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Evaluation of Jamaica's PATH Program: Methodology Report

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Dan Levy
Jim Ohls

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Ministry of Labour and Social Security   Mathematica Policy Research, Inc.
14 National Heroes Circle   600 Maryland Ave., SW, Suite 550
Kingston 4 Jamaica   Washington, DC 20024-2512
West Indies   Telephone: (202) 484-9220
                                                  Facsimile: (202) 863-1763

Project Officer: Project Director:
   Colette Roberts-Risden   Jim Ohls

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I. INTRODUCTION

In response to concerns about poverty in Jamaica, the Government of Jamaica (GOJ) has developed the Programme Advancement Through Health and Education (PATH) program as a means to restructure several important social safety net programs, improve the targeting of program services, and link individuals to the assistance most appropriate for them. To assess the expected impacts of such program reforms, the government of Jamaica is conducting a rigorous, comprehensive evaluation of the PATH program. More specifically, the evaluation is structured around a quasi-experimental design that will use household survey data to determine whether PATH is reaching its intended population, alleviating poverty, and increasing the human capital of poor households as measured by school outcomes and health practices.

This methodology report describes the plans that have been developed for the evaluation. The remainder of this introductory chapter describes the background for the safety net reforms, including Jamaica's overall social and economic context, the nature of poverty on the island, and Jamaica's social safety net (Section A). The chapter also describes the Jamaican government's efforts to reform the safety net, including the salient features of the PATH program, and other relevant social programs (Section B). The chapter concludes with an overview of evaluation objectives (Section C).

The rest of the methodology report is organized as follows: Chapter II presents our plans for conducting descriptive analyses based on data from PATH's Management Information System (MIS) and from a baseline survey of PATH households. Chapter III presents the evaluation design selected to estimate the impacts of PATH on the outcomes of interest. Finally, Chapter IV presents our plans for conducting the qualitative analysis.

A. BACKGROUND TO THE SOCIAL SAFETY NET REFORM

1. Economic and Social Context

During most of the 1990s, the Jamaican economy experienced low or negative growth. In 1996, a crisis in the financial sector exacerbated matters when the solvency of several insurance companies and other domestic financial institutions emerged as an issue. While Jamaica has made remarkable progress in some social areas,[1] the upward trend is likely to be temporary unless the economy improves. In fact, the recent tapering off in the decline of poverty in 1997–1999 may indicate a reversal.

In addition, focus group research conducted in Jamaica by the World Bank in 1999 found "significant decreases in the well being of the poorest individuals over the last ten years" and, in rural areas, "an emerging category of severely poor households, often including the elderly" (The World Bank 2001b, p. 6).

In light of this situation, the challenge for the Jamaican government is to prevent a reversal in the significant declines in poverty witnessed in the 1990s and to ensure that the poor are adequately protected.

2. Poverty in Jamaica

A major force behind the development of PATH is the nature of poverty in Jamaica and its relationship to education and health care. For instance, poverty is concentrated:

- *Among the young and the old,* with almost half of the poor younger than 18 years of age and another 10 percent over age 65 (Blank 2001)

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[1]For example, the poverty rate in Jamaica decreased from 28 percent in 1990 to 17 percent in 1999 (The World Bank 2000). The forces that worked to lower poverty during a period of sustained recession remain poorly understood and in need of rigorous investigation. Some of the explanations for this paradox are the effects of migration, remittances from abroad, and informal sector opportunities.

- ***In rural areas,*** with nearly 80 percent of the poor living in rural areas and less than 10 percent living in the Kingston metropolitan area (The World Bank 1999)

- ***Among female-headed households,*** with 66 percent of poor households headed by women, although women head only 44 percent of all households (Blank 2001)

- ***Among larger families,*** with 40 percent of poor families claiming six or more members (The World Bank 2001c)

In addition, Jamaica's comparatively favorable social indicators mask a significant lack of access to education, especially for the poor. Although poor children are typically enrolled in school, they often do not attend regularly. Poor families tend to attribute poor attendance to "money problems." Indeed, the World Bank found that a lack of money has prevented parents from sending their children to school and providing them with food, clothing, and shelter. For instance:

> *"Education was widely associated with high well being and so it seemed reasonable to infer that schools are regarded as important because of the personal benefits that are seen to accrue from investing in education. In this vein, the costs of buying into education service were seen as a major impediment to social advancement by the poorer groups" (The World Bank 2001b, p. 43).*

Because of low school attendance, particularly in schools in inner cities and rural areas, approximately 30 percent of sixth grade students are functionally illiterate. This is especially a problem because it perpetuates poverty in that enrollment in early childhood, upper secondary, and tertiary education is strongly related to employment and economic status, as illustrated by comments of a woman in Millbank (The World Bank 2001b).

> *"Because I sent my children to school, they supported me when older and this allowed me to become better off." Macey Byfield, Millbank, Jamaica*

Poverty is related not only to education but also to health care quality and access. For instance, immunization rates for infants up to 11 months of age fell from 93 percent in 1993 to 85 percent in 1999 (The World Bank 2001c). While children are often immunized by the time

they start primary school, they are not necessarily immunized early enough. Inadequate prenatal care has also been a serious problem. In addition, poverty poses a barrier to health care, especially in rural areas. For instance, public health centers in rural areas, though not easily accessible to many communities, are perceived by the poor as very important because private clinics charge far higher consultation fees (The World Bank 2001b). Both preventive and ameliorative programs are necessary for improving the health of youth, pregnant and lactating women, the elderly, and the disabled. For youth, preventive programs, which ought to begin during the early childhood development stage, should lay the foundation for better developmental outcomes and lead to high returns later in life. For adults, regular checkups should improve individuals' health and chronic illness monitoring and reduce emergency visits.

3. The Social Safety Net

Before development of the PATH program, the Jamaican government financed 45 safety net programs through 12 ministries (National Poverty Eradication Strategy 1998), including three income support programs—the Food Stamp Program, the Poor Relief Program, and the Public Assistance Program—four school-based programs, five labor market programs, two subsidized drug programs, and an indigent housing program, among others. However, the effectiveness of these programs was sometimes low. For instance, the World Bank recently found that the majority of these programs do not adequately serve the poor (The World Bank 2001c). Even though some of the programs target the poor, they fail to reach a significant share of the affected population. In addition, other programs are not designed to target the poor at all (as is the case for most of the labor market programs). For example, approximately 263,000 persons registered to receive food stamps in 1998. However, just under 30 percent of the households receiving food stamps fell into the poorest quintile (Blank 2001). In addition, a high proportion of the poor appears to be unaware of the range of available benefits or otherwise unable to afford the direct

and indirect costs of obtaining such benefits (e.g., transportation costs). Finally, government programs' low benefit levels offer less than adequate support, which, given the cost of obtaining benefits, probably deter eligible individuals from even applying.

B. SAFETY NET REFORM

To address the gaps in its safety net, the GOJ formed an interinstitutional task force led by the Planning Institute of Jamaica (PIOJ) to develop a "policy matrix" for program reform. The reform effort is intended to knit the safety net into a fiscally sound and more efficient system of social assistance for the poor and vulnerable and, in particular, for the extremely poor. To this end, the reform effort is focusing on four major areas:

1. Developing and implementing a universal targeting system based on a proxy means test. The main safety net programs will use the system to increase transparency in the selection of beneficiaries, reduce the administrative costs associated with each program performing its own assessment of eligibility, and improve targeting.

2. Consolidating major cash and in-kind transfer programs into the PATH program to ensure:
   - A meaningful level of benefits
   - A cost-efficient and accessible delivery system
   - Access to benefits linked to desirable behavioral changes that promote an investment in the human capital development of the poor, especially children
   - Effective targeting of social assistance to special groups.

3. Improving the targeting, efficiency, and impact of various school-based and other safety net programs.

4. Developing systems to monitor and evaluate the programs by building on existing instruments such as the annual Survey of Living Conditions (SLC).

The Planning Institute of Jamaica (PIOJ) and the Ministry of Labour and Social Security (MLSS) are responsible for advancing the reform program and developing its universal targeting mechanism. To ensure that reforms achieve their goals, PIOJ and MLSS are coordinating their efforts with the agencies that administer the various safety net programs.

1. PATH

PATH will replace three major income support programs that provide cash or in-kind assistance: the Food Stamp Program, the Poor Relief Program, and the Public Assistance Program. Reflecting a new approach that combines social assistance with the accumulation of human capital, PATH is intended to fight poverty in the present through monetary transfers and to reduce poverty in the future by encouraging poor households to invest in the health and education of their children. PATH identifies poor households through a scoring formula that ranks households from poorest to best off. Households below a predetermined cut-off point are eligible for program benefits.

PATH is organized around two components:

1. *Child assistance grants* provide health and education grants for eligible poor children through age 17 years.[2] The receipt of health grants is conditioned on children through age 6 (not enrolled in school) visiting a health clinic (every two months during the first year and twice a year thereafter). The receipt of education grants is conditioned on regular school attendance (at least 85 percent of school sessions) by poor children age 6 through 17 years. The average monthly benefit per child receiving a health or education grant is US$6 in the first year of program implementation, US$7.50 in the second year, and US$9 during and after the third year.[3] The grants are intended to delay or offset the direct costs of keeping poor children healthy.

2. *Social assistance grants to adults* provide grants to poor pregnant or lactating mothers, elderly poor (over age 65 years), and poor disabled and destitute adults under age 65 years. The receipt of benefits is conditioned on adults making regular health clinic visits. The average monthly benefit per person is the same as the benefit in the child assistance grants.

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[2]Each child in the household is eligible to receive only one type of grant: health (if aged 0 to 6 years) or education (if aged 7 to 17 years).

