Comparison Group. Data from the Record Screen provided a pre-program comparison of the families on the 17 risk items listed in the Record Screen for the Comparable Best Start Program Group (n=331) and the Non-participant Comparison Group (n=49).   Overall, it appeared that the Comparable Best Start Program Group was a significantly higher risk group than the Non-participant Comparison Group. As Table A-3 (see Appendix A) indicates, the Comparable Best Start Program Group was higher on 14 of the 17 items than the Non-participant Comparison Group and five of these differences were statistically significant. This would lead us to expect a higher level of involvement with Child Welfare for this group in comparison to the Non-participant Comparison Group.

Investigations

Table 11.5 contains an overview of the information regarding involvement with Child Welfare comparing the Best Start Program Group with the Non-participant Comparison Group. Each investigation was defined as an involvement. Overall, 16% of the Best Start Program Group (n=53) had at least one report of a Child Welfare investigation between December 2001 and December 2004 compared to just over 12% (n=6) for the Non-participant Comparison Group.

Table 11.5 also indicates a much higher rate of unfounded investigations (i.e., 66.7%) for the Non-participant Comparison Group in comparison with the Best Start Program Group (i.e., 28.7%). Further, in contrast, the percentage of investigations resulting in founded – in need of protection was much higher for the Best Start Program Group (i.e., 40.2%) than the Non-participant Comparison Group (0%). This pattern of findings would suggest that the reporting of children in need of protection was more accurate for the Best Start Program Group than for the Non-participant Comparison Group. Further, it would be consistent with the fact that the Best Start Program Group was higher risk pre-program and was expected to have much higher rates of Child Welfare involvement.

Table 11.5
Cases with Child Welfare Involvement by Non-participant
Comparison Group and Comparable Best Start Program Group[1]

	Comparable Best Start Program Group[2]		Non-participant Comparison Group	
Total number of cases	331		49	
Number of cases with involvement	53		6	
Percentage of cases with involvement	16.0%		12.2%	
Total number of investigations[3]	87		9	
Average number of investigations per case with involvement	1.6		1.5	
Investigation outcomes -- unfounded	25	28.7%	6	66.7%
Investigation outcomes -- founded -- no need of protection	22	25.3%	2	22.2%
Investigation outcomes -- founded -- in need of protection	35	40.2%	0	0.0%
Investigation outcomes -- unknown	5	5.7%	1	11.1%

Source of data: Prince Edward Island Child Welfare from December 2001 to December 2004.

[1] Involvement is defined as having one or more child welfare reports which resulted in an investigation. (Assessments were not included).

[2] The Comparable Best Start Program Group includes cases in which the target child was born in the same date range as the Non-participant Comparison Group.

[3] Number of investigations per case ranges from 1-11 for the Comparable Best Start Program Group and 1-3 for the Non-participant Comparison Group. For the Comparable Best Start Program Group, the focus of the investigation includes: target child, n=42; both, n=21; unknown, n=7; and other child, n=17. For the Non-participant Comparison Group, the focus of the investigation includes: target child, n=5; both, n=2; unknown, n=1; and other child, n=1.

Reasons for Investigation

Table 11.6 contains the reasons why Child Welfare investigations were initiated. For the Best Start Program Group, the highest category was domestic violence with over 27%. Neglect was second with just over 18%, followed by addiction with approximately 14% and failure to adequately supervise with just over 12%. As Table 11.6 further indicates, the pattern was somewhat similar for the Non-participant Comparison Group, however the reasons for reporting for the Best Start Program Group were very broad, covering the gamut of potential child maltreatment, while the pattern for the Non-participant Comparison Group included only four reasons. These four reasons seem to be relatively external in comparison with the reasons given for the Best Start cases. It appears that the intimate involvement that Best Start workers have with families provides them with more detailed information on the family's issues and thus contributes to more accurate reporting.

Table 11.6
Reasons for Child Welfare Investigations by Non-participant
Comparison Group and Comparable Best Start Program Group[1,2]

Reason	Comparable Best Start Program Group[3]		Non-participant Comparison Group	
	n	%	n	%
Emotional abuse	1	1.1	0	0.0
Physical abuse	3	3.4	0	0.0
Neglect	16	18.4	1	11.1
Failure to adequately supervise/protect	11	12.6	1	11.1
Failure to provide proper supervision/protection	7	8.0	0	0.0
Sexual abuse	0	0.0	0	0.0
Substantial risk of abuse (all forms)	7	8.0	0	0.0
Domestic violence	24	27.6	1	11.1
Failure to provide proper treatment	1	1.1	0	0.0
Abandonment	2	2.3	0	0.0
Child out of control	1	1.1	0	0.0
Addiction	12	13.8	1	11.1
Other	6	6.9	0	0.0

Source of data: Prince Edward Island Child Welfare from December 2001 to December 2004.

[1] There may be more than one reason per investigation.

[2] Total number of investigations: Comparable Best Start Program Group=87; and Non-participant Comparison Group=9.

[3] The Comparable Best Start Program Group includes cases in which the target child was born in the same date range as the Non-participant Comparison Group.

Action Taken

As Table 11.7 indicates, the Non-participant Comparison Group had no investigations which resulted in founded – in need of protection therefore no further action was taken. In comparison, the Best Start Program Group had 31 investigations founded – in need of protection that resulted in further action. The most common action was voluntary service agreements, which were used in 68% of the cases. The other more formal actions were equally distributed at 7% each. These actions resulted in three placements in foster care and two relative non-placements. In summary, there were five placements for 35 investigations founded – in need of protection resulting in a rate of just over 14% of the cases requiring a change of residency of the child which again is comparable to the 13% identified in the national survey by Trocmé et al. (2005).

Table 11.7
Actions Taken for Child Welfare Investigations Founded --
In Need of Protection for the Target Child in the Non-participant
Comparison Group and Comparable Best Start Program Group[1]

Action[3]	Comparable Best Start Program Group[2]		Non-participant Comparison Group	
	n	%	n	%
Apprehension	2	6.5	--	--
Supervision order	2	6.5	--	--
Temporary Wardship	2	6.5	--	--
Permanent Wardship	2	6.5	--	--
Volunteer care agreement	2	6.5	--	--
Voluntary service agreement	21	67.5	--	--
Total	**31**	**100.0**	**--**	**--**

Source of data: Prince Edward Island Child Welfare from December 2001 to December 2004.

[1] Total number of investigations founded -- in need of protection: Comparable Best Start Program Group (35-4 other child cases)=31; and Non-participant Comparison Group=0.

[2] The Comparable Best Start Program Group includes cases in which the target child was born in the same date range as the Non-participant Comparison Group.

[3] More than one action may be taken in an investigation.

11.4   Completed Program Group/Summerside Comparison Group Comparisons

This section of the analysis of Child Welfare data focuses on a comparison of the Completed Program Group and the Summerside Comparison Group. A pre-program comparison of these two groups on risk factors indicates that the Completed Program Group (n=26) was significantly higher on depression and involvement with the criminal justice system than the Summerside Comparison Group (n=19).   In contrast, the Summerside Comparison Group was significantly higher risk only on marital status (single, separated or divorced) (see Appendix A, Table A-5). It should be noted that the findings in this section are limited by the small size of the samples compared.

Investigations

Table 11.8 contains an overview of the information regarding involvement with Child Welfare comparing the Completed Program Group with the Summerside Comparison Group. Each investigation was defined as an involvement. Overall, 31% of the Completed Program Group (n=8) had at least one report of a Child Welfare investigation up to December 2004 compared to 58% (n=11) for the Summerside Comparison Group. Further, there was an average of 1.5 investigations per case for the Summerside Comparison Group compared to 2.3 for the Completed Program Group.

Table 11.8 also indicates that the unfounded rates were slightly higher for the Completed Program Group (i.e., 33.3%) compared to the Summerside Comparison Group (25%). In contrast, over 75% of the investigations of the Summerside Comparison Group were founded compared to 66% for the Completed Program Group. Of these, over 43% of the investigations for the Summerside Comparison Group were founded – no need of protection compared to 33% of the Completed Program Group cases.

Table 11.8
Cases with Child Welfare Involvement by Summerside
Comparison Group and Completed Program Group[1]

	Summerside Comparison Group		Completed Program Group	
Total number of cases	19		26	
Number of cases with involvement	11		8	
Percentage of cases with involvement	57.9%		30.8%	
Total number of investigations[2]	16		18	
Average number of investigations per case with involvement	1.5		2.3	
Investigation outcomes -- unfounded	4	25.0%	6	33.3%
Investigation outcomes -- founded -- no need of protection	7	43.8%	6	33.3%
Investigation outcomes -- founded -- in need of protection	5	31.3%	6	33.3%
Investigation outcomes -- unknown	0	0.0%	0	0.0%

Source of data: Prince Edward Island Child Welfare from May 1999 to December 2004.

[1] Involvement is defined as having one or more child welfare reports which resulted in an investigation. (Assessments were not included).

[2] Number of investigations per case ranges from 1-5 for the Summerside Comparison Group and 1-6 for the Completed Program Group. For the Completed Program Group the focus of the investigation includes: target child, n=7; both, n=9; and unknown, n=2. for the Summerside Comparison Group the focus of the investigation includes: target child, n=3; both, n=6; and other child, n=7.

Reasons for Investigation

Table 11.9 contains the reasons why Child Welfare investigations were initiated. For the Completed Program Group, the highest category was addictions with over 33%. Physical abuse and neglect were the next two highest categories at 22% each. Domestic violence was the reason in 11% of the investigations for this group.

In contrast, for the Summerside Comparison Group, the highest category was domestic violence with over 31%. Neglect and failure to adequately supervise/protect were the second highest categories at approximately 19% each. Physical abuse was the reason given for approximately 13% of the cases.

Action Taken

Due to the small number of cases in this analysis, only a few placements were made (and cannot reliably be reported). The majority of cases for both groups resulted in voluntary service agreements.

Table 11.9
Reasons for Child Welfare Investigations for Summerside
Comparison Group and Completed Program Group[1,2]

Reason	Summerside Comparison Group		Completed Program Group	
	n	%	n	%
Emotional abuse	1	6.3	2	11.1
Physical abuse	2	12.5	4	22.2
Neglect	3	18.8	4	22.2
Failure to adequately supervise/protect	3	18.8	1	5.6
Failure to provide proper supervision/protection	1	6.3	0	0.0
Sexual abuse	0	0.0	2	11.1
Substantial risk of abuse (all forms)	0	0.0	0	0.0
Domestic violence	5	31.3	2	11.1
Failure to provide proper treatment	1	6.3	0	0.0
Abandonment	0	0.0	0	0.0
Child out of control	0	0.0	0	0.0
Addiction	1	6.3	6	33.3
Other	1	6.3	0	0.0

Source of data: Prince Edward Island Child Welfare from May 1999 to December 2004.

[1] There may be more than one reason per investigation.

[2] Total number of investigations: Summerside Comparison Group=16; and Completed Program Group=18.

12.0 HEALTH CARE UTILIZATION

The purpose of this chapter is to identify whether the Best Start program increases the appropriate utilization of health care services by its clients.

