



EVALUATION: AN EVALUATION OF THE PEPFAR-FUNDED *FORÇA À COMUNIDADE E CRIANÇAS (FCC)* PROGRAM IN MOZAMBIQUE

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Cover photo: FCC-evaluation collaborators at a health clinic in Mozambique that provides health services that include HIV/AIDS testing and treatment. Photo provided by the University of Michigan research team.

EVALUATION

AN EVALUATION OF THE PEPFAR-FUNDED FORÇA À COMUNIDADE E CRIANÇAS (FCC) PROGRAM IN MOZAMBIQUE

Abstract

This evaluation of the PEPFAR-funded Força à Comunidade e Crianças (FCC) program was a randomized controlled trial (RCT) designed to identify and measure the program's direct and indirect impacts on households with orphans and vulnerable children (OVCs) in Mozambique. Outcomes of interest included health care utilization, health outcomes, education outcomes, household economic conditions, the ability to cope with shocks and the extent to which any program impacts spilled over to households not directly enrolled. The results show that the FCC program in Mozambique had no positive impacts for any of its intermediate results and no observable impacts in nearly all outcomes of interest. The evaluation did find that the FCC program had negative outcomes in the form of reduced rates of HIV testing, reduced HIV-related knowledge, and an increase in stigmatizing attitudes about HIV. The evidence from this evaluation suggests that FCC and similar multifaceted programs may be ineffective at accomplishing their purpose or may be unintentionally adding to the challenge of responding to HIV/AIDS in Africa.

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ACRONYMS

ART	Anti-retroviral therapy
CCPC	Community Child Protection Committees
CCW	Case Care Worker
CRC	Child Rights Clubs
FCC	Força à Comunidade e Crianças (Strengthening Communities and Children)
IRB	Institutional Review Board
MMAS	Ministry of Woman and Social Action's
NBER	National Bureau of Economic Research
NGO	Non-Governmental Organization
OVC	Orphans and Vulnerable Children
PEPFAR	President's Emergency Plan for AIDS Relief
PII	Personally-Identifiable Information
RCT	Randomized Controlled Trial
SDSMAS	Directorates for Health, Women and Social Action
SFCS-OVC	USAID Strengthening Family and Community Support to Orphans and Vulnerable Children Program
SHNS	School Health and Nutrition Assessments
USAID	United States Agency for International Development
VA	Vulnerability Assessment
VSL	Village savings and loan
WEI/B	World Education Inc./Bantwana

I EXECUTIVE SUMMARY

PURPOSE AND BACKGROUND

The President's Emergency Plan for AIDS Relief (PEPFAR), initiated in 2003, is the U.S. Government's most important programmatic response to the international HIV/AIDS crisis. PEPFAR mandates part of its funding be devoted to programs benefiting children orphaned or made vulnerable (OVC) by HIV/AIDS.

The PEPFAR-funded program Força à Comunidade e Crianças (FCC) in Mozambique began in 2017 as a five-year cooperative agreement between USAID and World Education Initiative (WEI)/Bantwana and has since ended. FCC aimed to improve the health, education, and overall well-being of OVCs in selected districts in Sofala, Manica, Zambezia, and Gaza provinces. FCC also provided referrals and treatment follow-up for health clinic visits for HIV testing and anti-retroviral therapy (ART) and supportive related activities.

PEPFAR-funded programs similar to FCC have taken an integrated approach to supporting OVCs. Interventions have targeted children, families, and communities. They have targeted children's needs at different developmental stages and have been connected to other development programs related to education, nutrition, and household economic development. In fiscal year 2016, PEPFAR OVC programs supported 6.2 million OVCs and their caregivers worldwide.

The purpose of this USAID-funded evaluation of the FCC program in Mozambique was to identify and measure the direct and indirect impacts of the FCC program on households in Mozambique communities where the programming takes place.

EVALUATION QUESTIONS

This evaluation measured the impacts of the FCC program in Mozambique across a selection of specified outcomes:¹

- Health care utilization (health center visits, HIV testing, diagnosis, and treatment)
- Health outcomes (anthropometrics, morbidity, mortality)
- Education outcomes (attendance, performance, grade progression)
- Household economic conditions (investment in agricultural and non-agricultural activities, use of modern agricultural inputs, farm income, non-farm income, consumption per capita)
- If the economic strengthening interventions in the FCC program affect household ability to cope with health and other (e.g., agricultural, weather) types of shocks. If so, determine what financial instruments households use to cope with shocks (credit, savings, asset accumulation and decumulation).
- The extent to which FCC-program impacts spilled over to households

¹ See Annex for the full evaluation Scope of Work.

who are not directly enrolled in FCC programming.

