Title: Evaluating the impact of community-based interventions on schooling outcomes among orphans and vulnerable children in Lusaka, Zambia

Authors:
Minki Chatterji, Constella Futures
Nancy Murray, Constella Futures
Kathy Buek, Constella Futures
Yvonne Mulenga, Project Concern International Zambia
Tom Ventimiglia, Project Concern International Zambia
Paul Hutchinson, Tulane University School of Public Health and Tropical Medicine

Rationale and background

Worldwide, the number of children under age 18 who have lost one or both parents to AIDS stands at more than 14.3 million (Children on the Brink, 2004). The vast majority of these children live in sub-Saharan Africa. Despite the recognition of the magnitude and negative consequences of this problem, there is little empirical evidence on "what works" to improve schooling outcomes among children affected by HIV and AIDS. Governments and program managers need comprehensive information on improving schooling outcomes among orphans and vulnerable children. Data on effectiveness to improve the lives of children can help donors, policy-makers, and program managers make better informed decisions on the allocation of scarce resources.

To fill this knowledge gap, the USAID funded Community REACH and MEASURE Evaluation projects collaborated with Project Concern International Zambia and Bwafwano, a local Zambian NGO, to evaluate the impact of Bwafwano's interventions on schooling and other outcomes among orphans and vulnerable children.

Bwafwano has been working in the Chipata and Ngwerere catchment areas in peri-urban Lusaka with technical assistance from PCI Zambia since 1996. Similar to much of Zambia, HIV prevalence in these areas is very high, and there are large numbers of orphaned children. There are also high rates of poverty and unemployment, and very limited health and educational facilities. The Bwafwano program, however, is one of the most comprehensive of its kind. Bwafwano runs a community school, health clinic, and counselling service at its community center.

Bwafwano selects beneficiaries for its program through various mechanisms such as home-based caregivers for PLWHA, community OVC committees, and self-referrals. After OVC have been identified, the Bwafwano OVC Outreach Officer conducts a home assessment visit to assess the vulnerability of the OVC. Bwafwano uses this information to determine the type of service to provide for the child (e.g community school, health, psychosocial counseling etc.) After this home assessment visit, the child is registered with Bwafwano.

Many of these intervention children of primary school age attend Bwafwano's community school.   Other children receive assistance from Bwafwano to attend

government schools. The focus of this paper is to evaluate the effectiveness of Bwafwano's interventions in improving school outcomes among intervention children.

Research Questions

1. Do Bwafwano's educational and other interventions increase the likelihood that intervention children will be enrolled in school?

2. Do Bwafwano's educational and other interventions increase the likelihood that intervention children will be at the correct age for grade?

3. Are there differential impacts of these interventions on educational outcomes depending on the orphanhood status and sex of the child?

Study Design

The research design used in this study to assess the effects of the intervention is a modified quasi-experimental pre-test/post-test study design. Intervention group households with orphans or vulnerable children receiving interventions (selected from project registers) are being compared to a comparison group of households selected using a "nearest neighbor" approach.

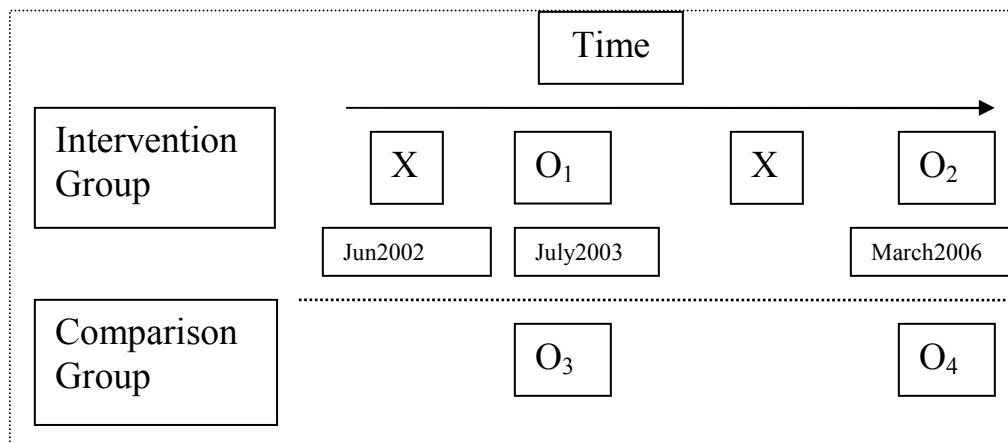**Figure 1: Modified quasi-experimental pre-test/post test study design**