The analysis of health care utilization below includes data regarding health profiles at birth, and utilization of emergency room services, hospitalizations, family physician visits, and specialist visits. Data related to use of emergency room services and hospital care exclude birth events. Data for all groups except the Non-participant Comparison Group include ages from birth to six years; for the Non-participant Comparison Group the age range is birth to three years. Unfortunately, data were only available in aggregate format and thus, the analyses of these data were limited to broad comparisons between groups. The following groups are compared in the analysis of health care services utilization:

- Best Start Program Group: Includes Best Start client families who had an active file with the program during the period December 1, 2001 to December 31, 2004.

- Non-participant Comparison Group: Includes families who were eligible for and declined the Best Start program and agreed to participate in the research.

- Completed Program Group: A sub-sample of the Best Start Program Group that includes families who completed three years with the program and agreed to participate in the research.

- Summerside Comparison Group: Includes families who were eligible for the Best Start program in 2000 and agreed to participate in the research.

- General Population: A statistical comparison group for the province of Prince Edward Island excluding study participants and stillbirths.

For each group and type of health contact, the base sample includes any child who had one or more health contacts of that type.

12.1   Health Profiles at Birth

Table 12.1 contains a health profile of the mother and infant at the time of the birth of the infant for Best Start families who entered the program in 2002 and the general population, which includes all children born in Prince Edward Island in 2002. Data on all variables were not available for the General Population. The Best Start mothers and infants were at higher risk in most categories where data were available than the General Population. The Best Start mothers were younger, with an average age of 23.5 years, compared to 28.7 years old for the General Population. Even though they were significantly younger, the Best Start Program Group mothers had a greater average number of previous pregnancies than the General Population (1.1 compared to 0.7).

Table 12.1
Selected Health and Demographic Characteristics of Mothers and Infants
for Clients Entering the Program in 2002 and General Prince Edward Island Population

Characteristics of Mother and Infant	Clients[1]		General Population[2]	
	n = 47	Missing Values	n = 1,308	Missing Values
Mother				
Age (mean)	23.5 yrs.	1	28.7 yrs.	0
Age (median)	22.0 yrs.	1	--	--
Number of previous pregnancies (mean)	1.1	1	0.7[3]	--
Number of previous pregnancies (median)	1.0	1	--	--
Smoked during pregnancy	45.7%	3	22.1%	0
Drank alcohol during pregnancy	26.1%	3	--	--
Used street drugs during pregnancy	10.9%	2	--	--
Breastfeeding baby	65.2%	1	61.8%	0
Infant				
Gestation less than or equal to 37 weeks	6.6%	7	--	--
Low birth weight (less than or equal to 2500 grams)	6.3%	0	4.4%	0

Source of data: Public Health Nursing files for clients and PEI Prenatal Database Report 2002 for general population

Notes: Data exclude infants who have died. Percentages reported are based on totals excluding missing values.

[1] Home Visitation group includes individuals who entered the Home Visitation program in 2002.

[2] General Population includes all children born in Prince Edward Island in 2002.

[3] Estimates based on data indicating that most women who gave birth in Prince Edward Island in 2002 were having their first (42.3%) or second (36.2%) child.

Risk behaviours during pregnancy were quite prevalent among the Best Start Program Group mothers. For example, almost one-half of the Best Start Program Group mothers smoked during pregnancy (45.7%) compared to less than one-quarter of mothers in the General Population (22.1%). Although no comparable data were available for the General Population, a substantial proportion of Best Start Program Group mothers drank alcohol (26.1%) or used street drugs (10.9%) during their pregnancy. Slightly more mothers in the Best Start Program Group breastfed their infants than in the General Population (65.2% compared to 61.8%).

In terms of the infants, the home visitation infants also exhibited higher levels of risk than the General Population infants. For example, 6.3% of the Best Start Program Group infants were less than or equal to 2500 grams at birth compared to 4.4% for the General Population. Although no comparable data were available for the General Population, 6.6% of Best Start Program Group infants were premature (i.e., gestation less than or equal to 37 weeks).

12.2   Emergency Room Visits

Figure 12.1 shows the average number of emergency room visits by study group for individuals who utilized this service. The average number of emergency room visits for the Best Start Program Group was higher than for the Non-participant Comparison Group (4.2 compared to 3.2). The Summerside Comparison Group had a substantially higher average number of emergency room visits (10.7) than the Completed Program Group (6.7). The average number of emergency room visits for the General Population was 4.9, which was most similar to the Best Start Program Group, somewhat higher than the Non-participant Comparison Group, and considerably lower than both the Completed Program Group and the Summerside Comparison Group.

Figure 12.1
Average Number of Emergency Room Visits per Child
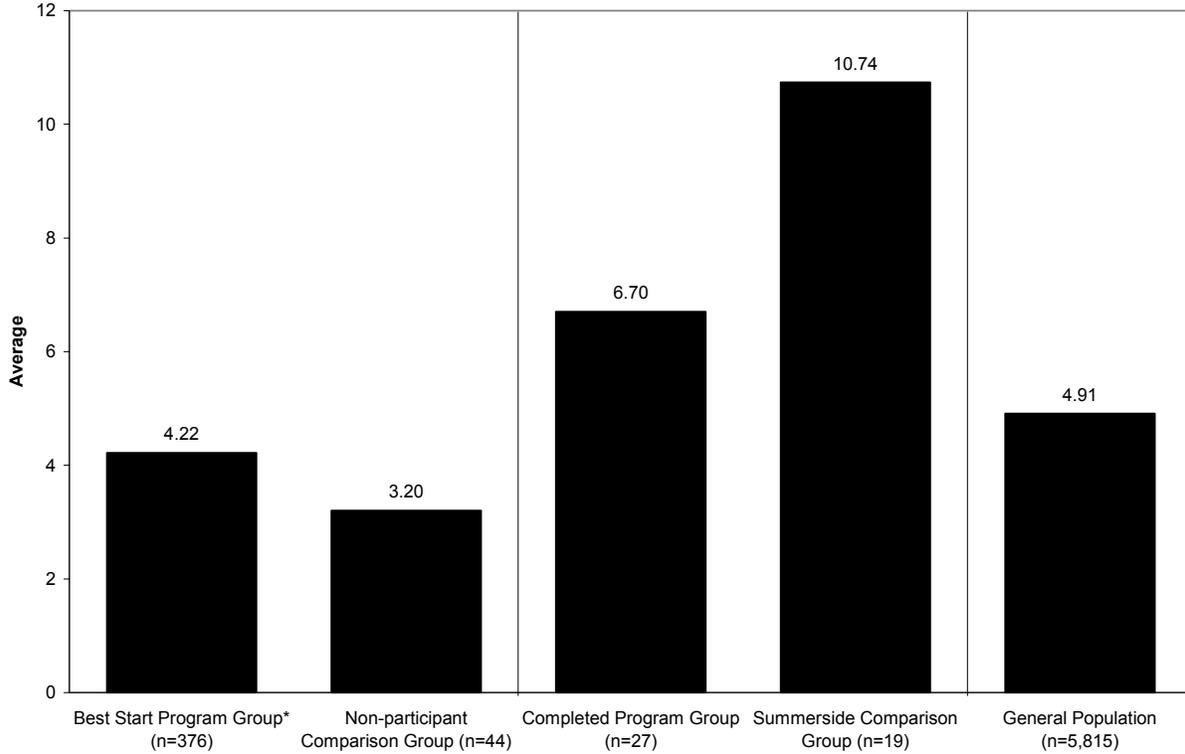
Source of data: Prince Edward Island Health

Child's age ranges from 0 to 6 for the Best Start Program Group, the Completed Program Group, the Summerside Comparison Group, and the General Population. Child's age ranges from 0 to 3 for the Non-participant Comparison Group. Since the number of medical contacts tends to be higher in the first three years of life, the average number of contacts reported for the Non-participant Comparison Group may be slightly inflated.

* Includes all cases that had an open file during the period December 1, 2001 to December 31, 2004.

The most common reason for emergency room visits for all study groups was respiratory ailments, followed by nervous system/sense organ complaints (see Appendix A, Table A-10). As would be expected, the least common reason for emergency room visits was for routine checks of health status. Comparable data were not available for the General Population.

12.3   Hospitalization

Figure 12.2 presents the average number of hospitalizations for each study group and the General Population for children who were hospitalized during the study period. The overall pattern of findings is similar to that obtained with emergency room visits, and indicates that the Best Start Program Group had a slightly higher average number of hospitalizations (1.6) than the Non-participant Comparison Group (1.4). However, the average number of hospitalizations for the Completed Program Group and the Summerside Comparison Group was the same (2.0). Average number of hospitalizations in the General Population (1.6) was the same as the Best Start Program Group, slightly higher than the Non-participant Comparison Group, and slightly lower than both the Completed Program Group (2.0) and the Summerside Comparison Group (2.0).

119

Figure 12.2
Average Number of Hospitalizations per Child

Best Start Program Group* (n=141): 1.60
Non-participant Comparison Group (n=11): 1.36
Completed Program Group (n=16): 2.00
Summerside Comparison Group (n=10): 2.00
General Population (n=2,027): 1.60

Source of data: Prince Edward Island Health
Child's age ranges from 0 to 6 for the Best Start Program Group, the Completed Program Group, the Summerside Comparison Group, and the General Population. Child's age ranges from 0 to 3 for the Non-participant Comparison Group. Since the number of medical contacts tends to be higher in the first three years of life, the average number of contacts reported for the Non-participant Comparison Group may be slightly inflated.
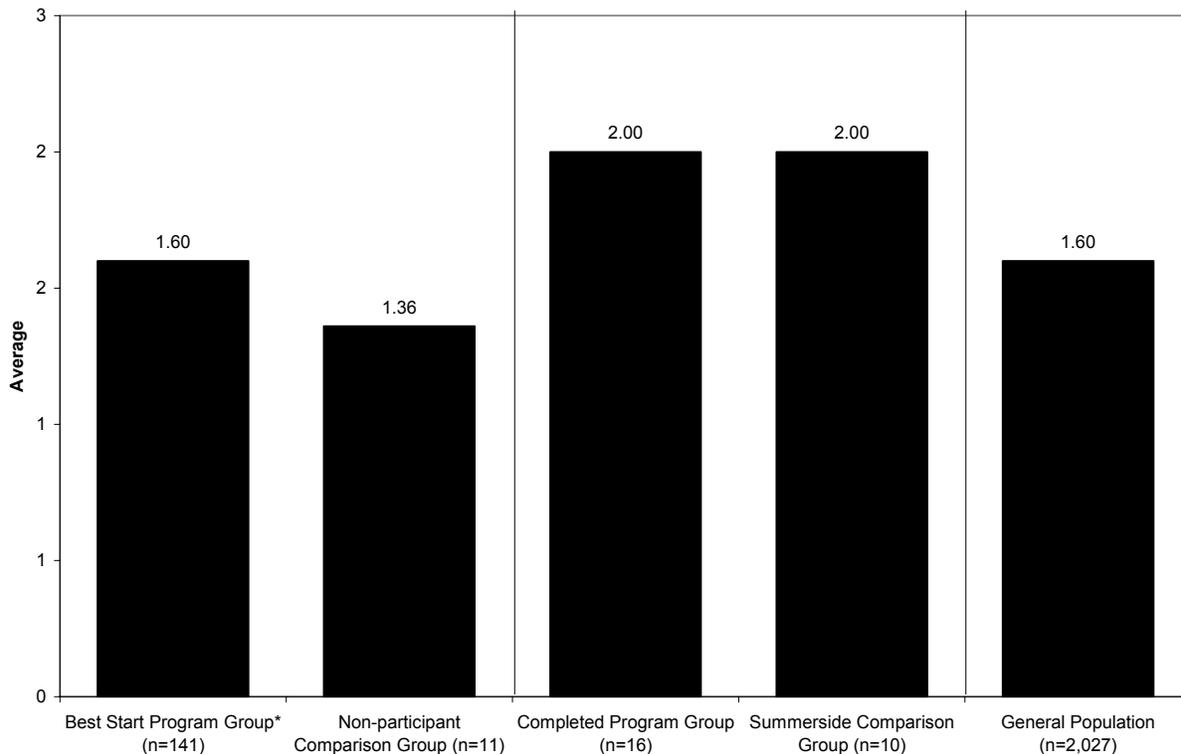* Includes all cases that had an open file during the period December 1, 2001 to December 31, 2004.