METHODS

We designed and implemented a randomized controlled trial (RCT) to identify and measure these impacts. The RCT methodology is the gold-standard in impact evaluation. In an RCT, the total sample of participating households are selected based on their similarities of average baseline characteristics. They are then randomly assigned either to a group that receives programming (treatment) or a group that does not (control). Any differences in impacts between the two groups can be attributed to the programming itself.

In this FCC program evaluation, we identified a total sample of 3,658 households across the Manica, Sofala, and Zambezia provinces in Mozambique. The sample includes households with at least one OVC member as identified by the survey procedures.

Randomization for the Treatment Group and Control Group was cluster randomized at the community level. Half of the communities were randomly assigned to receive the FCC program. Communities not selected to receive the FCC program formed the Control Group.

Within the Treatment communities, we randomly assigned half of households to receive FCC programming (FCC-enrolled). The remaining households (FCC-ambient) did not directly receive FCC programming but the program took place in their communities. This further randomization made it possible to measure any spillovers from households who directly received FCC programming to households who did not.

FINDINGS

For nearly every outcome of interest, we found no statistically significant impacts of the FCC program in Mozambique. This included for nearly all impacts on health care utilization, health outcomes, education outcomes, and household economic conditions. With no detected impacts on these primary outcomes, the evaluation also did not detect any spillover impacts from FCC-enrolled households to FCC-ambient households.

To identify suggestive mechanisms for this lack of impacts, we surveyed the total sample of households about their contact with the FCC program. FCC-enrolled households were 10.7% more likely to have received services from FCC than households in the Control Group, indicating that the FCC program did reach households in treatment communities.

We did identify negative impacts on rates of HIV testing. In addition to self-reported testing (which may be biased), the evaluation measured HIV testing rates with a low-value monetary coupon (50 MZN/\$0.78) for directly observable verification and found that based on this coupon-based measure FCC-enrolled households had 10.5% lower rates of HIV testing than households in the Control Group.

Potential underlying causes for these reduced rates of HIV testing were revealed through detailed surveys with all study participants to measure their knowledge and attitudes related to HIV. Among FCC-enrolled households we identified an increase in HIV-related misinformation and stigmatizing attitudes

that may have driven the decline in HIV testing.

We designed an additional intervention after completing the primary FCC evaluation that also indicated increased HIV misinformation and stigma associated with FCC enrollment may have caused the reduction in HIV testing. The outcome of interest for these “minitreatments” was directly observed coupon-based HIV testing, which was the only outcome collected after the main FCC program evaluation endline survey. The result showed that only the high-value HIV-testing coupon (double the value of the original coupon) had a statistically significant effect on HIV testing rates. The effect amounts to 7.29 percentage points above the control-group average of 26.3%.

CONCLUSIONS

The results of this evaluation show that the FCC program in Mozambique had no positive impacts for any of its intermediate results. The evidence also suggests that more research is urgently needed to understand the causes that link programming like FCC and potential unintended negative outcomes such as increased stigmatizing attitudes and misinformation about HIV that may play a role in reduced rates of HIV testing.

These results from the evaluation of the FCC program in Mozambique may be common for similar multifaceted HIV/AIDS programs across Sub-Saharan Africa. The evidence from this evaluation suggests that FCC and similar multifaceted programs are ineffective at accomplishing their purpose and may be unintentionally adding to the challenge of responding to HIV/AIDS in Africa.

2 INTRODUCTION

PURPOSE, AUDIENCE AND ANTICIPATED USES OF THIS EVALUATION

The purpose of this large-scale randomized evaluation was to measure the impacts of the Força à Comunidade e Crianças¹ (FCC) program across three provinces in Mozambique.

The audience for this evaluation includes a diverse range of stakeholders, including USAID, FCC program implementing partners, other international development agencies, NGOs, and national governments seeking to provide similar programming.