[3]As a reference, the minimum wage in Jamaica for general workers is currently about US$130 per month (Planning Institute of Jamaica). A household receives a monthly grant amount based on the number of eligible members. Hence, a household with two children eligible for the health grant, two children eligible for the education grant, and one eligible adult, would receive US$30 per month in the first year (i.e., five eligible persons multiplied by US$6).

PATH is scheduled to be implemented over four years. It was initially implemented in the pilot province of St. Catherine in 2001 and began island-wide implementation in 2002. The Ministry of Labour and Social Security (MLSS) and its 13 parish offices at the local level are in charge of executing the program. The director of the Social Protection and Development (SPAD) Division in the MLSS is responsible for ensuring that PATH implementation proceeds according to program objectives and design.

2. Other Social Safety Net Programs

Through the use of the scoring formula that determines eligibility for PATH, the safety net reform effort is also intended to improve the targeting, efficiency, and impact of the following programs:

- *School Feeding Program (SFP).* The SFP, administered by the Ministry of Education, Youth and Culture (MOEYC), is a subsidized school lunch program that provides a hot lunch and a snack for children in basic, infant, primary, all-age, and junior high and comprehensive schools. The objective of the program is to ensure that children receive basic nutritional meals in order to encourage regular school attendance and support developmental activities in the schools. The government and the family share the cost of the lunch.

- *Secondary School Fee Assistance Program (SSFA).* Also implemented by MOEYC, the SSFA is designed to help needy secondary school students pay school fees. The government introduced the program in 1994–1995 as part of a formal cost-sharing scheme that requires parents to contribute to the cost of secondary education. Parents must apply for assistance, and the school principal or guidance counselor determines the amount of subsidy, if any, based on an assessment of need.

- *Social and Economic Support Program (SESP).* The SESP, administered by the Office of the Prime Minister, was created in the early 1990s with the primary objective of cushioning the effects of structural adjustment policies on young people, the poor, and the elderly in inner-city communities and rural areas. The program provides funds to communities for infrastructure and training projects.

- *Lift-Up Jamaica.* Designed as a short-term response to a critical social situation, Lift-Up Jamaica is a community-based, 18-month public works program targeted to at-risk youth. Funded from the profits of public sector enterprises, the program focuses on the rehabilitation and upgrading of the social and physical infrastructure. The Office of the Prime Minister has institutional responsibility for the program, and the Urban Development Company is the implementing agency.

C. OBJECTIVES OF THE SOCIAL SAFETY NET REFORM EVALUATION

A primary objective of Jamaica's safety net reform is to monitor and evaluate the government's various programs in order to assess progress in achieving reform goals. Thus, the proposed evaluation is intended to provide regular feedback on the effectiveness of the reform during its implementation as well as a comprehensive review of mid-term impacts. To this end, the proposed evaluation involves the following activities:

- *Preparing* a socioeconomic profile of PATH participants
- *Describing* the safety net with regard to access to and participation in major programs
- *Assessing* whether PATH has reached its intended population, alleviated poverty, and increased the human capital of poor households

These evaluation activities involve quantitative and qualitative analysis as follows:

- ***Program impacts will be measured through the use of a rigorous evaluation design.*** Mathematica Policy Research (MPR) and the Government of Jamaica (GOJ) recognize that impact estimates of PATH must be credible and defensible. A large and significant evaluation such as this one would be undermined by a design whose impact estimates generate more questions than answers. MPR and GOJ have therefore jointly developed a quasi-experimental design in which the comparison group is as similar as possible to program participants except with regard to program participation.

- ***The qualitative analysis***, or implementation analysis, will involve focus groups and interviews with program participants, various staff administrators, and providers. By collecting data on the experience of all groups involved in the reforms, we expect to develop a richer evaluation than would be possible with only survey or administrative data.

Findings from the two sets of analyses will inform the Jamaican government's efforts to assist as many of the poor as possible while using GOJ's limited resources as efficiently as possible. We also expect that the results from the evaluation will guide future efforts to develop and implement reform programs in Jamaica.

II. DESCRIPTIVE ANALYSIS

As part of the evaluation, we will conduct two broad types of statistical analyses. One is an *impact analysis* that will examine the effects of PATH on important variables such as school attendance and health care utilization among young children. The analysis will be based on a comparison group design described in detail in Chapter III.

In addition to the impact analysis, we will conduct—as described in Section A of the present chapter—*descriptive analyses* of PATH participants by examining important personal and household characteristics, socioeconomic characteristics, consumption levels, and living standards.

Much of the descriptive analysis will draw on data from a baseline survey of a random sample of PATH participants conducted during early 2003.[4] The survey's reliance on a random sample means that the results can provide important information with which to examine the key issue of targeting—the degree to which program benefits are directed to the intended population. In addition, by comparing the survey data on PATH participants with similar data from a random sample of the overall Jamaican population (Survey of Living Conditions 2002), we can examine how PATH participants fit into the overall population distribution with respect to important variables.

A second type of descriptive analysis will be based on data from the Management Information System (MIS) maintained by the MLSS on PATH applicants. The data include

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[4]For expositional purposes, we use the term "sample of PATH participants" when referring to this sample throughout this chapter. However, not all members of this sample were enrolled in PATH at the time the survey was conducted. In fact, the sample was drawn from the list of households who had applied to PATH and were deemed eligible to enroll in PATH as of November 15, 2002.

information supplied by PATH applicant households on their application forms for the program, together with information such as records of payment of benefits and records of compliance with program requirements. The MIS data provide a larger sample size with which to examine PATH program participants and include administrative data on program participation. However, in many areas, the range of information available in the MIS data is more limited than the range of information available from the baseline survey data. Section B describes tabulations of the PATH program data from the MIS.

Table II.1 summarizes the different data sources that we will use to perform the evaluation's statistical analyses. The MIS data, described previously, will be collected throughout the evaluation period and will be used in several reports. We will draw on information from the 2002 Survey of Living Conditions, in order to compare PATH participants to the overall Jamaican population. The sources include two baseline surveys specifically designed for the evaluation. We will use the first one, already described, to characterize PATH participants and assess program targeting. When estimating program impacts, we will draw on the second survey to account for baseline differences between the participant and comparison groups. Finally, we will use the follow-up survey to obtain the outcomes for which we will estimate program impacts.

A. DESCRIPTIVE ANALYSIS BASED ON THE FIRST BASELINE SURVEY

To help understand and interpret the effects of PATH on poor households in Jamaica, it is important to examine carefully the characteristics of the individuals and households that participate in the program. In addition, for a number of purposes, it will be of interest to compare the characteristics PATH participants to those of the Jamaican population in general. Of particular interest are issues related to targeting--how completely the program serves the

TABLE II.1

DATA SOURCES TO BE USED IN THE EVALUATION
(Sample, Time Period, and Main Purpose of Each Data Source)

Data Source	Sample	Time Period	Main Purpose	Evaluation Report(s)
MIS data	All applicants to PATH as of May 2003 (Sample size: 196,628 households as of May 2003)	To be collected at several points during the evaluation	Select participant and comparison groups for impact analysis, describe PATH participants at baseline, create survey nonresponse weights, compare participants with eligible nonparticipants	-Methodology Report -Baseline Report -Interim Report -Final Report
Survey of Living Conditions 2002	Representative sample of Jamaican households (Sample size: about 7,000 households)	Conducted during the summer of 2002	Compare PATH participants to the overall Jamaican population.	-Baseline Report
Baseline Survey I	Nationally representative sample of eligible PATH households as of November 15, 2002 (Sample size (target): 1,200 households)	Conducted in February–May 2003	Describe PATH participants as they enter the program and assess PATH targeting	-Baseline Report
Baseline Survey II	Participant group and comparison group (Sample size (target): 2,500 participant households and 2,500 comparison households)	To be conducted in September–October 2003	Provide baseline data on both the participant and comparison groups for the impact analysis	- Interim Report - Final Report
Follow-Up Survey	Participant group and comparison group (Sample size (target): Subset of households that responded to Baseline Survey II)	To be conducted in spring 2005	Provide outcome data on both the participant and comparison groups for the impact analysis	- Final Report

population of poor households and whether nonpoor households, which may be less in need of the program's assistance, receive benefits.

In order to provide a statistical basis for examining targeting and other issues, the GOJ—in spring 2003--conducted a survey of approximately 1,200 randomly selected households that had applied to PATH and were determined eligible for the program as of November 15, 2002. We understand that the response rate was about 80 percent. Patterned after the 2002 Jamaica Survey of Living Conditions, the survey collected detailed social and economic data as well as information about participation in a broad set of social welfare programs. The survey instrument covered the following topics: health, education, the social safety net, consumption (daily expenses, food expenses, consumption expenditures, nonconsumption expenditures, housing and related expenses), assets (i.e., inventory of durable goods), the labor force, PATH, and crime and victimization. Questions in the PATH section specifically explored respondents' experiences with the PATH application process. These data on PATH households, together with additional statistical information drawn from program records and other sources, will provide the basis for a detailed examination of the characteristics of PATH participants.

1. Overall Methodology

The analysis of the first baseline survey data on the characteristics of households and individuals participating in PATH will be largely descriptive in nature and based on detailed tabulations of the data. When appropriate, the analysis may also draw from published data sources to provide some context for the findings.