Similar to findings with regard to emergency room visits, the most common reason for hospitalization in all study groups was respiratory ailments, followed by digestive or nervous system/sense organ complaints (see Appendix A, Table A-11). Least common reasons for hospitalization were routine health status checks and unintentional injuries. Comparable data were not available for the General Population.

12.4   Family Physician Visits

The average number of visits to a family physician in the four study groups and the General Population for children who had at least one visit is presented in Figure 12.3. The average for the Best Start Program Group and the Non-participant Comparison Group were virtually the same (11.4 compared to 11.3). The Completed Program Group had a lower average number of family physician visits (18.0) than the Summerside Comparison Group (20.4). The average number of family physician visits for the General Population (13.1) was higher than the Best Start Program Group and the Non-participant Comparison Group, but lower than the Completed Program Group and the Summerside Comparison Group.

120

Figure 12.3
Average Number of Family Physician Visits per Child

Source of data: Prince Edward Island Health

Child's age ranges from 0 to 6 for the Best Start Program Group, the Completed Program Group, the Summerside Comparison Group, and the General Population. Child's age ranges from 0 to 3 for the Non-participant Comparison Group. Since the number of medical contacts tends to be higher in the first three years of life, the average number of contacts reported for the Non-participant Comparison Group may be slightly inflated.
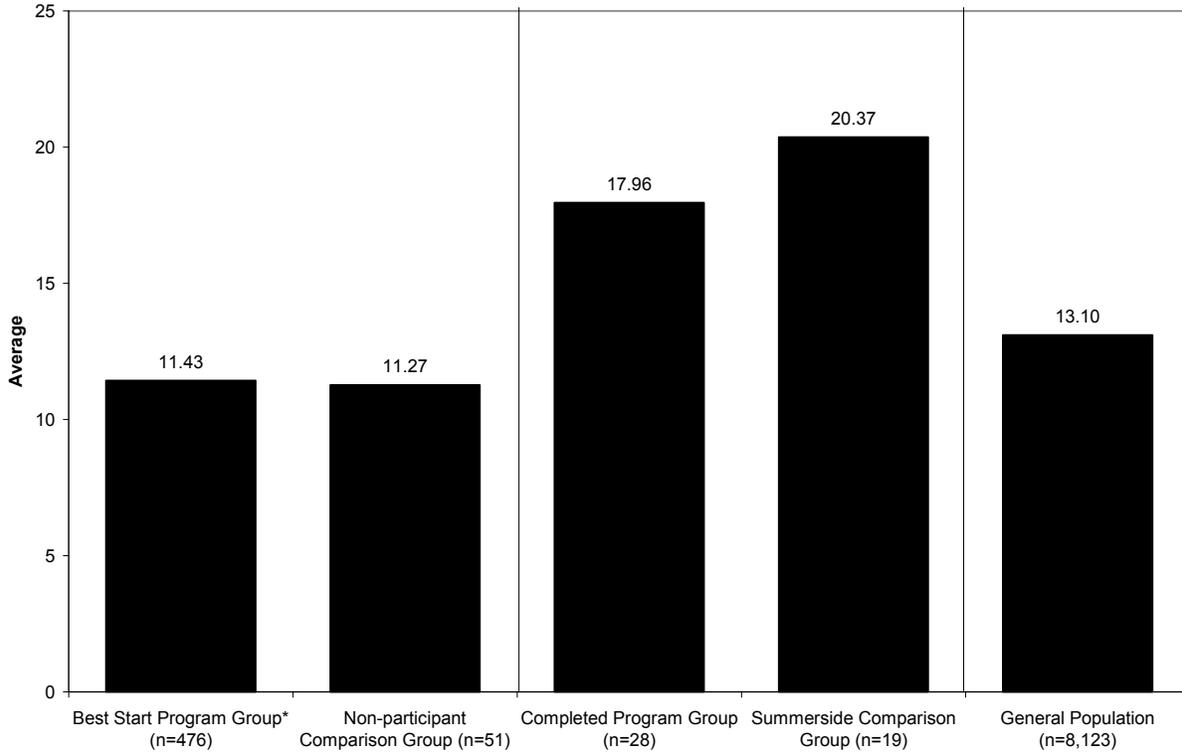
* Includes all cases that had an open file during the period December 1, 2001 to December 31, 2004.

Reasons for family physician visits are presented in Appendix A, Table A-12. The most common reason for the Best Start Program Group, the Completed Program Group, and the Non-participant Comparison Group was routine health status checks indicating proactive health promotion. The most common reason for the Summerside Comparison Group was respiratory ailments. The least common reason for family physician visits in all groups was for unintentional injuries. Comparable data were not available for the General Population.

12.5   Specialist Visits

Figure 12.4 presents the average number of visits to specialists for the four study groups and the General Population for children who had at least one such visit. The Best Start Program Group had a slightly higher average number of specialist visits (7.1) than the Non-participant Comparison Group (6.3). The Completed Program Group had a slightly lower average number of specialist visits than the Summerside Comparison Group (9.3 compared to 10.2). The General Population had a higher average number of specialist visits (7.5) than the Best Start Program Group and the Non-participant Comparison Group, and a lower average number of visits than the Completed Program Group and the Summerside Comparison Group.

Figure 12.4
Average Number of Specialist Visits per Child

Source of data: Prince Edward Island Health

Child's age ranges from 0 to 6 for the Best Start Program Group, the Completed Program Group, the Summerside Comparison Group, and the General Population. Child's age ranges from 0 to 3 for the Non-participant Comparison Group. Since the number of medical contacts tends to be higher in the first three years of life, the average number of contacts reported for the Non-participant Comparison Group may be slightly inflated.
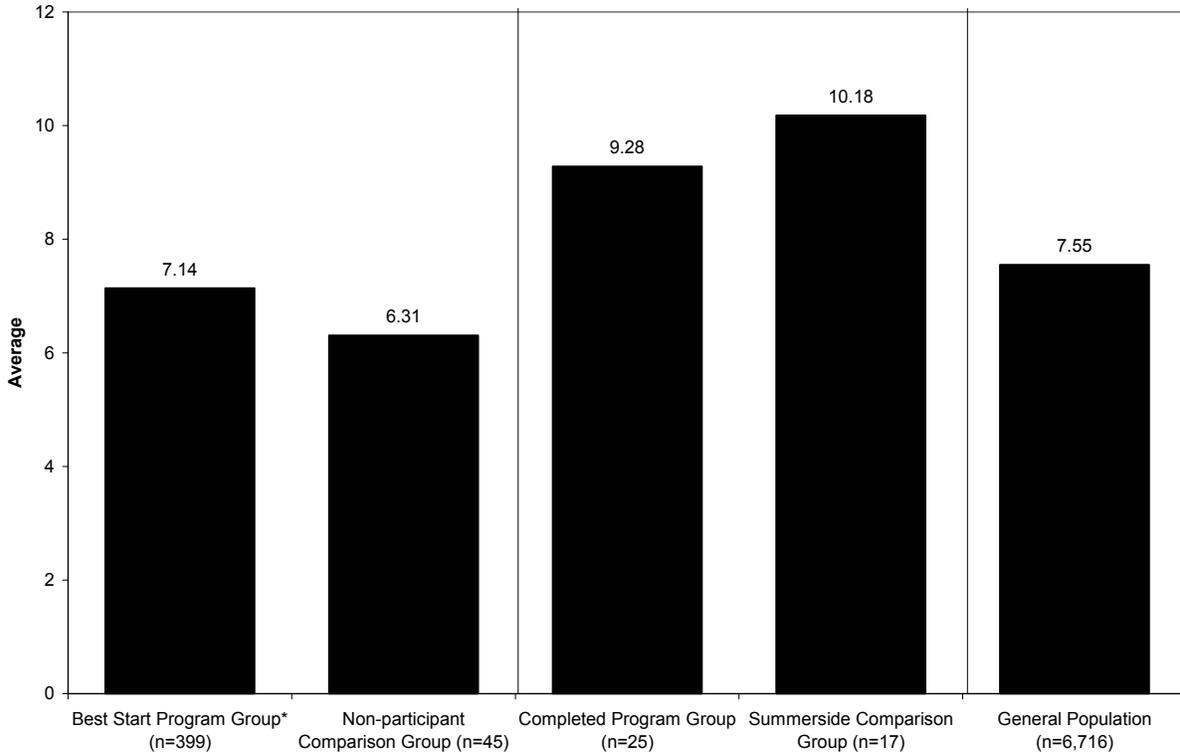
* Includes all cases that had an open file during the period December 1, 2001 to December 31, 2004.

13.0 SUMMARY AND CONCLUSIONS

The purpose of this report is to present results from the comprehensive evaluation of the province-wide Best Start program focussing on the period December 2001 to December 2004. More specifically, this report has two major objectives as follows:

1. To present a process analysis, which documents the implementation of the program, including program inputs, activities, and outputs.

2. To present an outcome analysis of the program to determine effectiveness based on the following:

    - short term outcome data from a set of standardized instruments (child 0 to 3 years old);

    - long-term outcome data from a set of standardized instruments (child 3 to 6 years old);

    - a survey of Best Start clients' experiences and views of the home visitation program;

    - involvement with Child Welfare services; and

    - utilization of health care services.

To accomplish these objectives both a process analysis and outcome evaluation study were conducted. The logic model framework for this comprehensive evaluation is presented in Chapter 3.0 of this report.

13.1 Findings: Program Inputs

Chapter 5.0 of this report documents in detail the program inputs. These findings are summarized below:

- Funding: Funding for the Best Start program has been made available from the National Crime Prevention Centre (NCPC), Justice Canada and the province of Prince Edward Island. In 2004, funding of all programs was reviewed by the provincial government and the funding for Best Start for 2004-2005 was maintained at the 2003/2004 level, which meant that the funding from the province was $155,000 less than expected. The province did, however, continue to fund the Public Health Nursing component of the program at approximately $186,000 per year. The total budget for the 2004/2005 fiscal year was $991,581 ($380,761 from NCPC; $379,000 from the provincial government; and $231,820 in-kind). Comprehensive consultations regarding the funding loss and funding options took place during August and September 2004. It was decided to reduce participation time in the program from 36 months to 18 months.