We anticipate that this evaluation of the FCC program in Mozambique will be used to strengthen policy and program decision-making within Mozambique. The results of this evaluation can also influence future decisions by USAID and PEPFAR globally, the U.S. Government as a whole, and among public health and development agencies worldwide to strengthen programming to combat the HIV/AIDS crisis.

This evaluation also contributes evidence on the optimal design of this and similar public health and development interventions. In particular, understanding the extent of spillovers from direct program beneficiaries to households who are not included in the program provides guidance on the share of a population that needs to be enrolled for the program to have impacts.

While important to study in their own right due to their widespread footprint in Sub-Saharan Africa, PEPFAR-funded programs are also important to study as examples of multifaceted or integrated development programs that implement multiple interventions simultaneously. Program cost-effectiveness can be improved by focusing on program subcomponents that are driving overall impacts, and eliminating elements that are relatively ineffective.

This evaluation of the FCC program in Mozambique was funded by USAID through an Associate Award to the Feed the Future Innovation Lab for Assets and Market Access at the University of California, Davis (grant numbers AID-OAA-L-12-00001, AID-OAA-LA-16-0004, and AID391A1500006 for total funding of \$1,691,270). The evaluation was conducted by a research team led from the University of Michigan.

This evaluation was carried out with the support and collaboration of the USAID Mission in Mozambique, which manages a portfolio of PEPFAR-funded projects. The evaluation also had the approval and support of the Mozambique Ministry of Health and the health directorates of Manica, Sofala, and Zambezia provinces where the evaluation took place.

THE PEPFAR-FUNDED FORÇA À COMUNIDADE E CRIANÇAS (FCC) PROGRAM IN MOZAMBIQUE

¹ “Strengthening Communities and Children”

The President's Emergency Plan for AIDS Relief (PEPFAR), initiated in 2003, is the U.S. Government's most important programmatic response to the international HIV/AIDS crisis. Recognizing that children are among the most vulnerable populations in the context of the HIV/AIDS pandemic, PEPFAR mandates part of its funding² be devoted to programs benefiting children orphaned³ or made vulnerable by HIV/AIDS ("orphans and vulnerable children," or OVCs⁴).

PEPFAR programs for OVCs have taken an integrated approach. Interventions have targeted children, families, and communities. They have targeted children's needs at different developmental stages and have been connected to other development programs related to education, nutrition, and household economic development.⁵ In fiscal year 2016, the year before FCC began, PEPFAR OVC programs supported 6.2 million OVCs and their caregivers worldwide.⁶

Mozambique is one of 15 focus countries under PEPFAR, which is implemented as an integrated response by USAID, U.S. Center for Disease Control and Prevention (CDC), U.S. Department of Defense (DOD), U.S. Department of State, and Peace Corps. FCC was mostly funded through PEPFAR and therefore was linked to PEPFAR Mozambique Partnership Framework Goal 1 - Reduce new HIV infections in Mozambique; Goal 4 - Improve access to quality HIV treatment services for adults and children; and, Goal 5 - Ensure care and support for pregnant women, adults and children infected or affected by HIV in communities and health and social welfare systems. The USAID SFCS-OVC program supports PEPFAR's overall mandate to strengthen the capacity of families and communities to care for OVCs.

The PEPFAR-funded FCC program began implementation in Mozambique in 2017 as a five-year cooperative agreement between USAID and World Education Initiative (WEI) / Bantwana.⁷ FCC aimed to improve health, education, and overall well-being of OVCs in selected districts in Sofala, Manica, Zambezia, and Gaza provinces. With an objective to improve families' and communities' ability to support, protect, and care for OVCs and their caregivers, the FCC program had five components, as follows:

1. Strengthened coordination and harmonization of care, protection and support services for OVC households at the district and community levels
2. Increased access to education and improved learning outcomes for OVCs
3. Increased access to healthcare and nutritional support for OVCs and caregivers
4. Improved coping mechanisms for OVCs and caregivers
5. Improved socio-economic status of OVC households

The other FCC program components were as follows. These other

FCC Program Intermediate Results

IR1: Strengthened coordination and harmonization of care, protection and support services for OVC households at the district and community level

IR2: Increased access to education and improved learning outcomes for OVC

IR3: Increased access to healthcare and nutritional support for OVC and caregivers

IR4: Improved coping mechanisms for OVCs and caregivers

IR5: Improved socio-economic status of OVC households

² In PEPFAR's 2008 reauthorization, 10% of funds were mandated to be spent on assistance to OVCs. PEPFAR defines children as those below 18 years of age. These funds amounted to more than \$1 billion in 2006-09, and \$672 million in 2010-11. (PEPFAR Operational Plans for fiscal years 2006-2011, available at <http://www.pepfar.gov>.) In the 2015 fiscal year, PEPFAR spent \$218 million on OVC programming (PEPFAR 2017).