For binary variables—such as percentages of participants in various other programs—the analysis will focus on percentages of the relevant populations with various characteristics. For continuous variables—such as estimated levels of consumption expenditures—we will tabulate means, medians, and frequency distributions. In addition, in parts of the analysis involving

continuous variables of particular importance, we may generate "box and whisker" plots to provide a graphic representation of the median and width of key frequency distributions. Further, for selected variables, we will compute the standard errors associated with the estimated values and present the estimates in the analysis.[5]

2.   Profile of Typical Participating Household

To provide readers with a basic overview of the characteristics of a program's participants, we will develop a profile of the "typical" participant. Such a profile can be useful for providing a context for more detailed examinations of participant characteristics for disseminating information about the program in a particularly accessible way, to the press or other media.

We will develop profiles of the PATH population by calculating the medians of a set of key variables and presenting the results in a simple table. Table II.2 shows some of the variables we plan to use to profile the PATH participant.

TABLE II.2

PROFILE OF TYPICAL PATH PARTICIPANT
(Median of Key Set of Variables)

Variable	Median
Household size	
Age of household head	
Number of children in the household	
Number of adults in the household	
Household consumption in Jamaican dollars	
Household consumption in relation to the poverty line	

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[5]As described in the next section, we will use nonresponse weights based on MIS data for calculating summary statistics based on the household surveys.

We can add other variables to the list as the GOJ sees fit. However, the point of the profile analysis is not to provide full information but rather to present an overview. We will develop more detailed information in subsequent sections of the report, as described below.

3.   Targeting: Poverty Levels of Households Receiving Benefits

Of crucial importance in assessing PATH is whether benefits are reaching the appropriate recipients. Such an assessment requires an analysis of (1) whether most poor households are being served and (2) the degree to which nonpoor households, which may not be the intended recipient group, are receiving benefits.

To examine these targeting issues, we will develop detailed tabulations of the PATH participants in the sample by poverty group, based on a variable that indicates consumption levels as a percentage of the relevant Jamaican poverty thresholds established by the GOJ. We will establish percentage intervals, such as in increments of 10 percentage points, in order to assess not only how many PATH households fall above and below the poverty line but also *the degree* to which households are in (or not in) poverty. To pursue this line of analysis further, we will assess what proportions of the poor and nonpoor populations benefit from PATH, by drawing on recent data about numbers of households in poverty in the overall Jamaican population. We expect that the most important data sources for information about poverty counts in the overall population will be the data collected in the 2002 Survey of Living Conditions.

In our examination of targeting, we will perform parts of the analysis separately for different groups of households. For example, in the case of children, a particularly important target group for PATH, we will focus on households with and without school-age children. Table II.3 illustrates the type of analysis to be conducted to assess targeting.

TABLE II.3

ASSESSMENT OF TARGETING OF PATH
(Distribution of PATH Participation by Poverty Status)

	All Participants	Participants with Children under 17 Years	Participants without Children
Poverty			
Poor			
Nonpoor			
Consumption/Poverty Line			
Less than 50%			
50%–60%			
60%–70%			
70%–80%			
80%–90%			
90%–100%			
100–110%			
110%–120%			
120%–130%			
More than 130%			

Thus far, the discussion of targeting has focused on how various households are positioned in relation to the official poverty measure, which, in turn, is based on consumption levels. However, the data set also makes available several *physical* measures of well-being that we will use in comparing PATH participants with the overall Jamaican population. Among the physical poverty measures of interest are:

- Access to electricity

- Source of drinking water

- Type of toilet facilities

- Ownership of certain durable goods such as car, motorbike, television, and so forth

4. Household Structure and Demographics

In developing a complete description of PATH participants, we will examine household structure and demographic variables. The analysis will include comparisons between PATH participants and the overall Jamaican population from the 2002 Survey of Living Conditions. Table II.4 illustrates the type of analysis to be conducted to describe the household structure and demographics of PATH households.

5. Economic Variables

We will follow similar lines of analysis to compare PATH participants to the overall population in terms of key economic factors. The following are among the variables to be examined:

- Presence of earned income in the household
- Presence of a full-time worker in the household
- Per capita food expenditures
- Per capita overall expenditures
- Participation in other social welfare programs

6. Behavioral Factors Expected to Be Affected Directly by PATH

As discussed in detail in a later section of this report, one central component of the overall PATH evaluation calls for examining whether PATH is succeeding in achieving its goal of increasing children's utilization of education and health care services. The baseline report can provide an early context for PATH's impact on service utilization by conducting a descriptive examination of choices made by PATH participants in areas of interest. The following are among the variables of interest to be examined:

- Percentages of days attending school among school-age children in PATH households
- Utilization of health care clinics by young children in PATH households

TABLE II.4

HOUSEHOLD STRUCTURE AND DEMOGRAPHIC CHARACTERISTICS OF PATH HOUSEHOLDS

	PATH Households	Jamaican Population
Household Structure		
Number of Members in the Household		
1		
2–3		
4–6		
7 and over		
Type of Household		
One head of household, no children		
One head of household, with children		
Two heads of household, no children		
Two heads of household, with children		
Presence of Elderly in Household		
Yes		
No		
Head of Household		
Age		
Less than 20 years		
21–40 years		
41–60 years		
Older than 60 years		
Gender		
Female		
Male		
Education		
Less than high school		
More than high school, but no tertiary		
Tertiary certification /diploma		
Marital status		
Single		
Married		
Divorced/separated		
Other		

- Immunization status of PATH children

7. Participation in PATH

While the first baseline survey was patterned largely after the 2002 Survey of Living Conditions, the survey instrument nonetheless includes a number of questions specifically related to PATH participation. Descriptive tabulations of relevant survey data will shed light on household experiences with the program. Table II.5 illustrates the type of analysis we will conduct regarding PATH participation.

8. Summary

The goal of the descriptive analysis is to examine the recipients of PATH benefits and provide a context for the later impact analysis. As noted, the tabular analysis of the first baseline survey will examine a broad range of variables and thus provide a detailed picture of the characteristics of PATH participants as of early 2003. As appropriate, we will also draw on information from the 2002 Survey of Living Conditions and other published sources, in order to compare PATH participants to the overall Jamaican population.

B. DESCRIPTIVE ANALYSIS BASED ON THE MIS DATA

We will also characterize PATH participants by using the program's Management Information System (MIS), which includes information from the application forms of ***all*** households that applied to the PATH program. This group of households consists of those that were eligible and registered for PATH (participants), those that were eligible and did not register for PATH (eligible nonparticipants), and those that were deemed ineligible for the program because they scored above the eligibility threshold (noneligible applicants). The MIS data also contain administrative information on PATH participants, such as records of any payments made to them, dates the payments were made, and corresponding amounts.

TABLE II.5

PARTICIPANTS' EXPERIENCE WITH PATH

Heard About PATH
Radio
Poster/flyer
Church
Health center
Friends or relatives
Other

Where Applied to PATH
MLSS parish office
Special mobile center operated by MLSS
Fixed center operated by MLSS
Another location

Application Form Easy to Understand
Yes
No

Length of Application Process
Less than 1 hour
1–2 hours
2–3 hours
More than 3 hours

Visited Center More Than Once
Yes
No

Center Staff Was Helpful
Yes
No

The use of the MIS data goes beyond describing PATH participants at baseline. Subsection 1 describes the various uses of the MIS data in the evaluation. Subsection 2 discusses the variables that we will use in the descriptive analysis based on the MIS data. Finally, Subsection 3 describes the analytic techniques that we will apply to the MIS data.

1.   Main Uses of MIS Data

As described above, the main analytic use of the MIS data will be to describe PATH participants before they entered the program in terms of a set of basic demographic characteristics, program-related information, and socioeconomic characteristics. While the MIS data are not as rich as the already mentioned first baseline survey data with respect to breadth of information, they are available for all PATH participants, not just those who responded to the first baseline survey of program participants (conducted in early 2003). This feature of the data will allow greater statistical precision when describing participants or subgroups of participants and will also allow adjustments for potential nonresponse biases (see below).

In a particularly important use, the MIS data provided the basis for selecting the households that will be used to assess the program's impacts. The design of the impact analysis involves a comparison between a group of households that participate in the program (participants) and a group of households that do not participate (comparison group). We selected the two groups of households based on their eligibility score as reported in the MIS data. Chapter III provides details on how the groups were selected.

We will also use the MIS data to create nonresponse weights for the data collected in the first baseline survey of program participants that will be used to describe PATH participants at baseline. Even though the sample selected to be interviewed in the first baseline survey was designed to be representative of all PATH participants, it is possible that, because some households could not be interviewed, the sample for which we have data is not representative of

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all participants. The nonresponse weights created with the MIS data will therefore attempt to redress any imbalances created by survey nonresponse so that any descriptive statistics based on the survey data are representative of all PATH participants.

Further, we will use the MIS data in the course of the evaluation to compare some groups of households of interest for the evaluation with one another. In particular, we will assess the degree to which participants differ from eligible nonparticipants[6] and thus identify those groups of households that the program finds difficult to enroll. We will also use the MIS data to assess the degree to which households selected for the impact study's participant group differ from the average PATH participant and thus consider the implications for the generalizability of the study findings.[7] Finally, we may use the payment module of the MIS data to determine the amount of benefits received by households as of a certain point in time[8] and to assess compliance with program rules.[9]

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[6]We will conduct statistical tests on the differences between the two groups for some of the important demographic and socioeconomic variables. We may also conduct multivariate regression where the dependent variable is a binary indicator for whether or not the household enrolled in PATH and the explanatory variables are all the factors that may be associated with enrolling in PATH conditional on PATH eligibility.

[7]The impact design selected explicitly recognizes that the group of participants in the impact study is likely to differ (probably be better off) from the average PATH participant.