- Operational Structure: The Best Start Program has a comprehensive organizational structure involving a Provincial Advisory Committee, as well as an Operational Committee to ensure accountability and uniform high quality of service in this province-wide program. A number of policies and protocols have also been developed to facilitate the operation of the program. The involvement of the two Best Start Operational Committees and the five core groups has increased the awareness, understanding and acceptance of Best Start among other community agencies in each region. Public Health Nursing has representation on each of the core groups. The Family Resource Centres and Public Health Nursing have representation on each of the Operational Committees.

- Staff: As of November 30, 2004, there were 17 Best Start workers (14.4 FTEs). Staff turnover has been minimal. Between December 1, 2003 and November 30, 2004 one Best Start worker in Kings Region left permanently. Supervision and support for Best Start workers included formal weekly one-on-one meetings with their supervisor, informal discussion with their supervisor and Best Start Coordinator, and team meetings as required. All Best Start workers across the province meet once each month. Each of the four health regions in the province has a Public Health Nurse who is responsible for the Public Health Nursing component of the Best Start program. The designated nurse provides support and resources for the Public Health Nurses, reviews each assessment, and is responsible for collecting statistical data on the screens and assessments.

- Training: All Best Start workers have received the four-day core training, as well as one-day core content training and on-going wrap-around training. The wrap-around training, which is presented by staff of C.H.A.N.C.E.S., government and community agencies, consists of approximately 40 sessions and is typically offered every six weeks. In addition, new workers had orientation to Best Start and their respective Family Resource Centre, participated in "shadow" visits with Best Start workers, and had self-directed study in the Best Start program, core content, and community services and resources in their respective region. Best Start workers are encouraged to take the four-day training every two years.

- Partnerships: The key partners in Best Start are the provincial Ministry of Health and Social Services and the existing network of Family Resource Centres across PEI. The direct service delivery of Best Start is supported by a partnership between the provincial government system and the community-based system.

13.2 Findings: Program Activities

Chapter 6.0 of this report documents in detail the program's activities. These findings are summarized below:

- Screening and Intake: Public Health Nurses offer the Best Start program to all parents of newborns, as well as to expectant mothers who are referred prenatally province-wide. Public Health Nurses screen (using the Record Screen) all families

of newborn children within the first few visits (or prenatally), based on verbal consent of the parents.

- Assessments: If families are screened as positive and are willing to be involved with the Best Start program, a strength-based assessment (using the Family Stress Checklist (FSC)) of the family is conducted by a Public Health Nurse. The Public Health Nurse obtains written consent from the parent(s) to complete the assessment.

- Home Visits: The primary activity of the Best Start program is the home visit. Home visits provide comprehensive in-home support to families, which gives the worker an opportunity to work with families in their own environment, as well as establishing trust between the worker and family. Best Start workers provide support to families that includes the following: information and enhancement of skills in the area of child development and parenting; connections between parents and existing programs and services; focus on training and career planning for parents; and promotion of family literacy. A component of the home visit continues to focus on goal setting with families. Goal setting typically begins after the family has been involved with Best Start for three months, depending on their individual circumstances.

- Creative Outreach: The purpose of creative outreach is to create trust and demonstrate care for those families that have missed home visits. Creative outreach includes making telephone calls, networking with Public Health Nursing, and leaving letters, cards, etc. The timing for initiating creative outreach usually depends on the individual circumstances of the family and the reason for the break in service. Best Start is flexible in how it applies the HFA guideline of closing a file after three months of no contact.

- Management Information System (MIS): In March 2005, the MIS website system was transferred by CRILF to C.H.A.N.C.E.S. in Charlottetown, thus providing for a PEI-based system maintained locally.

13.3 Findings: Program Outputs

Chapter 7.0 of this report documents in detail the program outputs. These findings are summarized below:

- Client Intake: Screening of all live births is nearly universally conducted by PHNs with only approximately 10% not being screened across the province. Of the families screened positive (n=338 in 2004), over half completed the assessment (n=177 in 2004). Of the families who screened positive but did not complete the assessment, 47% said they were "not interested," and 31% indicated that they had "sufficient informal support." Further, the Record Screen data indicate that those who declined the program were significantly lower risk than those who accepted the program.

- Client Intake: In the first 20 months of the Charlottetown program (starting April 1999) it increased its caseload (i.e., total files open within the year) approximately

300% (from 33 cases to 107 cases) and continued to grow until 2003 when caseloads seemed to stabilize at approximately 200 per year, which was the maximum estimated in the Best Start proposal (March 2002). In terms of the total number of cases processed by the Best Start program, by December 31, 2004, Best Start Charlottetown had 374 files ever opened and the other Best Start sites had 168.

- Clients Completing Program: As the program in Charlottetown approached three years of operation in 2002, 14 families "completed" the program since the target child had reached three years old. In October 2004 "completing" the program was changed to the target child reaching 18 months old which significantly increased the number of cases which finished the program. By 2004, 28% (n=57) of the cases receiving services that year completed the program.

- Attrition/Dropouts: Annual attrition rates were very low for Charlottetown in the first few years of operation but grew to 24% in 2002 and then leveled off (e.g., 22% in 2004). The attrition rate for other Best Start sites in 2004 was comparable at 21%. The first year attrition rates reported in the research literature are usually about 50% per year; thus, the Best Start program has done very well in maintaining annual attrition rates just above 20% and a cumulative attrition rate in Charlottetown of 46% for the first 5.5 years of the program (see Duggan et al., 1999; Duggan et al., 2000; Duggan et al., 2004).

- Dropouts: The most common reasons for Charlottetown families leaving the program early (i.e., dropout) were "family does not want the program" (22%), "unable to contact" (19%), and "moved" (17%). For the other Best Start sites the pattern was slightly different with "moved" (25%) being the most common reason.

- Caseload: The caseload calculation for November 30, 2004 indicated that the average caseload for a full-time worker was 16.5 for Charlottetown Best Start workers and 15.1 for workers at other Best Start sites. These caseload averages would be considered appropriate especially given the fact that in both locations over 50% of the cases are Level 1 cases which are the highest risk and should have weekly visits.

- Dosage: Over a 24-month period, the clients received approximately half of the maximum dosage recommended by the Healthy Families model. This finding is consistent with the experience of other home visitation programs and strongly suggests the need to lower expectations regarding what dosage levels are desirable and possible for home visitation programs.

- Demographic Profile of Clients Served:

  Age
  Age of mother entering program – 23.8 years for Charlottetown and 24.5 years for other sites.

First Births
The rate of first births was 83% for Charlottetown and 70% for other sites.

Marital Status
For Charlottetown, 48% of mothers were single parents compared to 53% for other sites.

Age of Baby
Most families entered the program before the baby was nine weeks old (82% for Charlottetown and 76% for other sites).

- Profile of Clients on Standardized Scores: There were no significant differences between the clients served by Best Start Charlottetown and the other sites on the Risk Assessment Score; the Family Assessment Device (FAD); the Child Development Inventory (CDI); the Maternal Social Support Index (MSSI); and the Carey.

- Profile of Infants on the Carey: The program infants were significantly more "difficult" in temperament than the general population of infants. Infants involved with Best Start Charlottetown scored significantly higher than the population averages for their age group on the dimensions of rhythmicity, approachability, adaptability, and intensity. Across the other Best Start sites infants scored significantly higher than the population averages for their age group on the dimensions of rhythmicity, adaptability, and intensity. Further, the findings regarding how accurately the parents' view of the infants' temperament matched the actual behavioural profile indicates that the level of mismatch was quite high for both Best Start Charlottetown clients (ranging from 12% to 38%) and for the clients at the other Best Start sites (ranging from 13% to 32%).

- Profile of Children on the Denver: Of the 327 families whose files were ever open during the current evaluation of the Best Start Charlottetown site, there were a total of 347 children administered a total of 813 Denver Developmental Assessments. Of these children, 85 (25%) had at least one "suspect" developmental assessment. Of these 85, only 21 (6%) did not have at least one "normal" developmental assessment. Of the 159 families whose files were ever open during the current evaluation of the other Best Start sites, there were a total of 146 children administered a total of 238 Denver Development Assessments. Of these children, 39 (27%) had at least one "suspect" developmental assessment. Of these 39, only 9 (6%) did not have at least one "normal" developmental assessment.

- Overview of Baseline Scores: Over two-thirds of the Best Start families (i.e., 69% for Best Start Charlottetown and 70% for other Best Start sites) fell into a "needs improvement" category on at least one of the standardized instruments previously discussed. Further, almost a third of clients from both Best Start Charlottetown and the other Best Start sites were in the "needs improvement" category on at least two instruments.

127

13.4   Findings: Short-term Outcomes

Chapter 8.0 of the report contains an analysis of the short-term outcomes with clients during their first year of involvement with the program. The findings are summarized below. They were compared with a Non-participant Comparison Group who qualified for the program but did not take it.

- Family Assessment Device (FAD): In terms of family functioning, 33% of the Best Start Program Group fell into the improvement expected group compared to just 14% of the Non-participant Comparison Group. This finding would be consistent with the assumption that the Non-participant Comparison Group is a lower risk group than the Best Start Program Group. In terms of change over time, there was no difference between the Best Start Program Group and the Non-participant Comparison Group. Where improvement was expected, both groups improved significantly from T1 to T2 (mean change=-0.3).

- Child Development Inventory (CDI): In terms of overall change in knowledge of child development from T1 to T2, where improvement was expected the Best Start Program Group improved significantly, increasing from 76.9 to 84.8. The Non-participant Comparison Group also improved slightly but not to a level that was statistically significant. Both of the improvement not expected groups decreased slightly most likely due to regression to the mean. The findings of the CDI by each subscale (emotional, cognitive, physical, and social development) indicate, for the most part, the same pattern of change occurs as was demonstrated for the total scale scores, namely the Best Start Program Group improved significantly on all of the subscales. While the improvement expected Non-participant Comparison Group also tended to improve on all the subscales, the improvement was not statistically significant. Likewise for the improvement not expected group: for the most part, there was either no change or a slight decrease in scores from T1 to T2.

- Maternal Social Support Index (MSSI): In terms of change from T1 to T2 for the improvement expected group, there was a tendency for both the Best Start Program Group and the Non-participant Comparison Group to improve slightly, but not to a level that was statistically significant. In terms of the improvement not expected group the Best Start Program Group actually decreased significantly from T1 to T2, while the Non-Participant Comparison Group stayed virtually the same over time.

- Carey: In terms of the infants' temperament, with the exception of mood, all of the dimensions on which these infants scored above the normative average for difficult temperament further showed a significant number of the parent ratings were changed from negative mismatches to matches. Mismatches for approachability and intensity improved the most (i.e., over 50%). Adaptability mismatches improved for 25% of parents and rhythmicity improved for 36% of parents. Maturation and history could account for some of this improvement. Comparable data were not available for the Non-participant Comparison Group.

13.5   Findings: Long-term Outcomes

Chapter 9.0 of the report contains an analysis of the long-term outcomes with clients who were followed at least one year after completing the program. They were compared to the Summerside Comparison Group that was constructed in 1999.