³ An "orphan" is defined by the UN as a child who has lost one or both parents. An estimated 13.4 million children and adolescents (0-17 years of age) worldwide had lost one or both parents to AIDS as of 2015. More than 80% of these children (10.9 million) live in sub-Saharan Africa (UNICEF 2016).

⁴ Useful reviews of research on OVCs include Bryant and Beard (2016), Goldberg and Short (2016), Nyberg et al (2012), and Shann et al (2013). See also Evans and Miguel (2007), Case et al (2004), Larson et al (2013), and Whetten et al (2014).

⁵ PEPFAR 2006

⁶ PEPFAR 2017

⁷ USAID RFA-656-14-000001, up to \$15,864,752 for the five-year period; For more information about FCC, visit: <https://bantwana.org/project/fcc/>.

components reached only a relatively small fraction of beneficiaries reached by home visits.

- Education subsidies for girls: The FCC program provided a limited amount of funding to support school participation among girls considered particularly at-risk of dropping out of school. LIPs were to select the most at-risk girls in a particular community after consultation with school officials and the CCPC. Beneficiary secondary school-age girls were to each receive up to US\$75 in school fees, elementary school-age girls up to US\$50 in school materials (books and uniforms). The exact amounts and funded items were to vary by community and LIP.
- Child Rights Clubs (CRCs): These were school-based clubs for both girls and boys aiming to equip children with knowledge and skills related to child protection, gender-based violence, and psychosocial support. Topics covered included early marriage, teen pregnancy, reproductive and sexual health, and HIV/AIDS. Participants were to learn how to report abuse and how to make healthy choices. Activities were to be child-facilitated with adult oversight. Girls concurrently also took part in associated “Girls’ Empowerment Clubs” which provided additional mentoring and support tailored to girls.
- Health and Nutrition Assessments: Using an established protocol, LIP staff conducted nutritional screenings of OVCs aged 6 months to 14 years. Screenings occurred in school and community settings. Children identified as malnourished may have been provided with food supplements for a limited period, and the most severely malnourished were referred to health clinics.
- Youth Economic Strengthening (YES) clubs: YES clubs were a community-based financial education program for both girls and boys who are out-of-school OVCs aged 15-18. Separate clubs were established for girls and boys. The program provided livelihood and entrepreneurship training, aimed at small-scale commercial rather than subsistence agriculture.
- Village Savings and Loan (VSL) groups: VSL programs involved facilitating and training individuals to organize themselves into simple savings and credit groups, with the aim of improving access to savings and credit in populations that were poorly served by formal institutions. Members could take loans from the communal pool of savings, upon review and approval by the group. Loans were repaid with interest, at an interest rate decided upon by the group. Groups managed their own funds, which were all internally generated from savings and interest earnings from loans. LIP staff were to form VSL groups with a mixture of OVC and non-OVC households, as well as youth participating in YES clubs.

SEEKING TO ADDRESS THE HIV/AIDS CRISIS IN SUB-SAHARAN AFRICA

Out of an estimated 36.9 million people living with HIV worldwide in 2017, 25.7 million were in Sub-Saharan Africa.⁸ The region also accounted for a dominant share of new HIV infections: 1.2 million out of a global total of 1.8 million in that year.

In Mozambique in 2016, 1.8 million people out of a population of 28.8 million were living with HIV (6% of the population), out of which 200,000 were aged 14 or younger. The country had an estimated 83,000 new HIV infections annually, of which one-sixth were children. Mozambique recorded 62,000 AIDS-related deaths in 2016. Poor access to anti-retroviral therapy (ART) contributes to AIDS-related morbidity and mortality, as well as

⁸ UNAIDS 2017

⁹ Ibid.

HIV transmission to other adults as well as from mothers to children.⁹ In Mozambique, slightly more than half of HIV-infected patients in Mozambique had access to ART.