[8]This will be useful for describing the economic benefits that households receive directly from the program and for adjusting consumption expenditures in the baseline household survey conducted in early 2003. Given that one objective of the first baseline survey was to obtain consumption expenditures before program launch, the expenditures need to be adjusted because the survey was conducted at a time when many households had already received one or two PATH payments. By subtracting the PATH payments received by households by the time they responded to the survey from the consumption expenditures reported in the survey and possibly adjusting for labor supply responses, we will seek to estimate households' consumption expenditures before participating in the PATH program.

[9]Given that the payments are conditional on families sending their children to school and making preventive health visits, the MIS collects data on school attendance and visits to health clinics. While we plan to measure these variables in the household surveys, it is possible that the MIS data could be used to check the robustness of our results to the measurement of the

2. Variables to Be Included in Descriptive Analysis

In using the MIS data to describe PATH participants, we will seek to characterize households in terms of demographic, program-related, and socioeconomic characteristics. The following are some of the variables to be analyzed:

- *Demographic Characteristics.* Number of members in the household, age distribution in the household, and place of residence (Kingston, other urban cities, rural towns)

- *Program-Related Characteristics.* PATH eligibility score, PATH benefit type, and application date

- *Socioeconomic Characteristics.* Ownership status of home, source of light, sewer type, source of water, ownership of a telephone, type of toilet facilities, main material on the outer walls of the home, weekly spending, and ownership of household assets (such as gas stove, electric stove, refrigerator, fan, stereo equipment, video equipment, washing machine, motor bike, car, and so forth)

3. Analysis Techniques

As noted, the analysis of the MIS data on the characteristics of households and individuals participating in PATH will be largely descriptive in nature. It will be based on detailed tabulations of the MIS data. Given that most of the variables that can be derived from the MIS take a small number of values (generally two), the analysis will present percentages of the relevant populations with various characteristics. For continuous variables, such as eligibility scores and weekly expenditures, we will tabulate means, medians, and frequency distributions.

The following three table shells illustrate some of the descriptive analysis we plan to conduct to characterize PATH participants.

(continued)
variables used. The decision of whether to perform these robustness checks will depend on the quality and timely availability of the data.

TABLE II.6

PROGRAM-RELATED CHARACTERISTICS
(All PATH Participants)

Characteristics	All PATH Participants
Eligibility score	
Average	
Minimum	
Maximum	
Distribution (percent)	
< 1,000	
1,000 –< 1,010	
1,010 –< 1,020	
1,020 –< 1,030	
1,030 –< 1,040	
Benefit Type (%)	
Health	
Education	
Elderly	
Disabled	
Pregnant/lactating	
Adult poor	
None	
Application Date (%)	
Before April 2002	
April 2002–June 2002	
July 2002–September 2002	
October 2002–December 2002	
After December 2002	
Sample Size	

TABLE II.7

DEMOGRAPHIC CHARACTERISTICS
(PATH Participants Relative to Eligible Nonparticipants)

Characteristics	PATH Participants	Eligible Nonparticipants
Number of HH members (%)		
1		
2–3		
4–6		
7 and over		
Age (%)		
< 3 years		
3–5 years		
6–16 years		
17–59 years		
60 years and older		
Location (%)		
Kingston		
Other town		
Rural		
Sample Size		

TABLE II.8

SOCIOECONOMIC CHARACTERISTICS
(All PATH Participants)

Characteristics	All PATH Participants
Water Source	
Indoor tap/pipe	
Outside private pipe	
Public standpipe	
Other	
Main Material on the Outer Wall	
Wood	
Block and steel	
Other	
Toilet Facilities	
Exclusive use	
Shared	
Weekly Spending (J$)	
Average	
Median	
Telephone	
Yes	
No	
Cellular	
Household Items	
Gas stove(s)	
Electric stove(s)	
Refrigerator(s) or freezer(s)	
Fan(s)	
Stereo equipment	
Video equipment	
Washing machine(s)	
Television(s)	
Motor bike(s)	
Car(s) and/or other vehicle(s)	
Sample Size	

III. IMPACT ANALYSIS

The main objective of the impact analysis is to estimate the causal effect of the PATH program on the outcomes it seeks to influence. Ideally, the analysis should compare the outcomes of households some time after they began participating in PATH with the outcomes that the same households would have obtained at the same point in time if they had not participated in PATH. The latter, usually referred to as the counterfactual, cannot be directly observed. Therefore, a key challenge in conducting an impact study is to devise a design strategy that allows the analyst to construct or "mimic" the counterfactual.

A methodologically appealing way to mimic the counterfactual is to assign households randomly to the participant group or a control group. The participant group would be eligible for PATH while the control group would not. Under this design, the two groups would be identical—up to a known degree of statistical uncertainty—in all ways except one: their participation in the program. Hence any observed differences in the outcomes of the two groups would be attributable to the program and not to any pre-existing differences between the two groups. While a design based on random assignment was considered in earlier stages of the evaluation, the GOJ decided not to pursue such a design approach because of concerns about fairness and financial implications. Hence the evaluation will use a quasi-experimental design to estimate the impact of PATH.

The quasi-experimental design chosen to evaluate PATH called for selecting as a comparison group a set of households not participating in PATH. The primary challenge was to select the comparison group so as to minimize baseline differences between it and the participant group. In this way, any differences observed in the outcomes between the participant and

comparison groups could be reliably attributed to the program and not to some other factor external to the program.

A common concern when selecting a comparison group is that the group may differ from the participant group in ways other than exposure to the program. If analysts observe any such differences, they can account for them statistically in the estimation of program impacts. But if the differences are unobservable in ways that are correlated with outcome measures, analysts often cannot control for them statistically and this may yield bias in the estimation of program impacts. For example, it may be reasonable to suspect that PATH participants are on average more motivated than other poor households that did not apply for PATH, given that they learned about the program and decided to apply and enroll in the program (as opposed to perhaps assuming a less proactive attitude to improving their life circumstances). Accordingly, it is possible that participant households may obtain higher outcomes than nonparticipant households because of their higher motivation, not because of the program. In this hypothetical scenario, the use of a group of nonapplicant poor households as a comparison group would tend to overstate systematically the effect of PATH. In other cases, circumstances could lead to an understatement of PATH's effects. Hence the choice of a suitable comparison group is critical to the calculation of unbiased estimates of program effects.

The next section describes the design selected and assesses it in terms of its ability to produce unbiased estimates of PATH's effects. Section 2 outlines issues that need to be considered when interpreting the impact estimates generated by the application of the evaluation design. Section 3 discusses in detail the process used to select the participant and comparison groups. Section 4 considers the extent of participation in the PATH program while Section 5 describes the main outcome indicators that will be used to assess the success of PATH, and Section 6 describes the analytic techniques we plan to use to estimate the impact of PATH.

Finally, Section 7 presents the sample sizes and statistical precision available in the estimation of impacts.

1. Description of Selected Design

The impact design chosen for the evaluation consists of comparing households *just below* the eligibility threshold (eligibles) with households *just above* the eligibility threshold (near-eligibles). The first group will serve as the participant group and the latter as the comparison group. The rationale for the design is that the two groups are likely to be very similar to each other in terms of the criteria used to determine PATH eligibility (that is, the program selection rules). Both groups will exhibit very similar eligibility scores (based on observable characteristics), although the scores will be slightly lower for the participant group. Furthermore, as both groups made the effort to apply to the PATH program, they are likely on average to have a similar level of motivation, a similar willingness to apply for social assistance, a similar perceived need for the program, and so forth. Thus, the outcomes of near-eligibles provide a credible counterfactual for the eligibles with very similar scores.

The similarity between the two groups' scores makes the selected impact design a logical choice for estimating program effects. Moreover, given that the analysis will account statistically for all the characteristics that determined program eligibility (as reflected in the eligibility score) and for baseline measures of the outcomes, any observed differences between the two groups will likely be attributable to the PATH program rather than to pre-existing differences between the two groups.

In sum, the major steps needed to implement the selected design are:

- Collect baseline data on both the participant group and the comparison group
- Collect follow-up data on both the participant group and the comparison group

- Estimate PATH's impacts by comparing the distribution of outcomes of the participant group with those of the comparison group, statistically accounting for baseline measures of the outcomes as well as for other household characteristics

Ideally, we would have liked to select the participant and comparison groups based solely on the proximity of their eligibility scores to the eligibility threshold. However, practical considerations made us deviate from this criterion. First, implementation of the PATH program was already well underway by the time that final discussions on the choice of evaluation design took place. Since collection of baseline data was an important feature of the design (for reasons related to internal validity and statistical power; details below), we restricted the participant group sample to households that had recently become eligible for PATH but had not yet been notified of their eligibility. This restriction will allow the Statistical Institute of Jamaica (Statin) to collect baseline data on households in the participant group before these households enter the program.

Second, given that the participant group consists mainly of households that applied to the program relatively recently (for reasons mentioned above) and that the households in the comparison group were selected based on their proximity to the eligibility threshold and not on their application date, the comparison group is composed of households that applied to PATH earlier than households in the participant group (on average; details in the next section). So, while the comparison group is fairly similar to the participant group in terms of characteristics that determined the eligibility score, it is much less similar in terms of the application date. We decided to use the eligibility score and not the application date as the guiding criterion for selecting the comparison group because in our judgment it was much more crucial to obtain a comparable group in terms of household characteristics that may affect program outcomes (such

as demographic and socioeconomic characteristics) than in terms of the application date.[1] Finally, given sample size constraints for collecting household survey data, we decided to increase the statistical power of the analysis involving children by focusing the impact study on households with children. These households are probably the ones most likely to be affected by PATH.