- Parenting Sense of Competence Scale (PSOC): In terms of the parents' adjustment and satisfaction as a parent, the Completed Program Group had a higher total score at T1 than the Summerside Comparison Group (i.e., 57.2 compared to 54.8). Further, over time, the Completed Program Group increased slightly in a sense of competency while the Summerside Comparison Group decreased slightly. In terms of the subscales, the Completed Program Group increased significantly from T1 to T2 on the Efficacy subscale and decreased significantly on the Satisfaction subscale (however it should be noted that T1 score on satisfaction is very high, i.e., 44.9).

- Social Network Index (SNI):   In terms of social contact, at T1 the Completed Program Group scored higher than the Summerside Comparison Group on all three subscales. While these differences were not statistically significant (most likely due to the small group sizes), they were consistent. In terms of change over time, both groups tend to decrease, however none of the changes were statistically significant.

- Crisis in Family Systems Scale (CRISYS): The stress patterns were high (well over 50%) and similar for both the Completed Program Group and the Summerside Comparison Group. Further, they did not change significantly over time. Financial, career, and home issues were the top three reported.

- Community Contact and Referral Tracking System (CCRT): At T1 the Completed Program Group reported higher involvement with health, education, and spiritual/cultural resources than did the Summerside Comparison Group, which in contrast reported higher contacts with basic needs, childcare, family/parent support, recreation, and general support resources. Next, over time, the Completed Program Group tended to increase involvement with the different resources with the exception of family/parent support, which decreased, and recreation activities, which stayed the same from T1 to T2. In contrast, the Summerside Comparison Group tended to decrease contact over time with the exception of the use of resources in education and general support areas which increased slightly. The decrease in the contact with health resources for the Summerside Comparison Group from T1 to T2 was statistically significant. Likewise, change over time in the area of health resources was significant for this group in comparison with the Completed Program Group. The Completed Program Group also significantly increased utilization of childcare/support from T1 to T2.

- Child Behavior Checklist (CBCL): Overall the behavior profiles of the children from both groups are well within the normal range; however, the children in the Summerside Comparison Group were slightly higher in the withdrawn and somatic problems categories at T1. Both groups of children progressed towards the 50th percentile at T2.

13.6   Findings: Best Start Parent Survey

Chapter 10.0 of this report contains the findings of the parent survey with 50 clients who were in the program for 12 months or more and were currently active. The survey collected information on how much they thought the program helped them and their perception of their relationship with their home visitor. The findings are summarized below.

- Perception of How Much Program Helped: Well over three-quarters indicated the program helped "very much" with most child-related areas. Respondents were also quite positive regarding other issues. Well over three-quarters indicated the program helped "very much" with most child-related areas. Respondents were also quite positive regarding other issues. Approximately half of the clients felt the program provided very much help with their ability to cope with stress (50%) or with problem solving (55%). However, a smaller proportion of clients rated the program as helping "very much" when it came to their personal relationships with other people (44%) or with their partner/spouse (40%). If the ratings are combined to include "some" then over 90% of the respondents felt that the program provided help with their ability to cope with stress and solve problems. Further, over 85% of respondents indicated that the program helped with their relationships with a partner or with other people either "very much" or to "some extent." Very few respondents reported that the program had helped "a little" or "not at all" in any area.

    Challenges in which the clients felt the program was a great deal of help to them were in the following areas: dealing with baby's difficult temperament or nature (82%); building a social or support network (73%); and not feeling good about yourself (68%). Further, responses indicated the significant impact of the Home Visitation program in playing a supportive role, and in providing effective parenting strategies. Lack of transportation, unemployment, and not having enough money for basic needs were the only areas where a few clients (13% to 23%) were not helped by the program.

- Visitor-family Relationship Inventory: The items in which at least 80% of respondents indicated they strongly agreed with the statement describing their home visitor were:

    − the home visitor "explains the information she gives me" (92%);
    − the home visitor "motivates me to protect my baby's/child's health" (84%);
    − the home visitor "is sensitive to how I feel" (84%);
    − "My work with my home visitor helps the healthy development of my baby/child" (83.7%);
    − the home visitor "cares about what happens to me" (80%);
    − the home visitor "respect my family's ways of doing things" (80%); and
    − "My work with my home visitor helps my own development as a mother/parent" (80%).

13.7 Findings: Child Welfare Involvement

Chapter 11.0 of this report contains an analysis of the involvement with Child Welfare for Best Start clients overall, a Non-participant Comparison Group, a Comparable Best Start Program Group, as well as for the Summerside Comparison Group and a Completed Program Group.

- Profile of Best Start Clients:

Investigation
Overall, over 20% of the Best Start Program Group (n=100) had at least one report of a Child Welfare investigation up to December 2004. The total number of investigations was 190, which amounts to almost 2 investigations per case. Of these investigations 66% were founded and just over half of these were in need of protection (i.e., 35% in need of protection and 31% no need of protection). Almost a third of the cases (30%) were identified as unfounded. It should be noted that prior to 2001 potential clients for the Best Start program who had open Child Welfare files were not eligible for the program (Elnitsky et al., 2003, p. 36). Since 2001 the program has been working much more closely with Child Welfare services.

Timing of Investigation
Overall, over 18% of the total investigations occurred before program involvement and over 60% occurred during the client's involvement with the program. Just over 20% occurred after the client left the program. The rate of cases unfounded was slightly lower during program involvement (i.e., 28%) than before program involvement or after program (both over 32%).

Reason for Investigation
The most commonly reported reason for investigation was domestic violence with over 24%. Neglect was second with approximately 17%. Failure to adequately supervise/protect was the third most frequent reason and accounted for approximately 14% of the investigations followed by addiction, which was the reason given for 12% of the investigations.

Action Taken
The most common action was voluntary service agreements, which were used in over 76% of the cases. Next, volunteer care agreements were used in approximately 7% of the cases. The next most common actions were apprehension (5%) and supervision orders (5%). In total there were only 14 cases of the original 66 cases found in need of protection where action other than voluntary service agreements were taken. These formal actions resulted in 10 placements, six of which were in foster care and four in a relative non-placement. This amounts to a rate of 15% of the cases requiring a change of residence of the child which is comparable to the 13% identified in the national survey by Trocmé et al. (2005).

- Best Start Program/Non-participant Comparison Group:

Investigation
Overall, 16% of the Best Start Program Group (n=53) had at least one report of a Child Welfare investigation between December 2001 and December 2004 compared to just over 12% (n=6) for the Non-participant Comparison Group. There was a much higher rate of unfounded investigations (i.e., 67%) for the Non-participant Comparison Group in comparison with the Best Start Program Group (i.e., 29%). Further, in contrast, the percentage of investigations resulting in founded – in need of protection was much higher for the Best Start Program Group (i.e., 40%) than the Non-participant Comparison Group (0%). This pattern of findings would suggest that the reporting of children in need of protection was more accurate for the Best Start Program Group than for the Non-participant Comparison Group. Further it would be consistent with the fact that the Best Start Program Group was higher risk pre-program and was expected to have much higher rates of Child Welfare involvement.

Reason for Investigation
For the Best Start Program Group, the most common reason for investigation was domestic violence with over 27%. Neglect was second with just over 18%, followed by addiction with approximately 14% and failure to adequately supervise with just over 12%. The pattern was somewhat similar for the Non-participant Comparison Group; however, the reasons for investigation for the Best Start Program Group were very broad, covering the gamut of potential child maltreatment, while the pattern for the Non-participant Comparison Group included only four reasons. These four reasons seem to be relatively external in comparison with the reasons given for the Best Start cases. It appears that the intimate involvement that Best Start workers have with families provides them with more detailed information on the family's issues and thus contributes to more accurate reporting.

Action Taken
The Non-participant Comparison Group had no investigations which resulted in founded – in need of protection therefore no further action was taken. In comparison, the Best Start Program Group had 31 investigations founded – in need of protection that resulted in further action. The most common action was voluntary service agreements which were used in 68% of the cases. The other more formal actions were equally distributed at 7% each. The actions resulted in three placements in foster care and two relative non-placements. In summary, there were five placements for 35 investigations founded – in need of protection resulting in a rate of just over 14% of the cases requiring a change of residency of the child which again is comparable to the 13% identified in the national survey by Trocmé et al. (2005).

- Completed Program/Summerside Comparison Group

  Investigation
  Overall, 31% of the Completed Program Group (n=8) had at least one report of a Child Welfare investigation up to December 2004 compared to 58% (n=11) for the Summerside Comparison Group. Further, there was an average of 1.5 investigations per case for the Summerside Comparison Group compared to 2.3 for the Completed Program Group. The unfounded rates were slightly higher for the Completed Program Group (i.e., 33%) compared to the Summerside Comparison Group (25%).

  Reason for Investigation
  For the Completed Program Group, the most common reason for investigation was addictions with over 33%. Physical abuse and neglect were the next two highest categories at 22% each. Domestic violence was the reason in 11% of the investigations for this group. In contrast, for the Summerside Comparison Group, the highest category was domestic violence with over 31%. Neglect and failure to adequately supervise/protect were the second highest categories at approximately 19% each. Physical abuse was the reason given for approximately 13% of the cases.

  Action Taken
  Due to the small number of cases in this analysis, only a few placements were made (and cannot reliably be reported). The majority of cases for both groups resulted in voluntary service agreements.

13.8 Findings: Health Care Utilization

Chapter 12.0 of this report contains an analysis of the utilization of health care resources for the Best Start Program Group, a Non-participant Comparison Group, the Completed Program Group, the Summerside Comparison Group, and the General Population. The findings are summarized below:

- Health Profiles at Birth: The Best Start mothers and infants were at higher risk in most categories where data were available than the General Population. The Best Start mothers were younger, with an average age of 23.5 years, compared to 28.7 years old for the General Population. Even though they were significantly younger, the Best Start Program Group mothers had a greater average number of previous pregnancies than the General Population (1.1 compared to 0.7).

  Risk behaviours during pregnancy were quite prevalent among the Best Start Program Group mothers. For example, almost one-half of the Best Start Program Group mothers smoked during pregnancy (46%) compared to less than one-quarter of mothers in the General Population (22%). Although no comparable data were available for the General Population, a substantial proportion of Best Start Program Group mothers drank alcohol (26%) or used street drugs (11%) during their pregnancy. Slightly more mothers in the Best Start Program Group breastfed their infants than in the General Population (65% compared to 62%).

In terms of the infants, the home visitation infants also exhibited higher levels of risk than the General Population infants (6% of the Best Start Program Group infants were less than or equal to 2500 grams at birth compared to 4% for the General Population).

- Emergency Department Visits: The average number of emergency room visits for the Best Start Program Group was higher than for the Non-participant Comparison Group (4.2 compared to 3.2) but the Best Start Program Group was closer to the General Population (4.9). The Summerside Comparison Group had a substantially higher average number of emergency room visits (10.7) than the Completed Program Group (6.7).

- Hospitalizations: The overall pattern of hospitalizations is similar to that obtained with emergency room visits, and indicates that the Best Start Program Group had a slightly higher average number of hospitalizations (1.6), the same as the General Population, than the Non-participant Comparison Group (1.4). However, the average number of hospitalizations for the Completed Program Group and the Summerside Comparison Group was the same (2.0). There may be less variation regarding hospitalizations due to the fact that the doctor not the parent would make the decision.