FCC provided an interrelated set of health, education, and economic interventions to OVCs and their households. A key rationale for the multifaceted program design of FCC and similar programs was that health, education, and economic program components are mutually reinforcing. FCC had programs in primary and secondary schools, with community health workers deployed in surrounding villages.

FCC provided a bundle of interrelated treatments in areas of health, nutrition, education, and microfinance (savings). In the health realm, FCC identified and referred individuals to public health clinics for HIV testing and ART treatments with intensive multi-level follow-up and coordination between government public health administration, community organizations, and schools. Educational interventions included school grants conditional on meeting OVC enrollment objectives, training of school councils, and school-based networks to provide psychosocial support for OVCs and their caregivers. Economic interventions involved village savings and loan (VSL) programs to improve income, consumption and risk-coping in OVC households.

EVALUATING THE IMPACTS OF FCC IN MOZAMBIQUE

The primary question in this evaluation was: what are the direct and indirect impacts of the FCC program on households in Mozambique communities where the programming takes place?

To answer this question, we designed a RCT to compare outcomes between households who were directly enrolled in the program (FCC-enrolled), households who were not enrolled but who lived in communities where programming took place (FCC-ambient) and households residing in communities that received no FCC programming (Control). Randomly assigning comparable households across these three groups made it possible to identify the program's causal impacts.

This evaluation is the first large-scale randomized study of a multifaceted, community-level PEPFAR program. The evaluation measured the overall impact of the FCC program on health care utilization, health outcomes, education outcomes, household economic conditions, and overall wellbeing. The program was randomly assigned at the community level, with 38 treatment and 38 control communities, and included roughly 3,800 individual households.

This evaluation sought to measure the following impacts of the FCC program:

- Health care utilization (health center visits, HIV testing, diagnosis, and treatment)
- Health outcomes (anthropometrics, morbidity, mortality)
- Education outcomes (attendance, performance, grade progression)
- Household economic conditions (investment in agricultural and non-agricultural activities, use of modern agricultural inputs, farm income, non-farm income, consumption per capita)
- If the economic strengthening interventions in the FCC program affect household ability to cope with health and other (e.g., agricultural, weather) types of shocks. If so, determine what financial instruments households use to cope with shocks (credit, savings, asset accumulation and decumulation).
- The extent to which FCC-program impacts spilled over to households who are not directly enrolled in FCC programming.

3 METHODOLOGY

CONTRIBUTIONS TO EVIDENCE

To our knowledge, this is the first large-scale RCT measuring the impact of a PEPFAR program, whether in the OVC context or otherwise. Past studies of PEPFAR programs have not been able to exploit a prospectively randomized research design, and instead have relied on retrospective analysis with control or comparison groups that were not randomly selected. In addition, past studies have not tracked defined groups of individuals over time (from before to after program implementation). This study is also one of only a few randomized evaluations of multifaceted or bundled development interventions in any context.

EVALUATION DESIGN

Pre-Analysis Plan (PAP)¹ Registration

The Populated PAP document presents all pre-specified analyses described in the pre-analysis plan (PAP)² of the study “Direct and Spillover Impacts of a Community-Level HIV/AIDS Program: Evidence from a Randomized Controlled Trial in Mozambique,”³ registered on March 8, 2019 with the AEA RCT Registry (the American Economics Association’s registry for randomized controlled trials). This date was prior to the endline survey and HIV testing coupon redemption, which were carried out between May and November 2019.

We had previously submitted our study as a Pre-Results Review Paper to the *Journal of Development Economics* (JDE). The JDE refereeing process led to minor changes to our pre-specified analyses. Our study was accepted as a Pre-Results Review Paper at the JDE on July 22, 2019.⁴ We then uploaded the JDE Pre-Results Review Paper to our AEA RCT Registry as our second and final PAP on July 24, 2019.⁵

RANDOMIZATION

Figure 1 (below) displays the randomization design and timeline of the study. In November 2016, we randomly assigned 76 communities to be FCC Treatment

¹ For background on Populated PAPs, see Duflo et al. 2020.