Figure 1 above illustrates our study design. The interventions, represented by "X" in the diagram, were ongoing prior to baseline data collection. "O1" and "O3" represent the data points obtained from baseline data collection in July 2003. The interventions continued after baseline data collection as represented by "X". "O2" and "O4" signify data points that were collected during endline data collection in 2006. The dotted line

represents that the comparison group was not randomized since we utilized the nearest neighbor approach.

Data

The USAID-funded Community REACH project, in collaboration with Project Concern International Zambia (PCIZ), collected baseline data on exposure to interventions targeting orphans, and on a variety of health, psychosocial, economic, and educational outcomes among children and adolescents aged 6-19 in peri-urban Lusaka, Zambia. Baseline data was collected in June-September 2003.   2,302 children and adolescents aged 6-19 were interviewed at baseline. The intervention group consisted of 1246 children, and 1056 children were in the comparison group.

The endline survey was conducted by MEASURE Evaluation, Project Concern International and Bwafwano in March-May 2006. Approximately 65 percent (1,495) of the original 2,302 children were re-interviewed. Additionally, 1,610 "new" children were interviewed during the endline survey. Thus, the total sample size for the endline survey was 3,105, and the age range for these children was 8-22. 1,512 children were in the intervention group and 1,593 were in the comparison group.

In the following discussion, two datasets, the complete sample and the sub-sample, will be referred to. The complete sample contains all 5,407 observations from both the baseline and endline surveys. The sub-sample of children interviewed during both rounds of data collection includes 1,495 cases. Each of these cases include observations at baseline and endline.

Table 1: Sample sizes for baseline and endline surveys for Bwafwano evaluation conducted among children in peri-urban Lusaka, Zambia

Baseline sample 2003	
Children interviewed at baseline	2,302
Endline sample 2006	
Children re-interviewed at endline	1,495 (65% of baseline sample)
Children interviewed at endline only	1,610
Total endline sample	3,105

Information related to education that was included in the questionnaire include: a) Ever attended school, b) Current school attendance, c) Age of child when attending grade/level, d) Highest grade or level attended, e) Age at which child stopped attending school, and f) Primary reason for school discontinuation. The data also include information regarding the survival status of both parents and the year of death for those parents who have died

Methods:

Two methods of multivariate data analysis will be used: 1) Pooled cross-sectional and 2) Longitudinal. The outcome variables of interest in both analyses are: 1) whether or not the child is currently in school and 2) whether or not the child is at the proper grade/level for age or higher.

In both the pooled cross-sectional and longitudinal models, difference-in-differences estimators will be used to isolate program effects for Bwafwano participants relative to non-participants. This "differences in differences" model will test for significant changes in schooling outcomes for the program group relative to the non-program group controlling for initial differences and secular time trends. This is a test of significance on the variable interacting program and year.

Pooled cross-sectional analyses

The explanatory variables to be used in these analyses will be: age, sex, orphanhood status, household socioeconomic status, relationship to caregiver, program participation, year (0 if baseline, 1 if endline), and an interaction term (program participation multiplied by year).

The analyses will be run on two samples: 1) the complete sample and 2) the sub-sample of children interviewed at baseline and at endline. The analyses will be run on both samples in the event that the samples (baseline versus endline) have changed over time.

Longitudinal

The outcome variables (currently in-school and age for grade) will be analyzed as a function of program participation and other time-varying covariates, such as orphanhood status, household socioeconomic status, and relationship to caregiver, using the sub-sample of children interviewed at baseline and at endline. The analyses will be stratified by sex and possibly age group, depending on sample sizes.