- Family Physician Visits: The average for the Best Start Program Group and the Non-participant Comparison Group were virtually the same (11.4 compared to 11.3). The Completed Program Group had a lower average number of family physician visits (18.0) than the Summerside Comparison Group (20.4). The average number of family physician visits for the General Population (13.1) was higher than the Best Start Program Group and the Non-participant Comparison Group, but lower than the Completed Program Group and the Summerside Comparison Group.

  The most common reason for family physician visits for the Best Start Program Group, the Completed Program Group, and the Non-participant Comparison Group was routine health status checks. The most common reason for the Summerside Comparison Group was respiratory ailments.

- Specialist Visits: The Best Start Program Group had a slightly higher average number of specialist visits (7.1) than the Non-participant Comparison Group (6.3). The Completed Program Group had a slightly lower average number of specialist visits than the Summerside Comparison Group (9.3 compared to 10.2). The General Population had a slightly higher average number of specialist visits (7.5) than the Best Start Program Group and the Non-participant Comparison Group, and a lower average number of visits than the Completed Program Group and the Summerside Comparison Group.

13.9 Conclusions: Process Analysis

The first major objective of this study was to conduct a process analysis, which documents the implementation of the program, including program inputs, activities, and

outputs. The key question for the process analysis is whether the program was implemented as proposed.

Despite an initial delay in the implementation of the province-wide Best Start program due to an extension of negotiations concerning funding, and the subsequent freeze in funding that necessitated limiting the program to families with children under 18 months old, the program has made considerable progress and has been successfully implemented. All components of the original Healthy Families model are being used and there is considerable consistency between the Charlottetown program and the other Best Start sites both in terms of the services offered and the demographic profiles and risk levels of the clients being served. Finally, the projected number of clients to be served has been reached.

Successful implementation was due to a number of circumstances including the following:

- The Best Start program adopted a well developed model for home visitation, i.e., Healthy Families, and tailored the program for families at risk in PEI. However, we do not know how limiting the program to families with children under 18 months old may reduce the effectiveness of the program.

- The Public Health Nurses in PEI have been highly committed to the Best Start program and helped to achieve universal screening and consistent assessments of families.

- All of the Family Resource Centres have recognized the importance of this primary prevention program and have entered into partnership with Best Start in implementing the program province-wide.

- The Best Start program has attracted support not only from the host agencies but also from both government and community agencies. Further, the secondment of the Provincial Coordinator of Best Start from Queens Health Region has helped to fast track the implementation.

- Capacity building in the community has occurred on many levels, e.g., the Public Health Nurses who do the risk screening and assessments; the Best Start supervisors and workers; and the families who benefit from the support and resources of the Best Start program.

- The development and implementation of an on-line MIS, as well as the development of the Best Start Core Content, have provided the supervisors and Best Start workers with new skills and an understanding of how useful these skills are.

All of those involved in the implementation of the province-wide Best Start program should feel proud that so much has been accomplished in such a limited time frame. Overall, the implementation of the Best Start program province-wide serves as a model for how community-based, multi-partnership programs that target and serve at-risk families should be conducted.

13.10 Conclusions: Outcomes

The second major objective of this study was to conduct an outcome analysis of the Best Start Program to determine effectiveness based on:

- short-term outcomes;
- long-term outcomes;
- a satisfaction survey of clients;
- involvement with Child Welfare; and
- utilization of health care services.

Short-term Outcomes

Short-term outcome analysis measured the improvement of the clients in comparison with a low risk Non-participant Comparison Group during their first year of involvement with the program using a number of standardized instruments.

Improvements for the Best Start clients were noted in two of the four areas, i.e., knowledge of child development (CDI) and the accurate perception by the parents of the child's temperament (Carey). In the other two areas, i.e., family functioning and social support, there was no difference at post-test.

It is important to note we were limited to just two test periods at a 12-month interval since this was the maximum time for follow up with the Non-participant Comparison Group. It is possible, particularly with family functioning, that it takes longer than 12 months to achieve significant positive change. Previous research (Gomes et al., 2005) suggests that family functioning (measured by the FAD) increased the most in the second year of the Edmonton Home Visitation Program. Interestingly, knowledge of child development in the Edmonton study increased the most in the first year.

Long-term Outcomes

Long-term outcome analysis measured how Best Start clients who completed the program at 36 months compared to the Summerside Comparison Group. Further, both of these groups were also tested 12 months later to identify whether completed clients declined after leaving the program.

Generally, the findings regarding long-term outcomes were positive although not statistically significant – most likely due to the small number of cases in the two groups analyzed. Parents' adjustment (PSOC) at Time 1 was higher for the Completed Program Group as predicted and over time it increased slightly overall. Social contact (SNI) was also higher for the Completed Program Group at Time 1. Both groups, however, decreased slightly over time. In terms of use of community resources (CCRT), at Time 1 the Completed Program Group reported higher involvement with health, education and spiritual/cultural resources whereas the Summerside Comparison Group reported higher contact regarding basic needs, child care, family/parent support and recreation. Over time the Completed Program Group increased the use of resources, especially child care, while

the Summerside Comparison Group tended to decrease contact with the exception of education.

Stress in the family was high for both groups, especially in the areas of financial, career, and home issues. Further, these did not decrease significantly over time. Finally, the behaviour profiles of the children from the two groups were both "normal" although the Summerside Comparison Group had slightly higher scores on the "withdrawn" and "somatic problems" scales at Time 1.

Satisfaction of Clients

The satisfaction of clients was measured by the parent survey, which was administered to a sample of active clients in the program more than 12 months.

Overall, the respondents were very positive about the program indicating that it helped them "very much," particularly in dealing with the baby's difficult temperament. Most clients (approximately 90%) felt that the program helped "somewhat" or "very much" with their ability to deal with stress and problem solving. Further, they highly valued the relationship with the home visitors.

Involvement with Child Welfare

Since the beginning of the first pilot study (Elnitsky et al., 2003), the overall involvement of Best Start clients with Child Welfare increased significantly from 5% at November 2001 to 20% at December 2004. This increase is most likely due to the following two factors: (1) the larger number of older children in the current study; and (2) the program focus has evolved and the program is now working much more closely with Child Welfare and it is less likely than before that families would be excluded from the program because of Child Welfare involvement. The increased involvement in comparison with the earlier study is both an expected and positive finding since it indicates that the program workers are working closely with Child Welfare in accurately identifying children in need of protection and monitoring these cases over time even though a formal policy and protocol have not been adopted. Interestingly, the percentage of Best Start clients involved with Child Welfare is comparable to the Edmonton programs, which reported 31% involvement for a similar time period (Gomes et al., 2005).

Further, in terms of overall involvement with Child Welfare, it should be noted that of the initial 190 investigations only 66 cases were founded – in need of protection and those resulted in only 14 placements, 3 of which were the result of an apprehension. Domestic violence is now the primary reason for investigations and it appears that the Best Start workers' training regarding domestic violence is helping them to identify risk situations.

Two comparative analyses were conducted to identify the effect of the Best Start program on the frequency and nature of intervention by Child Welfare services. First, a comparative analysis was conducted using a sub-sample of Best Start clients whose children were born during the same time period as the Non-participant Comparison Group. The Non-participant Comparison Group, however, was at significantly lower risk group at

pre-program than the Best Start clients making comparison between the groups difficult to interpret.

The findings for the comparison between the Best Start Program Group and the Non-participant Comparison Group clearly indicate that as expected given the risk level of this group there were higher rates of reporting of child maltreatment. More importantly, the findings also indicated a greater range and detail regarding the reports and higher levels of validation after completion of the investigation.

The effect of the Best Start Program on Child Welfare involvement was also tested by comparing the Completed Program Group with the Summerside Comparison Group. These groups had children between four to six years old and both had high risk profiles at the pre-program stage with the Completed Program Group being somewhat higher risk than the Summerside Comparison Group. Overall, the differences between the two groups at December 2004 were very significant. The Summerside Comparison Group involvement with Child Welfare was almost double the Completed Program Group's involvement (58% compared to 31%). Rates of founded – in need of protection were comparable (31% and 33%); however, voluntary service agreements were the most common action for both groups.

Utilization of Health Care

At the time of the birth of the child, the Best Start Program Group mothers were clearly at higher risk than the General Population. The mothers were younger, had more previous pregnancies, tended to smoke and drink during the pregnancy, over 10% used street drugs, and they gave birth to smaller babies. Despite the fact that these mothers and infants were at higher risk at birth, their utilization of health care, including emergency room visits, hospitalizations, visits to family physicians for health promotion, and average number of specialist visits were very similar to the General Population – moreso than any of the other study groups.

Since there is no direct measure of appropriate utilization of health care research, we assume the General Population utilization is "average." This being the case, the Non-participant Comparison Group appears to underutilize services. In contrast, the Completed Program Group and the Summerside Comparison Group appear to have much higher health care utilization.

The best test of the effectiveness of the Best Start Program in achieving appropriate utilization of health care resources is the comparison between the Completed Program Group and the Summerside Comparison Group – both "high" users as noted above. First, it is interesting to note that the Summerside Comparison Group generally used more health services than the Completed Program Group – with the exception of hospitalization where a referring physician would make the decision about utilization. The biggest difference was the use of emergency room service, which may indicate an inappropriate use of services.

13.11 Overall Conclusions

<u>Objective #1: Process Analysis</u>

The process analysis contained in this report clearly documents the successful implementation of the province-wide Best Start program.

<u>Objective #2: Outcome Analysis</u>

The outcome analysis contained in this report leads us to the following conclusions regarding the outcomes/impacts of the Best Start program listed in the Logic Model (see Table 3.1).

<u>Short-term Outcomes</u>

- The program was successful at increasing the parents' knowledge of child development and increasing the accurate perception of child temperament.

- The program was not successful at increasing family functioning or parents' use of social support within the limited timeframe.

<u>Long-term Outcomes</u>

- The program was successful at increasing: (1) long-term satisfaction and competency of the parent; (2) parents' ability to build positive long-term social support systems; and (3) parents' ability to deal with stress.

- There is no evidence that the children of those who completed the program were better adjusted than the comparison group children since both groups were normal.

- The program was successful at increasing the accuracy of reporting and early identification of child maltreatment. To a lesser extent, the program also appears to be successful at decreasing the need for more intrusive intervention by Child Welfare services.

- The program was successful at increasing the appropriate use of health care services.

Overall, the above findings and conclusions are very encouraging. While some of the differences between those who received the program and those who did not were not statistically significant, the pattern of findings over the various measures of outcomes were consistent particularly Child Welfare and health care utilization. Those who received the program performed better than those who did not.

The magnitude of these findings should be viewed within the context of the calls in prior research that we "should maintain modest realistic expectation for home visiting services" (Gomby et al., 1999, p. 23). Compared to other evaluations, the Best Start

program has performed well. Further, it should be noted that the findings of this evaluation are quite consistent with the previous research. Gomby (2003), in a review of meta-analyses focusing on the effectiveness about home visitation concluded:

> Effects are most consistent for outcomes related to parenting, including the prevention of child abuse and neglect (depending upon how child maltreatment is measured). Home visiting programs do not generate consistent benefits in child development or in improving the course of mothers' lives. Families in which children have obvious risk factors (e.g., they are biologically at-risk, developmentally delayed, or they already have behavior problems) appear to benefit most. Some studies also suggest that the highest-risk mothers (e.g., low income teen mothers; mothers with poor coping skills, low IQs, and mental health problems) may benefit most, but probably only if the program offers services tailored to address the needs of the mothers. (Gomby, 2003, p. 31.)