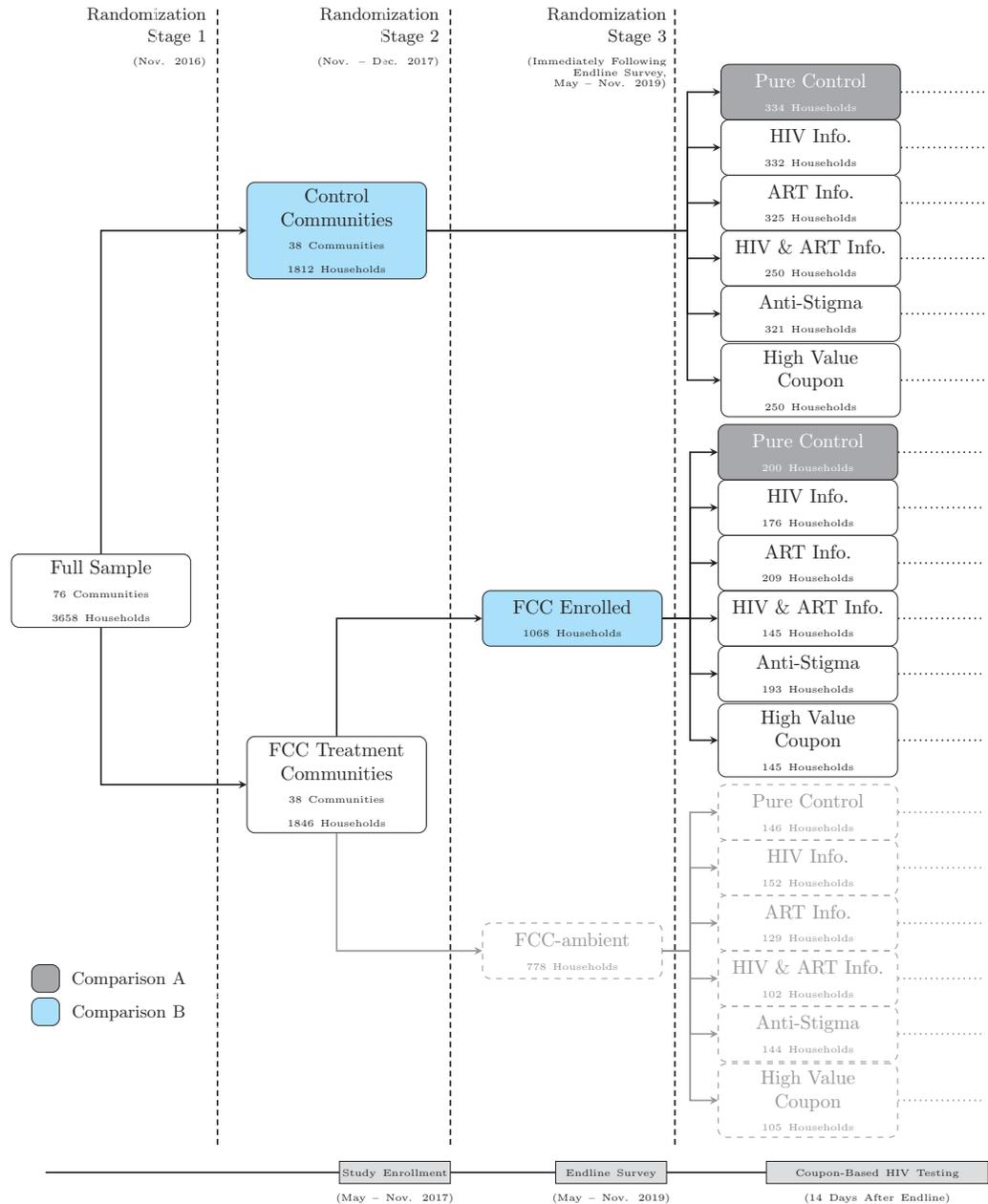
² The Populated PAP accompanies the research paper “Knowledge, Stigma, and HIV Testing: An Analysis of a Widespread HIV/AIDS Program” by the research team that conducted this evaluation. The results presented in this report were drawn from the Populated PAP and the above-referenced research paper. Both documents are available at <https://fordschool.umich.edu/mozambique-research/fcc-hiv-aids>.

³ AEA RCT Registry number AEARCTR-0003990. The full AEA RCT Registry record can be found at: <https://doi.org/10.1257/rct.3990-5.0>

⁴ Yang, D., et al. 2019. “Direct and Spillover Impacts of a Community-Level HIV/AIDS Program: Evidence from a Randomized Controlled Trial in Mozambique: Pre-Analysis Plan.”