2.   Interpretation of Impact Estimates

An important feature of an impact evaluation design is its ability to generate findings that can be generalized to a population of interest (i.e., *externally* valid findings). Because we restricted the participant and comparison groups to households with children (for reasons outlined above), the impact estimates will be generalizable only to PATH enrollees with these characteristics. Given that the main behavioral effects that PATH is expected to achieve fall in the domains of school attendance and health clinic visits, we believe that the limitation is relatively minor.

Another limitation in terms of external validity is that the impact estimates associated with the selected design can be generalized to the average PATH participant only under the assumption that the group just below the eligibility threshold is affected by PATH to the same extent as the average PATH participant. While such an assumption may be reasonable for some outcomes (such as attendance at school or visits to health clinics), it is not likely to hold for certain other outcomes, such as poverty status of the household. Since households in the impact evaluation's participant group are likely to be closer to the poverty line than the average PATH

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[1]If the program under evaluation had been an employment-training program, the application date might have been an important variable to take into account when selecting the comparison group. Individuals tend to apply to such programs just after they have lost their jobs, and thus a comparison of outcomes at a certain point in time for individuals who applied at different times could prove misleading.

enrollee (given that they are closer to the eligibility cut-off than the average PATH enrollee), the estimated impact of PATH on the poverty rate is likely to overstate the true effect of PATH on reducing Jamaica's poverty rate.[2]

Nevertheless, the selected design will be externally valid for PATH enrollees who are on the margin of selection into the program (i.e., marginal participants). In other words, the impact estimates obtained from the selected design will be valuable for assessing the likely consequences of expanding or cutting PATH at the margin. We argue that the estimates will be of potential interest to policymakers who may soon consider whether to expand PATH.

We will conduct some analyses to assess the extent to which the group of participants in the impact analysis differs from the group of all PATH participants. Table III.1 illustrates the type of analyses we plan to conduct. The analyses will help assess the likelihood that the impact estimates obtained for the selected participants will differ substantially from the impact of PATH on all participants. Furthermore, we will also estimate program impacts for certain sub-groups (such as participants with the lowest eligibility scores) to help inform such an assessment.

3. Process to Select the Participant and Comparison Groups

In this section, we describe in detail how we selected the participant and comparison groups and then assess the differences between the two groups at baseline. We took the following steps to select the participant and comparison groups:

1. From the MIS data file sent to us on April 2003, which contained all households that had applied to PATH by that time, we restricted our attention to two groups:

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[2]But the estimated impact will not necessarily overstate the impact on continuous measures of well-being such as consumption level.

TABLE III.1

PROGRAM-RELATED CHARACTERISTICS
(PATH Participants in Impact Study Relative to All PATH Participants)

Characteristics	All PATH Participants	PATH Participants in Impact Study
Eligibility score		
Average		
Minimum		
Maximum		
DISTRIBUTION (percent)		
< 1,000		
1,000 –< 1,010		
1,010 –< 1,020		
1,020 –< 1,030		
1,030 –< 1,040		
Benefit type (%)		
Health		
Education		
Elderly		
Disabled		
Pregnant/lactating		
Adult poor		
None		
Application date (%)		
Before April 2002		
April 2002–June 2002		
July 2002–September 2002		
October 2002–December 2002		
After December 2002		
Sample size		

- *Potential participant group--*the 6,800 households that scored below the eligibility threshold (1,035 or less) but had not been invited to participate in the program

- *Potential comparison group--*the 9,600 households that scored just above the eligibility threshold (1,035–1,040) and that had not received notification that they were not eligible for the program.

2. For each of the two groups above, we *dropped* households that had no children under 17 years of age unless one of the adults was a pregnant woman. We also dropped households that applied to PATH before May 1, 2002, so that the sample would not include households that had applied so long ago that we would experience difficulty in locating them during our data collection efforts.

3. The **participant group** was formed by the 2,500 remaining members of the potential participant group that scored *highest*. The **comparison group** was formed by the 2,500 remaining members of the potential comparison group that scored *lowest*. The design minimized the differences in the scores of the two groups. Furthermore, the full sample of 5,000 households was divided equally between participant and comparison group members; the split gives the most precise impact estimates for a given sample size.

In view of the nature of the design, it is not surprising that the two groups look fairly similar to each other, although the participant group appears somewhat more disadvantaged than the comparison group. Tables III.2 and III.3 show comparisons between the two groups on some key demographic, socioeconomic, and program-related characteristics. The distributions of age and type of program benefit look fairly similar across the two groups, but the participant group is more likely to live in Kingston (14 versus 7 percent) and to have applied to the program recently (after December 2002).[3] Other more modest differences between the two groups follow: members of the participant group are slightly less likely to own their home (46 versus 49 percent), to have exclusive use of toilet facilities (74 versus 79 percent), to live in a house

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[3]The higher fraction of recent applicants in the participant group is not surprising given that the application date was not used as a criterion to select the participant and comparison groups (see details in previous section).

TABLE III.2

BACKGROUND CHARACTERISTICS OF PARTICIPANT AND COMPARISON GROUPS
Demographic and Program-Related Characteristics (percent unless otherwise noted)

Characteristics	Participant Group	Comparison Group
Eligibility Score		
Average	1,027	1,036**
Minimum	1,017	1,035
Maximum	1,035	1,037
Distribution (%)		
< 1,010	0	0**
1,010 –< 1,020	13	0**
1,020 –< 1,030	55	0**
1,030 –< 1,035	32	0**
1,035 –< 1,040	0	100**
PATH Application Date (%)		
April 2002–June 2002	64	85**
July 2002–September 2002	6	11**
October 2002–December 2002	7	1**
After December 2002	24	3**
Number of HH Members (%)		
1	0	0
2–3	20	27**
4–6	66	62**
7 or more	13	11*
Average Age of Head (years)	41	41
Education of Head (%)		
None	3	2
Completed primary	39	47**
Some secondary	25	21**
Completed secondary	31	28*
Above secondary	1	1
Location (%)		
Kingston	14	7**
Other town	15	18*
Rural	70	75**
Benefit Type (%)		
Health	21	18**
Education	40	40
Elderly	4	3
Disabled	1	1
Pregnant/lactating	3	3
Adult poor	30	31
None	1	3**
Sample size (households)	**2,500**	**2,500**

SOURCE: PATH's Management Information System (MIS) data.
*Difference between the two groups statistically significant at the 5% level
**Difference between the two groups statistically significant at the 1% level

TABLE III.3

BACKGROUND CHARACTERISTICS OF PARTICIPANT
AND COMPARISON GROUPS
Socioeconomic Characteristics (percent, otherwise noted)

Characteristics	Participant Group	Comparison Group
Ownership Status of Home		
Own	46	49*
Source of Light		
Electricity	76	68**
Sewer Type		
Pit	76	80**
Water Source		
Indoor tap/pipe	6	6
Outside private pipe	30	28
Public standpipe	31	30
Other	34	36
Telephone		
Yes	9	12**
No	52	55*
Cellular	39	33**
Toilet Facilities		
Exclusive use	74	79**
Main Material on the Outer Wall		
Wood	54	46**
Block and steel	32	40**
Other	14	13
Weekly Spending (J$)		
Average	1,613	1,655
Median	1,500	1,500
Household Items		
Gas stove(s)	62	58**
Electric stove(s)	0	0
Refrigerator(s) or freezer(s)	33	36
Fan(s)	24	24
Stereo equipment	14	18**
Video equipment	8	8
Washing machine(s)	0	0
Television(s)	61	57**
Motor bike(s)	0	1
Car(s) and/or other vehicle(s)	0	1*
Sample Size (Households)	**2,500**	**2,500**

SOURCE: PATH's Management Information System (MIS) data.
*Difference between the two groups statistically significant at the 5% level
*Difference between the two groups statistically significant at the 1% level

constructed of block and steel (32 versus 41 percent), and to own household goods such as a refrigerator or video equipment. The participant group also reported slightly lower average weekly spending (J$1,615 versus J$1,653).

As shown in Tables III.2 and III.3, many of the differences between the participant and comparison groups are statistically significant. This is not surprising given that the groups are defined according to different scores on the eligibility index and given the substantial sample sizes in each group. We do not believe, however, that these differences constitute a major obstacle for the analysis, since our plans call for controlling statistically for these factors. Furthermore, because eligibility was determined by a scoring formula based on household characteristics stores in the MIS, *all* the factors that determined eligibility into the program can be controlled statistically in the estimation of impacts.

4. Participation in PATH

Before estimating the impact of a program, it is useful to describe the extent to which households in the participant group actually participated in the program. Some members of the participant group might decide not to register for PATH despite the fact they were deemed eligible for the program. Others register but might drop out of the program for a variety of reasons (they moved but did not inform the PATH office of a new address where checks could be sent, they failed to meet the conditions needed to remain in PATH, and so forth).

The descriptive analysis of PATH participation will present summary statistics of the following variables for the participant group:

- Percent that registered for PATH
- Length of participation by the time follow-up data are collected
- Total amount of money received from PATH by the time follow-up data are collected

The participation analysis will help assess the extent to which program impacts can be expected. For example, if the average amount of money received by PATH households during the evaluation period proves to be small, PATH would be unlikely to have a substantial effect on reducing poverty.

5. Outcome Indicators

Based on conversations with the GOJ, the two most important outcome variables to be considered in the impact evaluation are:

- School attendance
- Preventive visits to health care facilities

In addition, we will consider certain secondary outcomes, so-called because, in part, the PATH requirements affect them less directly and because, in part, some outcomes are observed only for small subsets of participants (pregnant women, for example). Accordingly, we will probably find it difficult to detect such impacts with the planned sample sizes. Nonetheless, secondary outcomes of interest include:

- Consumption level
- Poverty status[4]
- Timing of first antenatal visit
- Number of antenatal visits
- Immunization rates
- Employment activity

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[4]As pointed out in the previous section, the selected design is likely to overstate the effect of PATH on outcomes such as poverty rate.