13.12 Recommendations

There are several recommendations that follow from the findings and conclusions of this evaluation. They are listed below.

Best Start Program

1. As suggested by the research literature as well as the findings of this evaluation, the program should focus on fewer, more specific outcomes/goals that they wish to accomplish. The program's activities then should be matched to these outcomes (see Landsverk, 2002, p. 51; Gomby, 2003).

2. The significant presence of domestic violence as a reason for referral to Child Welfare suggests that the workers are well trained in the recognition of it. However, strategies which go beyond the Best Start program should be developed to ensure that domestic violence is properly dealt with. While it is a good sign that it is being identified, the scope and impact of domestic violence goes beyond the mandate of a volunteer primary prevention program such as Best Start.

3. The program should review the standardized instruments currently being used to collect data from clients to ensure that they are useful to the program and measure obtainable outcomes. The results of this study clearly support the continued use of the Child Development Inventory (CDI) and the Carey Infant Temperament Questionnaire.

4. The program should continue to expand the use of goal plans and these should be clearly documented on the MIS.

5. Based on the findings that those clients who completed the 36-month program were very high risk and continued to experience high levels of stress, as well as the fact that the positive results of this report are based on the 36-month program, if at all possible, the program should consider returning to a 36-month program.

6. The program should develop a strategy for conducting exit interviews with those who leave the program prior to completion.

Research

1. High attrition rates have been a significant issue for all Healthy Families programs yet little is known about why families drop out and what their needs are. Research should be conducted to find out more about these families, possibly through detailed exit interviews.

2. Future evaluations of Healthy Families programs should develop strategies for including measures of individual family goal attainment as part of the outcome analysis, as well as direct observational measures of child-parent relationships.

3. Future research should assess longer-term outcomes for children such as school readiness, involvement with Child Welfare, and delinquent behaviour.

REFERENCES

Aos, S., Phipps, P., Barnoski, R., & Lieb R. (2001). *The Comparative Costs and Benefits of Programs to Reduce Crime*. Olympia, WA: Washington State Institute for Public Policy.

Behrman, R.E. (Ed.). (1999). *The Future of Children*. Los Altos, CA: The David and Lucille Packard Foundation.

Campbell, D.T., & Stanley, J.C. (1963). *Experimental and Quasi-experimental Designs for Research*. Chicago, IL: Rand McNally & Company.

Child Protection Act, R.S.P.E.I. 1988, c. C-5.1.

Cook, T.D., & Campbell, D.T. (1979). *Quasi-experimentation: Design & Analysis Issues for Field Settings*. Boston, MA: Houghton Mifflin Company.

Daro, D.A., & Harding, K.A. (1999). Healthy Families America: Using Research to Enhance Practice. In R.E. Behrman (ed.), *The Future of Children*. Los Altos, CA: The David and Lucille Packard Foundation.

Donaldson, S.I., & Christie, C.A. (2004). *The 2004 Claremont Debate: Lipsey vs. Scriven: Determining Causality in Program Evaluation & Applied Research: Should Experimental Evidence be the Gold Standard?* Available at www.cgu.edu/pages/465.asp. Last accessed November 23, 2005.

Duggan, A., McFarlane, E., Fuddy, L., Burrell, L., Higman, S.M., Windham, A., & Sia, C. (2004). Randomized Trial of a Statewide Home Visiting Program: Impact in Preventing Child Abuse and Neglect. *Child Abuse & Neglect, 28*, 597-622.

Duggan, A.K., McFarlane, E.C., Windham, A.M., Rohde, C.A., Salkever, D.S., Fuddy, L., Rosenberg, L.A., Buchbinder, S.G., & Sia, C.C.J. (1999). Evaluation of Hawaii's Healthy Start Program. *The Future of Children. Home Visiting: Recent Program Evaluations, 9(1)*, 66-90.

Duggan, A., Windham, A., McFarlane, E., Fuddy, L., Rohde, C., Buchbinder, S., & Sia, C. (2000). Hawaii's Healthy Start Program of Home Visiting for At-Risk Families: Evaluation of Family Identification, Family Engagement, and Service Delivery. *Pediatrics, 105(1)*, 250-259.

Eckenrode, J.J., Ganzel, B., Henderson, C.R., Jr., Smith, E., Olds, D.L., Powers, J., Cole, R.E., Kitzman, H.J., & Sidora, K., (2000). Preventing Child Abuse and Neglect with a Program of Nurse Home Visitation: The Limiting Effects of Domestic Violence. *Journal of the American Medical Association, 284*, 1385-1391.

Elnitsky, S., Hornick, J.P., Bertrand, L.D., Boyes, M.C., Wagner, H., Hanson, P.G., & Bradford, B. (2003). *Evaluation of Healthy Families Programs in Selected Sites Across Canada.* Ottawa: National Crime Prevention Centre.

Gomby, D. (1999). Understanding Evaluations of Home Visiting Programs. In R.E. Behrman (ed.), *The Future of Children*. Los Altos, CA: The David and Lucille Packard Foundation.

Gomby, D. (2003). *Building School Readiness through Home Visitation*. Available at www.ccfc.ca.gov/schoolready.htm. Last accessed November 23, 2005.

Gomes, J.T., Hornick, J.P., Wagner, H.A., Boyes, M.C., & Billings, A.L. (2005). *Evaluation of Capital Region Home Visitation Network: Outcome Evaluation Report, December 1, 2001 – January 31, 2004.* Edmonton: Early Childhood Development Initiative (ECDI) Evaluation Committee.

Hawaii Family Stress Center. (1991). *The Healthy Start Training Manual*. Honolulu, HI: Hawaii Family Stress Centre.

Hawaii Family Stress Center. (1995). *The Healthy Families America Family Support Worker Training Materials*. Honolulu, HI: Hawaii Family Stress Centre.

Health Families America. (1998). *Healthy Families America Training Manual*. National Committee to Prevent Child Abuse.

Hopkins, W.G. (2002). *A New View of Statistics: Regression to the Mean*. Available at www.sportsci.org/resource/stats/regmean.html. Last accessed November 23, 2005.

Karoly, L.A., Greenwood, P.W., Everingham, S.S., Houbé, J., Kilburn, M.R., Rydell, C.P., Sanders, M., & Chiese, J. (1998). *Investing in Our Children: What We Know and Don't Know about the Costs and Benefits of Early Childhood Interventions*. Santa Monica, CA: Rand Corporation.

Kerr, R. (2005). *The Best Start Home Visiting Program Pilot Project: An Analysis of Performance, Cost and Benefits*. Report prepared for the National Crime Prevention Centre, Ottawa, Ontario.

Landsverk, J., Carrilio, T., Connelly, C.D., Ganger, W.C., Slymen, D.J., Newton, R.R., Leslie, L., Jones, C. (2002). *Healthy Families San Diego Clinical Trial Technical Report*. San Diego, CA: Child and Adolescent Services Research Center.

Penston, J. (2004). *Is the Randomized Trial the Gold Standard for Research?* Available at www.childrens-mercy.org/stats/weblog2004/GoldStandard.asp. Last accessed November 23, 2005.

Sherman, L. (1997). *What Works, What Doesn't, What's Promising*. Report prepared for the United States Attorney General.

Statistics Canada. (2001). *Census Families in Private Households by Family Structure and Presence of Children, by Provinces and Territories (2001 Census)*. Ottawa, ON: Statistics Canada.

Taylor-Powell, E. (2001). *Logic Model Workshop*. Madison, WI: University of Wisconsin.

Treasury Board of Canada Secretariat. (1998). *Program Evaluation Methods: Measurement and Attribution of Program Results*. Ottawa, ON: Treasury Board of Canada Secretariat.

Trochim, W.M.K. (2002). *Regression to the Mean*. Available at www.socialresearchmethods.net/kb/regrmean.htm. Last accessed November 25, 2005.

Trocmé, N., Fallon, B., MacLaurin, B., Daciuk, J., Felstiner, C., Black, T., Tonmyr, L., Blackstock, S., Barter, K., Turcotte, D., & Cloutier, R. (2005). *Canadian Incidence Study of Reported Child Abuse and Neglect – 2003 Major Findings*. Ottawa, ON: Minister of Public Works and Government Services Canada.

Windham, A., Rosenberg, L.A., Fuddy, L., McFarlane, E., Sia, C., & Duggan, A.K. (2004). Risk of Mother-reported Child Physical and Psychological Abuse in the First 3 Years of Life. *Child Abuse & Neglect*, *28*, 645-667.

APPENDIX A

SUPPORTING TABLES

Table A-1
Number of Mothers Endorsing Each Record Screen Item for Individuals
Accepting and Declining Participation in Best Start Program

Screen Item	Accepted Program[1] (n=503)		Declined Program (n=524)	
	n	%	n	%
Marital status: single, separated, divorced	400	79.5	416	79.4
Partner unemployed	148	29.4*	106	20.2*
Inadequate income	208	41.4*	102	19.5*
Unstable housing	109	21.7*	51	9.7*
No phone	31	6.2	20	3.8
Education under 12 years	193	38.4*	166	31.7*
Inadequate emergency contacts	41	8.2*	6	1.1*
History of substance abuse	117	23.3*	55	10.5*
Late prenatal, none or poor compliance	70	13.9*	48	9.2*
History of abortions	37	7.4	43	8.2
History of psychiatric care	94	18.7	78	14.9
Abortion unsuccessfully sought or attempted	16	3.2	8	1.5
Relinquishment for adoption sought or attempted	32	6.4*	17	3.2*
Marital or family problems	157	31.2*	72	13.7*
History of or current depression	161	32.0*	107	20.4*
History of domestic violence	119	23.7*	80	15.3*
History of involvement with criminal justice system	83	16.5*	55	10.5*

Source of data: Record Screens from May 1999 to December 2004.

* Denotes significant difference between groups at p <. 05.

[1] Missing data=39 (7.2%), total n=542. These most likely are cases that were screened positive but assessed negatively.

Table A-2
Number of Mothers Endorsing Each Record Screen Item for Individuals Declining
Participation in Best Start Program and the Non-participant Comparison Group

Screen Item	Declined Program (n=524)		Non-participant Comparison Group (n=50)	
	n	%	n	%
Marital status: single, separated, divorced	416	79.4	39	78.0
Partner unemployed	106	20.2	8	16.0
Inadequate income	102	19.5	10	20.0
Unstable housing	51	9.7	6	12.0
No phone	20	3.8	1	2.0
Education under 12 years	166	31.7	15	30.0
Inadequate emergency contacts	6	1.1	1	2.0
History of substance abuse	55	10.5	4	8.0
Late prenatal, none or poor compliance	48	9.2	5	10.0
History of abortions	43	8.2	4	8.0
History of psychiatric care	78	14.9	10	20.0
Abortion unsuccessfully sought or attempted	8	1.5	1	2.0
Relinquishment for adoption sought or attempted	17	3.2	2	4.0
Marital or family problems	72	13.7	8	16.0
History of or current depression	107	20.4	10	20.0
History of domestic violence	80	15.3	6	12.0
History of involvement with criminal justice system	55	10.5	2	4.0

Source of data: Record Screens from May 1999 to December 2004.