⁵ Following acceptance based on pre-results review, the JDE allows authors to first submit the full-length paper, with results, to other journals. Further details are available at the JDE Pre-Results Review website <http://jde-preresultsreview.org/>.

Figure 1: Randomization Design and Timeline



communities or Control communities (Randomization Stage 1). WEI/Bantwana started setting up the FCC program in treatment communities starting in the first quarter of 2017, and enrolled households in the program through March 2018. We enrolled households in the study and implemented the baseline survey from May 2017 to March 2018.

In November and December 2017, households in treatment communities were randomly assigned to FCC-enrolled or FCC-ambient status (Randomization Stage 2). Immediately after this randomization, CCWs conducted home visits to FCC-enrolled households. We implemented the endline survey from May to November 2019.

At the end of the endline survey, we randomly assigned households to the minitreatments (Randomization Stage 3, detailed below) and offered all

households encouragement coupons for HIV testing. We collected the HIV testing encouragement coupons up to each community’s deadline (14 days after conclusion of the endline survey in a community).

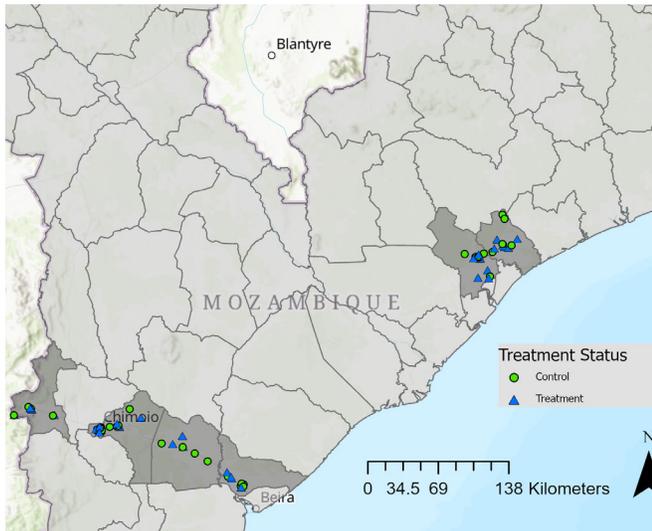
Randomization Stage I: Assigning FCC and Control Communities

The FCC program was a community-level intervention, so the first stage was random selection of communities to receive or not receive the FCC program. FCC activities were centered in primary and secondary schools, so geographic areas of interest were residential areas surrounding schools. We refer to areas surrounding schools simply as “communities,” each of which had a “focal school” where school-based program components were implemented.

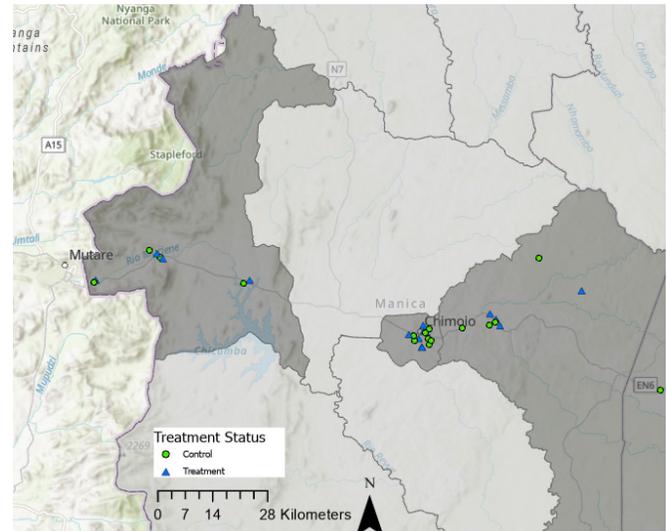
WEI/Bantwana consulted with local implementing partners (LIPs) and government officials in the three provinces and seven districts in which the FCC program was to be implemented to identify a set of 76 communities deemed eligible for the program. These communities were chosen on the basis