Table III.4 lists the questions in the survey instrument that we plan to use for constructing each of the main outcome variables to be considered in the estimation of program impacts.

6. Analysis Techniques

The impact analysis will use several analytic approaches. Parts of the analysis will focus on simple techniques, such as difference of means, which can prove useful in obtaining a first "look" at the data. In other components of the research, however, we will draw on relatively more sophisticated techniques that offer the potential for greater statistical power and will allow us to control for the possible effects of factors other than PATH on important outcome variables.

Here, we describe the main analytic approaches that we will use and discuss a number of issues associated with planning the analysis, such as details concerning statistical methods and the possibility of subgroup analysis. The next four subsections describe a set of successively more sophisticated specifications to be used in the analysis.

a. Specification 1. Direct Descriptive Comparisons of Outcomes Between PATH Participants and the Comparison Group

We have selected for the impact analysis a comparison group that is quite similar to the PATH participants. Accordingly, an important first step in the analysis is to compare average values of outcome variables from the follow-up survey across the two groups. For instance, are participant households more likely than comparison households to make use of preventative care services for their children? Do the older school-age children of PATH participants have higher average levels of school attendance? Descriptive analysis of these and similar outcomes provides a "first cut" at examining whether PATH may have had effects on the outcomes the program was designed to influence. Simple difference-of-means and difference-of-proportions tests can assess whether observed differences are statistically significant.

TABLE III.4

OUTCOMES TO BE USED IN IMPACT EVALUATION

Outcome	Question in Survey Instrument	Analysis Variable	Relevant Sample
Main Outcomes			
School attendance	"In a typical 4-week period, how many times is _____ sent to school?" "During the 4-week period _____– _____, how many days was ____ sent to school?"	Whether child met minimum attendance requirements Percent of classes attended in reference period	Children age 7 to 17 years
Preventive visits to health care facilities	"How many of these times were the visits to the health center for preventive care or for growth monitoring?"	Number of visits to health care facilities in reference period	Children age 0 to 6 years Pregnant women Lactating mothers
Other Outcomes			
Consumption level	Based on modules of Daily Expenses (E), Food Expenses (F), Consumption Expenditures (G), Nonconsumption Expenditures (H), Housing and Related Expenses (I)	Consumption level measured in Jamaican dollars	All households
Poverty rate	Based on consumption module and Jamaica's poverty line	Poverty status of household	All households
Timing of first antenatal visit	"How many months were you pregnant when you visited a health practitioner for the first time during this pregnancy?"	Number of months pregnant at time of first prenatal visit	Pregnant women
Immunization rates	Based on record of child's immunization status (OPV, DPT, BCG, and measles)	Whether child received all immunizations	Children born after household was interviewed in baseline survey II
Child employment activity	"Does ____ carry out any kind of work or other activities that contribute toward the maintenance of the household or toward himself/herself?" "Is this work activity done year-round or just during school holidays?" "For how many hours per week does ___ usually carry out this work/activity?"	Whether child is employed	Children age 7 to 17 years

b. Specification 1A. Comparing Difference in *Changes* In Outcomes

A useful variant of Specification 1 may be a comparison of differences between PATH participants and nonparticipants with respect to average *changes* in outcomes between the baseline and follow-up surveys. For instance, for each member of the PATH group and each member of the comparison group, we can calculate the *change* in important outcomes between the baseline survey and the follow-up survey and then compare the average changes.

The advantage of this approach, which is sometimes called the double difference or Difference-in-Difference method, is that it controls, at least in part, for differences between the two groups in the level of their outcome variables before the inception of PATH. For instance, suppose that, despite our efforts to match the PATH and comparison groups as closely as possible, the children in the PATH group already showed higher levels of school attendance than children in the comparison group even before the launch of PATH. If the differences persisted over the observation period, Specification 1 might ascribe the observed differences in school attendance to the effects of PATH when, in fact, they simply reflect baseline differences in the samples. Therefore, the second analysis method, based on double differences, seeks to avoid an inaccurate assessment of the basis for change by determining whether the *change* in the PATH group was greater than the *change* in the comparison group between the baseline and follow-up surveys.

c. Specifications 2 and 2A. Regression Model, with Outcomes from the Follow-Up Survey as the Dependent Variables and the Following as Independent Variables: (1) the PATH Selection Score and (2) a Binary Indicator of Whether the Household is in the Participant Group or the Comparison Group

As described earlier, the key factor in defining the comparison group relative to the PATH group was the score on an index of need, which was computed as part of the PATH selection process. While the samples have been constructed in such a way that the scores are relatively similar, they nevertheless vary systematically, with the comparison group scoring higher on the

index than any of the PATH households. Consequently, it will be important to control for the effects of the index variable (named SCORE on the MIS data set). Thus, we will examine results based on a second set of approaches, Specification 2 and Specification 2A, which regress the various outcome variables on an indicator of participation in PATH and a household's index score. Specifications 2 and 2A essentially analyze the impacts of the PATH on the outcomes while *statistically controlling for the initial index score.*

Specifications 2 and 2A can be viewed as variants of an approach discussed in the evaluation literature and sometimes termed the regression discontinuity design. The technique uses the SCORE variable to predict outcomes for both PATH participants and comparison group members and then to evaluate the effects of PATH in terms of the differences in the heights of the regression lines.

Within this overall context, it is of interest to analyze both *absolute values* of the outcome variables, as in Specification 1, and changes in the outcome variables, as in Specification 1A. We have defined Specification 2 and Specification 2A to do this. Specification 2 focuses on absolute levels of outcomes while Specification 2A focuses on changes in outcomes.[5]

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[5] A somewhat more general version of specification 2A includes the baseline value of the outcome variables as an explanatory variable in the regression rather than subtracting the value from the follow-up variable to construct the dependent variable. This more general version is similar to that discussed in the text but, unlike the specification in the text, does not constrain the coefficient on the baseline value to be 1. In conducting the analysis, we will experiment with this version of Specifications 2A as well as with the versions discussed in the text. An analogous point applies to Specification 3A, discussed subsequently in the text.

d. Specifications 3 and 3A. Regression Models that Include Variables from Specification 2 and Specification 2A but also Include Various Other Household Descriptors

Specifications 2 and 2A focus on controlling statistically for the index variable, SCORE, which was a primary factor in selecting households into PATH. However, there are many other baseline household characteristics that could potentially affect outcomes—variables such as household size employment status, education level, urban/rural status, and many others.

Our final set of analytic approaches, Specifications 3 and 3A, incorporate these variables into the regression specifications. Even though many of the characteristics are embedded in the selection variable, SCORE, their inclusion in that variable involves particular functional forms chosen to fit the needs of the selection process while not necessarily reflecting behavioral effects. Incorporation of the characteristics into the specifications separately (in addition to continuing to include the SCORE variable) will allow us to examine and control for their possible direct effects on outcomes as well as for effects that occur through PATH selection.

e. Subgroup Analysis

While the discussion thus far has focused on analysis methods that can potentially be applied to the entire sample, we may want to examine different groups of households separately. In some instances, the outcome variables of interest are relevant only to a subgroup of the sample. Such would be the case in the analysis of utilization of health clinics for well-baby care, which is relevant primarily to households with very young children. In addition, it is possible that different groups of households might exhibit such different behavior in response to PATH that we will be interested in conducting separate analyses for these groups. This might, for instance, be true in the case of urban versus rural households or of households with and without more than one working-age adult. After completing a preliminary analysis of the data with respect to both the size and descriptive characteristics of different groups of households, we will determine jointly with GOJ staff which subgroup analyses seem most useful.

7. Sample Sizes and Precision

The samples to be used for the impact evaluation need to be sufficiently large to ensure that the analysis has adequate statistical power, thereby ensuring a reasonable probability of detecting relatively small impacts, if they occur. The GOJ has decided to start with a total sample size of 5,000 households to be divided evenly between the participant group and the comparison group. This is the number of households that STATIN will attempt to interview in the forthcoming baseline survey (baseline survey II). However, because of various forms of sample attrition, the final sample size used in the analyses will not total 5,000 households. In particular, several aspects of the data collection process need to be considered in addressing attrition issues.

To begin, with some sample members either not locatable or not willing to participate in the survey, the analysis will have to account for a certain measure of nonresponse in the baseline survey. Furthermore, among those sample members for whom baseline survey information is collected, some additional sample attrition will occur as a result of location problems and nonresponse at the time of the follow-up survey.

Another issue that affects the statistical precision of the analysis is that, for a variety of reasons, some households originally counted as PATH participants may in the end choose not to enter the PATH program, effectively "diluting" the statistical power of the impact estimates. The extent to which this dilution occurs is a function of the take-up rate (i.e., the rate at which members of the participant group register in the program). Table III.5 illustrates the final sample sizes under different attrition scenarios. To keep the calculations simple, the table focuses only on the survey-related factors associated with sample attrition (not with the take-up rate). The assumed follow-up response rates for the comparison group are somewhat lower than for the participant group, reflecting the fact that the comparison households may be more difficult to locate in the follow-up survey. This is true both because they applied to PATH earlier (on

average) than the participant group, and also because comparison households will not be in direct, ongoing contact with the program (and hence their addresses are less likely to be up to date).

As Table III.5 demonstrates, even with moderately high response rates to the surveys, final sample sizes will be substantially smaller than the initial sample sizes. Attaining large sample sizes is important not only for achieving high levels of statistical precision (see next section for details) but also for minimizing possible nonresponse biases in our estimates. Hence, obtaining high response rates to the survey and high take-up rates for participants (after they are interviewed at baseline) will be pivotal for the evaluation.