* Denotes significant difference between groups at p <. 05.

Table A-3
Number of Mothers Endorsing Each Record Screen Item for Comparable
Best Start Program Group and Non-participant Comparison Group

Screen Item	Comparable Best Start Program Group (n=276)		Non-participant Comparison Group (n=50)	
	n	%	n	%
Marital status: single, separated, divorced	219	79.3	39	78.0
Partner unemployed	83	30.1*	8	16.0*
Inadequate income	115	41.7*	10	20.0*
Unstable housing	66	23.9	6	12.0
No phone	16	5.8	1	2.0
Education under 12 years	105	38.0	15	30.0
Inadequate emergency contacts	21	7.6	1	2.0
History of substance abuse	67	24.3*	4	8.0*
Late prenatal, none or poor compliance	31	11.2	5	10.0
History of abortions	18	6.5	4	8.0
History of psychiatric care	51	18.5	10	20.0
Abortion unsuccessfully sought or attempted	7	2.5	1	2.0
Relinquishment for adoption sought or attempted	8	2.9	2	4.0
Marital or family problems	86	31.2*	8	16.0*
History of or current depression	89	32.2	10	20.0
History of domestic violence	56	20.3	6	12.0
History of involvement with criminal justice system	46	16.7*	2	4.0*

Source of data: Record Screens.
* Denotes significant difference between groups at $p < .05$.
[1] Includes clients who completed the Record Screen between October 23, 2002 and November 21, 2004 which matches time
period for birth of target child with Non-participant Comparison Group. Missing data=55 (16.6%), total n=331.

Table A-4
Number of Mothers Endorsing Each Record Screen Item for Individuals who
Accepted the Program and Completed or Did Not Complete the Parent Survey[1]

Screen Item	Completed Survey[2] (n=31)		Did Not Complete Survey (n=436)	
	n	%	n	%
Marital status: single, separated, divorced	23	74.2	351	80.5
Partner unemployed	8	25.8	131	30.0
Inadequate income	11	35.5	184	42.2
Unstable housing	6	19.4	96	22.0
No phone	0	0.0	27	6.2
Education under 12 years	14	45.2*	163	37.4*
Inadequate emergency contacts	0	0.0	40	9.2
History of substance abuse	3	9.7	105	24.1
Late prenatal, none or poor compliance	7	22.6	57	13.1
History of abortions	1	3.2	32	7.3
History of psychiatric care	3	9.7	85	19.5
Abortion unsuccessfully sought or attempted	3	9.7	13	3.0
Relinquishment for adoption sought or attempted	1	3.2	30	6.9
Marital or family problems	6	19.4	137	31.4
History of or current depression	6	19.4	142	32.6
History of domestic violence	6	19.4	106	24.3
History of involvement with criminal justice system	3	9.7	74	17.0

Source of data: Record Screens from May 1999 to December 2004.
* Denotes significant difference between groups at $p < .05$.
[1] Individuals whose name was missing from the Record Screen had to be omitted from this analysis.
[2] Missing data=19 (38%), total n=50.

Table A-5
Number of Mothers Endorsing Each Record Screen Item for
Summerside Comparison Group and Completed Program Group

Screen Item	Summerside Comparison Group[1] (n=19)		Completed Program Group (n=26)	
	n	%	n	%
Marital status: single, separated, divorced	19	100.0*	18	69.2*
Partner unemployed	6	31.6	9	34.6
Inadequate income	5	26.3	5	19.2
Unstable housing	3	15.8	2	7.7
No phone	0	0.0	2	7.7
Education under 12 years	6	31.6	9	34.6
Inadequate emergency contacts	5	26.3	1	3.8
History of substance abuse	1	5.3	6	23.1
Late prenatal, none or poor compliance	4	21.1	3	11.5
History of abortions	1	5.3	1	3.8
History of psychiatric care	2	10.5	7	26.9
Abortion unsuccessfully sought or attempted	0	0.0	0	0.0
Relinquishment for adoption sought or attempted	2	10.5	2	7.7
Marital or family problems	5	26.3	6	23.1
History of or current depression	3	15.8*	12	46.2*
History of domestic violence	1	5.3	5	19.2
History of involvement with criminal justice system	0	0.0*	7	26.9*

Source of data: Record Screens from May 1999 to December 2004.

* Denotes significant difference between groups at $p < .05$.

[1] Missing data=1 (3.7%).

Table A-6
Mean Scores at Time 1 on the Family Assessment Measure
for Cases in the Non-Dropout and Dropout Client Groups

Client Group	FAD Score[1]
Non-Dropouts (n=204)	1.8
Dropouts[2] (n=70)	1.7

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Scores on the FAD range from 1 to 4 with higher scores indicating lower levels of family functioning.

[2] Dropouts are defined as cases that entered the program prior to April 1, 2004 and only had Time 1 data.

Table A-7
Mean Scores at Time 1 on the Child Development Inventory for
Cases in the Non-Dropout and Dropout Client Groups[1]

Client Group	Emotional Development Subscale	Cognitive Development Subscale	Physical Development Subscale	Social Development Subscale	Total Scale
Non-Dropouts (n=277)	93.0	93.7	89.6	85.8	89.7
Dropouts[2] (n=127)	92.0	93.2	91.6	84.8	89.2

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Scores on the Child Development Inventory refer to the percentage of correct items and range from 0 to 100.

[2] Dropouts are defined as cases that entered the program prior to April 1, 2004 and only had Time 1 data.

Table A-8
Mean Scores at Time 1 on the Maternal Social Support Index
for Cases in the Non-Dropout and Dropout Client Groups

Client Group	Support Around the Home Subscale[1]	Support Outside the Home Subscale[2]	Community Contact Subscale[3]	Total Scale[4]
Non-Dropouts (n=285)	5.5	14.9	2.4	22.8
Dropouts[5] (n=119)	5.4	14.3	2.3	22.1

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[1] Support Around the Home range: 0-10.

[2] Support Outside the Home range: 0-21.

[3] Community Contact range: 0-8.

[4] Total Scale range: 0-39.

[5] Dropouts are defined as cases that entered the program prior to April 1, 2004 and only had Time 1 data.

Table A-9
Mean Scores at Time 1 and Time 2 and Mean Change Scores across Testings on the Child Behaviour
Checklist for Cases in the Summerside Comparison Group and the Completed Program Group

Study Group	Anxious/Depressed			Withdrawn			Sleep Problems			Somatic Problems		
	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2
Summerside Comparison Group (n=19)	4.9	5.0	0.1	4.0	3.2	-0.8	2.3	2.3	0.0	2.6	1.8	-0.8
Completed Program Group (n=26)	4.4[+]	3.0[+]	-1.4	1.1	1.5	0.4	2.2	1.7	-0.5	1.2	1.2	0.0

Study Group	Aggressive Behaviour			Destructive Behaviour			Other Problems		
	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2	Mean at T1	Mean at T2	Mean Change from T1 to T2
Summerside Comparison Group (n=19)	8.5	6.6	-1.9	3.5	2.7	-0.8	7.7	6.6	-1.1
Completed Program Group (n=26)	6.6[+]	5.0[+]	-1.6	3.3	2.4	-0.9	5.0	5.4	0.4

Source of data: On-line MIS from December 1, 2001 to November 30, 2004.

[+] Denotes a significant difference between Time 1 and Time 2 at $p < .05$.

Table A-10
Reason for Emergency Department Visits by Study Group

Reason	Best Start Program Group[1]		Completed Program Group		Non-participant Comparison Group		Summerside Comparison Group	
	n	%	n	%	n	%	n	%
Respiratory	664	41.9	153	43.6	55	38.2	152	38.3
Digestive	109	6.9	14	4.0	10	6.9	23	5.8
Health Status	19	1.2	5	1.4	1	0.7	2	0.5
Infectious/Parasitic	115	7.3	16	4.6	17	11.8	33	8.3
Symptoms	182	11.5	19	5.4	20	13.9	28	7.1
Unintentional Injury	83	5.2	28	8.0	7	4.9	26	6.5
Nervous System/Sense Organ	223	14.1	59	16.8	22	15.3	61	15.4
Other[2]	190	12.0	57	16.2	12	8.3	72	18.1
Total	1,585	100.0	351	100.0	144	100.0	397	100.0

Source of data: Prince Edward Island Health.

[1] Includes all cases that had an open file during the period December 1, 2001 to December 31, 2004.

[2] Other includes: perinatal conditions; skin/tissue disease; circulatory system diseases; misadventure/affects; undetermined injuries; endocrine/metabolic disease; blood/blood forming; mental disorders; genitourinary disease; and musculoskeletal disease.

Table A-11
Reason for Hospitalizations by Study Group

Reason	Best Start Program Group[1]		Completed Program Group		Non-participant Comparison Group		Summerside Comparison Group	
	n	%	n	%	n	%	n	%
Respiratory	83	36.7	10	31.3	5	33.3	13	65.0
Digestive	34	15.0	6	18.8	1	6.7	3	15.0
Health Status	4	1.8	0	0.0	0	0.0	0	0.0
Infectious/Parasitic	26	11.5	4	12.5	2	13.3	0	0.0
Symptoms	29	12.8	6	18.8	1	6.7	1	5.0
Unintentional Injury	0	0.0	1	3.1	0	0.0	0	0.0
Nervous System/Sense Organ	23	10.2	4	12.5	3	20.0	1	5.0
Other[2]	27	11.9	1	3.1	3	20.0	2	10.0
Total	226	100.0	32	100.0	15	100.0	20	100.0

Source of data: Prince Edward Island Health.
[1] Includes all cases that had an open file during the period December 1, 2001 to December 31, 2004.
[2] Other includes: perinatal conditions; skin/tissue disease; circulatory system diseases; misadventure/affects; undetermined injuries; endocrine/metabolic disease; blood/blood forming; mental disorders; genitourinary disease; and musculoskeletal disease.

Table A-12
Reason for Family Physician Visits by Study Group

Reason	Best Start Program Group[1]		Completed Program Group		Non-participant Comparison Group		Summerside Comparison Group	
	n	%	n	%	n	%	n	%
Respiratory	1,428	26.2	129	25.6	141	24.5	135	34.9
Digestive	219	4.0	17	3.4	18	3.1	9	2.3
Health Status	1,637	30.1	133	26.4	204	35.5	81	20.8
Infectious/Parasitic	243	4.5	27	5.4	36	6.3	25	6.5
Symptoms	614	11.3	56	11.1	55	9.6	26	6.7
Unintentional Injury	29	0.5	4	0.8	1	0.2	4	1.0
Nervous System/Sense Organ	749	13.8	91	18.1	68	11.8	69	17.8
Other[2]	524	9.6	46	9.1	52	9.0	38	9.8
Total	5,443	100.0	503	100.0	575	100.0	387	100.0

Source of data: Prince Edward Island Health.
[1] Includes all cases that had an open file during the period December 1, 2001 to December 31, 2004.
[2] Other includes: perinatal conditions; skin/tissue disease; circulatory system diseases; misadventure/affects; undetermined injuries; endocrine/metabolic disease; blood/blood forming; mental disorders; genitourinary disease; and musculoskeletal disease.