To assess the statistical implications of various final sample sizes, the tables below (Tables III.6 through III.9) illustrate the minimum detectable difference that can be reliably detected between the participant and comparison groups for a given outcome. We examine two critical outcomes: school attendance and number of visits to health centers. Table III.6 suggests that, if the final sample sizes (after baseline data collection) for the participant and comparison groups were 1,400 households, then the impact analysis would likely detect an impact of 3.15 percentage points or more (if it exists) on the fraction of children who complied with the minimum attendance requirement. Naturally, if the sample size were larger, the impact analysis would likely detect even smaller effects.

It is important to focus not only on overall sample sizes (as illustrated in Tables III.6 and III.8) but also on subsamples of interest for the evaluation. For example, it will probably be desirable to assess whether the impacts on school attendance vary by grade level (lower, middle, and higher). Assuming the same number of children in each grade level in our sample, the effective sample size would decrease to a third of its initial size for the school attendance subsample analysis, thus reducing the statistical power of the analysis. For example, Table III.7

shows that if we were to examine the effect of PATH on school attendance for a subgroup of 550 households (say, children in middle grades), the impact analysis would likely detect an effect of 5.02 percentage points or more (if it exists) on the fraction of children who complied with the minimum attendance requirement.

TABLE III.5

FINAL SAMPLE SIZES UNDER DIFFERENT SAMPLE ATTRITION SCENARIOS

Scenarios	Participants	Comparisons
Assumption Set 1 (85% response rate for both groups at baseline; 90% response rate for participants in follow-up; 85% response rate for comparisons in follow-up)		
Initial sample	2,500	2,500
Sample at start of follow-up	2,125	2,125
Final analysis sample	1,913	1,806
Assumption Set 2 (80% response rate for both groups at baseline; 85% response rate for participants in follow-up; 80% response rate for comparisons in follow-up)		
Initial sample	2,500	2,500
Sample at start of follow-up	2,000	2,000
Final analysis sample	1,700	1,600
Assumption Set 3 (75% response rate for both groups at baseline; 80% response rate for participants in follow-up; 75% response rate for comparisons in follow-up)		
Initial sample	2,500	2,500
Sample at start of follow-up	1,875	1,875
Final analysis sample	1,500	1,406

TABLE III.6

POWER CALCULATIONS FOR SCHOOL ATTENDANCE
ANALYSIS BASED ON FULL SAMPLE

Participant Group Sample Size	Comparison Group Sample Size	Minimum Detectable Difference (percentage points)
1,200	1,200	3.40
1,400	1,400	3.15
1,600	1,600	2.95
1,800	1,800	2.78
2,000	2,000	2.63
2,200	2,200	2.51

NOTE: Power calculations show the minimum difference that can be reliably detected in the probability of a household's children meeting attendance goals. Based on tabulations of the 2002 Survey of Living Conditions, the calculations assume that, in the absence of PATH, 66 percent of poor households would meet attendance goals.

As an approximation, the calculations in Table III.6 assume that each sampled household contains at least one school-age child and that there is one observation per household. The approximation reflects offsetting factors. On the one hand, some households may have only younger children; on the other hand, other households may have several school-age children. In the first case, the household will not provide usable information for the attendance analysis while, in the second case, information on more than one child will be available (though it must be recognized that these observations are not entirely independent due to within-household correlations). Thus, the loss of power from some households without children in the relevant ages is at least partially offset by the increased power from some households with several children. In constructing the power tables, we are assuming (as an approximation) that these factors cancel each other out.

Table entries in the third column show "minimum detectable differences," which are defined as the effects in percentage points that can be detected with 80 percent power using a one-tail 95 percent confidence level test. To approximate the minimum detectable difference, we based the analysis on a difference-of-proportions test between participants and controls in the post-implementation period, with 50 percent of the variance of the outcome variable controlled by regressing observations on pre-implementation status. Under these assumptions, the minimum detectable difference is given by:

$$\text{MDD} = [(\ t1 + t2\ )\ *\ \text{SQRT}\{\ 2\ *\ (\text{var})\ *\ (1\text{-rsq})\ \}\ ]\ \ /\ \ \ [\ \text{SQRT}\{N\}\ ]$$

where MDD equals the minimum detectable difference, t1 = the t-value for the desired precision standard, or 1.645 for a 95 percent one-tail test; t2 = the t-value corresponding to the desired "power" of the test, e.g., .842 for an 80 percent test. The term (var) is the assumed variance of the outcome variable. In the case of a dichotomous variable, it is (p)(1-p). The term (rsq) is the fraction of the variance in the post-implementation period explained (and thus controlled for) by pre-implementation status. It is assumed here to be 50 percent. (The 50 percent assumption for (rsq) is equivalent to assuming that the correlation between the pre-implementation and post-implementation observations on the same households is about .7.)

TABLE III.7

POWER CALCULATIONS FOR SCHOOL ATTENDANCE
SUBSAMPLE ANALYSIS BASED ON ONE-THIRD OF SAMPLE

Participant Group Sample Size	Comparison Group Sample Size	Minimum Detectable Difference (percentage points)
400	400	5.89
500	500	5.27
550	550	5.02
600	600	4.81
650	650	4.62
700	700	4.45

NOTE: Power calculations show the minimum difference that can be reliably detected in the probability of a household's children meeting attendance goals. Based on tabulations of the 2002 Survey of Living Conditions, the calculations assume that, in the absence of PATH, 66 percent of poor households would meet attendance goals.

As an approximation, the calculations in Table III.7 assume that each sampled household contains at least one school-age child and that there is one observation per household. The approximation reflects offsetting factors. On the one hand, some households may have only younger children; on the other hand, other households may have several school-age children. In the first case, the household will not provide usable information for the attendance analysis while, in the second case, information on more than one child will be available (though it must be recognized that these observations are not entirely independent due to within-household correlations). Thus, the loss of power from some households without children in the relevant ages is at least partially offset by the increased power from some households with several children. In constructing the power tables, we are assuming (as an approximation) that these factors cancel each other out.

Table entries in the third column show "minimum detectable differences," which are defined as the effects in percentage points that can be detected with 80 percent power using a one-tail 95 percent confidence level test. To approximate the minimum detectable difference, we based the analysis on a difference-of-proportions test between participants and controls in the post-implementation period, with 50 percent of the variance of the outcome variable controlled by regressing observations on pre-implementation status. Under these assumptions, the minimum detectable difference is given by:

$$MDD = [(t1 + t2) * SQRT\{ 2 * (var) * (1-rsq) \}] \ / \ [SQRT\{N\}]$$

where MDD equals the minimum detectable difference, t1 = the t-value for the desired precision standard, or 1.645 for a 95 percent one-tail test; t2 = the t-value corresponding to the desired "power" of the test, e.g., .842 for an 80 percent test. The term (var) is the assumed variance of the outcome variable. In the case of a dichotomous variable, it is (p)(1-p). The term (rsq) is the fraction of the variance in the post-implementation period explained (and thus controlled for) by pre-implementation status. It is assumed here to be 50 percent. (The 50 percent assumption for (rsq) is equivalent to assuming that the correlation between the pre-implementation and post-implementation observations on the same households is about .7.)

TABLE III.8

POWER CALCULATIONS FOR HEALTH VISITS
ANALYSIS BASED ON FULL SAMPLE

Participant Group Sample Size[a]	Comparison Group Sample Size[a]	Minimum Detectable Difference (numbers of visits)
1,200	1,200	0.21
1,400	1,400	0.20
1,600	1,600	0.18
1,800	1,800	0.17
2,000	2,000	0.16
2,200	2,200	0.16

[a] For comparability with other power tables, the samples sizes pertain to the entire sample, including households without children less than three years of age. In performing the calculations, we assumed that roughly half of the households would have children less than three years of age.

Note: Power calculations show the minimum difference that can be reliably detected in the number of physician visits per year by children less than three years of age. Based on tabulations of the 2002 Survey of Living Conditions, the calculations assume that the current mean number of visits for the poverty population is about 2 per year. The first entry on the right shows, for instance, that with a sample size of 1,400 households, we could be reasonably confident of our ability to detect a difference of .2 visits (i.e., a difference of 2 visits for participants as compared with 1.8 visits for the comparison group).

Table entries in the third column show "minimum detectable differences," which are defined as the effects in percentage points that can be detected with 80 percent power using a one-tail 95 percent confidence level test. To approximate the minimum detectable difference, we based the analysis on a difference-of-proportions test between participants and controls in the post-implementation period, with 50 percent of the variance of the outcome variable controlled by regressing observations on pre-implementation status. Under these assumptions, the minimum detectable difference is given by:

$$MDD = [(t1 + t2) * SQRT\{ 2 * (var) * (1\text{-}rsq) \}] \ / \ [SQRT\{N\}]$$

where MDD equals the minimum detectable difference, t1 = the t-value for the desired precision standard, or 1.645 for a 95 percent one-tail test; t2 = the t-value corresponding to the desired "power" of the test, e.g., .842 for an 80 percent test. The term (var) is the assumed variance of the outcome variable. In this case, we used the survey of Living Conditions 2002 to estimate the variance of the number of health visits for Jamaican households in the poorest consumption quintile. The resulting variance was 4.4 visits. The term (rsq) is the fraction of the variance in the post-implementation period explained (and thus controlled for) by pre-implementation status. It is assumed here to be 50 percent. (The 50 percent assumption for (rsq) is equivalent to assuming that the correlation between the pre-implementation and post-implementation observations on the same households is about .7.)

TABLE III.9

POWER CALCULATIONS FOR HEALTH VISITS
SUBSAMPLE ANALYSIS BASED ON ONE-THIRD OF SAMPLE

Participant Group Sample Size[a]	Comparison Group Sample Size[a]	Minimum Detectable Difference (numbers of visits)
400	400	0.37
500	500	0.33
550	550	0.31
600	600	0.30
650	650	0.29
700	700	0.28

[a] For comparability with other power tables, the samples sizes pertain to the entire sample, including households without children less than three years of age. In performing the calculations, we assumed that roughly half of the households would have children less than three years of age.

Note: Power calculations show the minimum difference that can be reliably detected in the number of physician visits per year by children less than three years of age. Based on tabulations of the 2002 Survey of Living Conditions, the calculations assume that the current mean number of visits for the poverty population is about 2 visits per year. The first entry on the right shows, for instance, that with a sample size of 600 households, we could be reasonably confident of our ability to detect a difference of .3 visits (i.e., a difference of 2 visits for participants as compared with 1.7 visits for the comparison group).

Table entries in the third column show "minimum detectable differences," which are defined as the effects in percentage points that can be detected with 80 percent power using a one-tail 95 percent confidence level test. To approximate the minimum detectable difference, we based the analysis on a difference-of-proportions test between participants and controls in the post-implementation period, with 50 percent of the variance of the outcome variable controlled by regressing observations on pre-implementation status. Under these assumptions, the minimum detectable difference is given by:

$$MDD = [(t1 + t2) * SQRT\{ 2 * (var) * (1\text{-}rsq) \}] \;\; / \;\; [SQRT\{N\}]$$

where MDD equals the minimum detectable difference, t1 = the t-value for the desired precision standard, or 1.645 for a 95 percent one-tail test; t2 = the t-value corresponding to the desired "power" of the test, e.g., .842 for an 80 percent test. The term (var) is the assumed variance of the outcome variable. In this case, we used the survey of Living Conditions 2002 to estimate the variance of the number of health visits for Jamaican households in the poorest consumption quintile. The resulting variance was 4.4 visits. The term (rsq) is the fraction of the variance in the post-implementation period explained (and thus controlled for) by pre-implementation status. It is assumed here to be 50 percent. (The 50 percent assumption for (rsq) is equivalent to assuming that the correlation between the pre-implementation and post-implementation observations on the same households is about .7.)

IV. APPROACH TO QUALITATIVE ANALYSIS

The qualitative analysis of PATH will allow us to explain in detail how the program's policies are implemented. It will also be useful in interpreting patterns observed in the impact analysis, adding depth to the evaluation findings. The analysis involves two assessments. The first will provide rapid feedback on program implementation and help build a better understanding of the interim evaluation results. The second assessment, broader in scope, will examine key implementation issues in greater depth.

We plan to select five sites in which to conduct the qualitative assessments. The sites will be located in different parts of Jamaica to make sure that our analyses reflect the implementation of the program island-wide. We plan to select one site in Kingston, two sites in smaller cities, and two sties in rural towns.

We will rely on focus group sessions and executive interviews as the primary methods of data collection for the qualitative assessments. To ensure that data are collected consistently across all five sites and that the site visits yield answers to the policy questions of interest, we will develop protocols for use by all site visitors during the focus group sessions and executive interviews. The protocols will contain organized lists of open-ended questions and issues to be covered in the visits and will vary with respondent.

We are planning for two rounds of site visits, with each round conducted by Hope Enterprises, a firm with extensive experience in conducting qualitative research in Jamaica. Each site visit will involve one focus group with 8 to 10 program participants as well as executive interviews with program administrators in the local program office and personnel from a local payment agency, a local school, and a local health center. We estimate that each visit will

run for three full days. The information collected in the second round of visits will be used in the second qualitative assessment and the final evaluation report.

As summarized in Table IV.1, the qualitative assessments will focus on six broad areas of program implementation: (1) attracting and selecting eligible people into the program, (2) conveying information to participants about expectations and requirements, (3) operational issues, (4) changing behavior, (5) monitoring and enforcing program requirements, and (6) community context and response.

1. Attracting and Selecting Eligible People into the Program

One important objective of the social safety net reform in general and of the PATH program in particular is to improve the targeting of services to program participants. While the *quantitative* analyses performed in the baseline report will provide measures of how well the program targets the poor, the *qualitative* assessments will help us understand more fully households' participation in the PATH program and suggest ways of improving the targeting (if necessary).

2. Conveying Information to Participants about Expectations and Requirements

An important component of PATH is the link between the receipt of welfare benefits and investments in human capital, especially through school attendance and preventive health care visits. Given that this link is a new feature of Jamaica's social safety net, the success of the PATH program in positively affecting education and health outcomes depends partly on participants' awareness of, and response to, program expectations and requirements. Hence, an important component of the qualitative assessment will be an examination of the extent to which participants understand program requirements and know where and how to get more information about PATH.

TABLE IV.1

PLAN FOR QUALITATIVE ASSESSMENT

Areas of Implementation	Participants' Focus Groups	PATH Module (First Baseline Survey)	Executive Interviews Program Administrators	Visits to Local Payment Agencies	Visits to Schools	Visits to Health Centers
1 Attracting and selecting eligible people into the program						
What are the perceptions of stakeholders regarding the selection process?	X	X	X			
How did participants learn about the program?	X	X				
What are the perceptions of stakeholders regarding the effectiveness of the appeals committee?	X		X			
2 Conveying information to participants about expectations and requirements						
Do program participants have a good understanding of the selection criteria and of how the program works?	X		X	X		
Do participants know where to ask for additional information about program requirements?	X		X	X	X	X
How well are potential participants informed of the availability of the education grants?	X		X		X	
How well are potential participants informed of the availability of the health grants?	X		X			X
3 Operational issues						
Are there major bottlenecks in program implementation (e.g., payment delays, program outreach, response to complaints, supply-side constraints in service delivery, updating changes in household eligibility, and so forth)?	X		X	X	X	X
What is the level of participant satisfaction with the overall program and its different components in terms of both procedures and service delivery?	X	X	X	X		

TABLE IV.1 (*continued*)

Areas of Implementation	Participants' Focus Groups	PATH Module (First Baseline Survey)	Executive Interviews Program Administrators	Visits to Local Payment Agencies	Visits to Schools	Visits to Health Centers
What are the perceptions of the program stakeholders regarding the operation of the education grants component of the program?	X		X		X	
What are the perceptions of the program stakeholders regarding the operation of the health grants component of the program?	X		X			X
4 Changing behavior						
Are participants changing their behavior in response to the child assistance grants? Are they sending their children to school more often? Are they taking their children more frequently to health centers for preventive health care?	X		X		X	X
Are participant adults changing their behavior in response to the social assistance grants? Are they visiting health centers regularly?	X	X	X	X		X
Have the participating youth changed their attitude toward teenage pregnancy and involvement in violent acts or criminal activities? Have there been any changes in the relationships between members of participating households?	X					X
To what extent do potential participants think that the education grants create substantial financial incentives for the desired behavioral response?	X	X	X		X	
To what extent do potential participants think that the health grants create substantial financial incentives for the desired behavioral response?	X		X			X
To what extent do potential participants think that the social assistance grants to adults create substantial financial incentives for the desired behavioral response?		X	X			X
5 Monitoring and enforcing program requirements						
How does the agency monitor attendance at schools and clinics?	X		X		X	X
How much of a burden to schools and clinics is this process?					X	X

TABLE IV.1 (*continued*)

Areas of Implementation	Participants' Focus Groups	PATH Module (First Baseline Survey)	Executive Interviews Program Administrators	Visits to Local Payment Agencies	Visits to Schools	Visits to Health Centers
Is the information from monitoring used in enforcement?	X		X			
Have noncompliant participants been notified that they are not complying and that they need to do so in order to receive cash assistance?	X	X				
Under what conditions does noncompliance lead to a reduction or termination of benefits?	X	X	X			
Is the monitoring and enforcement process perceived by participants as equitable?	X	X	X			
6 Community context and response (supply)						
Has the quality of education services changed as a result of the increased demand generated by the PATH program?	X				X	
Is there unmet demand for education services?	X				X	
Has the quality of health services changed as a result of the increased demand generated by the PATH program?	X					X
Is there unmet demand for health services?	X					X

3. Operational Issues

The implementation of any policy initiative is likely to involve operational challenges. In this third area of analysis, we plan to explore whether there are any major bottlenecks in program implementation (i.e., payment delay, program outreach, response to complaints, supply-side constraints in service delivery, updating changes in household eligibility, and so forth). We will also explore the level of participant satisfaction with the overall program and its various components. We will examine the perceptions of other key program stakeholders. Findings from our inquiries can be used to improve program implementation where needed.

4. Changing Behavior

A major objective of the PATH program is to improve the human capital of Jamaican households by providing program participants with financial incentives to attend school and obtain preventive health care. The impact analysis will quantify the extent to which the program is succeeding in enhancing human capital while the qualitative analysis will provide insight into program stakeholders' perceptions with respect to possible changes in the behavior of beneficiaries. Such perceptions will be important in interpreting and understanding the findings from the quantitative analysis.

5. Monitoring and Enforcing Program Requirements

We will explore the extent to which the program is succeeding in monitoring and enforcing requirements related to school attendance and preventive health care. We will assess the extent to which information relevant to program monitoring is being collected and used to enforce program requirements. We will also examine participants' perceptions about the extent to which the process of monitoring is fair and equitable.

6. Community Context and Response

If the program can increase rates of school attendance and the frequency of visits to health centers, it could conceivably affect the supply of education and health services. We will determine the extent of any unmet demand for education or health services and whether any PATH-generated increase for such services has affected the quality of services.