Figure 2: Map of Study Communities

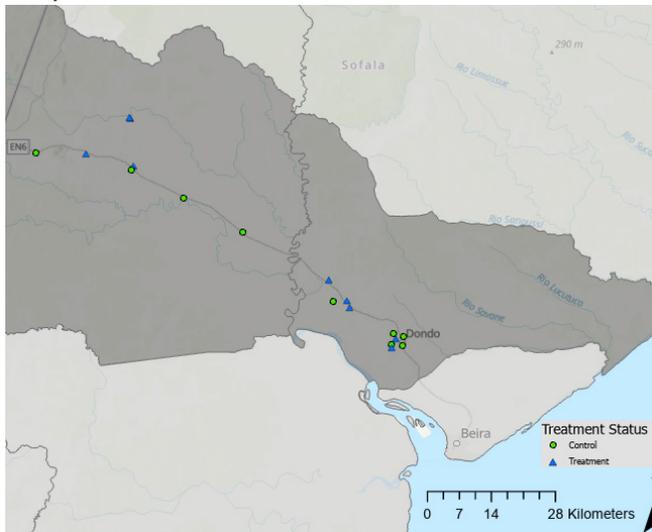
All Study Communities



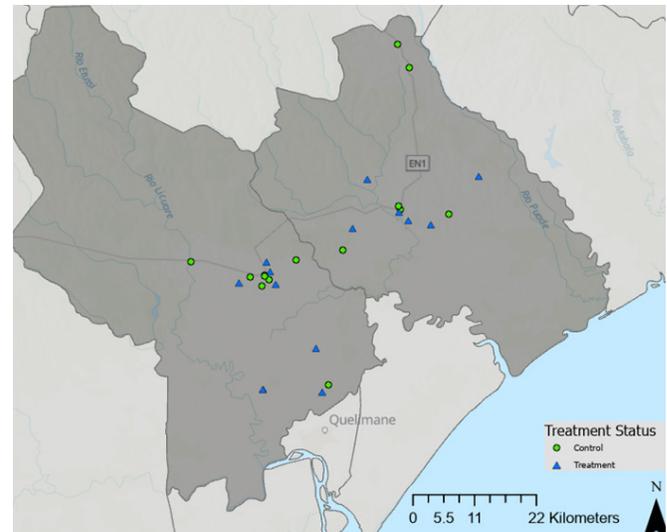
Study Communities in Manica Province



Study Communities in Sofala Province



Study Communities in Zambezia Province



of being geographically proximate to ART sites (health clinics offering HIV testing and treatment), having sufficient populations of OVCs and having no other active donor-funded HIV/AIDS programs. These 76 communities were then sorted into stratification cells of matched community pairs, which are sets of two communities that were very similar in terms of distance to ART sites, school type (secondary or primary), and student population size.

Within each matched pair, treatment status was randomly assigned to one community, with the other school assigned to control status. Randomization of treatment status within matched pairs helps ensure balance in baseline characteristics between treatment and control units so that comparisons can then be credibly interpreted as causal effects of the program.

This random assignment was carried out on the computer of one of the coauthors, one time, with no re-randomization. We communicated the result of the randomization to WEI/Bantwana in November 2016. The FCC program was then implemented in treatment communities and not in control communities.

Randomization Stage 2: FCC Enrollment within FCC Communities

The second stage of randomization, at the household level, was implemented only within treatment communities. This randomization stage was motivated by a concern of low statistical power for treatment effect estimates based on generally comparing households in treatment and control communities. This stage of randomization creates a subgroup of FCC-enrolled households within treatment communities with relatively high participation in the FCC program to ensure higher statistical power.

A subset of households was randomly assigned to be “FCC-enrolled” households. These households’ geographic (latitude and longitude) coordinates and household head’s name and contact information were provided to WEI/Bantwana and their LIPs. LIP staff (CCWs) then conducted household visits and individual assessments for FCC program subcomponents.

Random assignment of households to FCC-enrolled status was carried out in November and December 2017 on the computer of one of the co-authors, one time, with no re-randomization. Seven-twelfths (58.33%) of households in each community were assigned to FCC-enrolled status. Other households not randomly selected for direct enrollment, which we refer to as “FCC-ambient,” ended up being treated as well, but at lower rates.

DATA

Vulnerability Assessment & Household Enrollment

The target population of this study was OVCs and the households in which they lived. OVC households were identified via door-to-door enumeration with a predefined list of questions to identify OVCs. Due to the sensitive nature of such questions, the protocol for identifying OVCs and their households was designed in close consultation with the FCC program LIP organization and field-tested to ensure cultural acceptance.

Within both Treatment and Control communities, the baseline household data collection proceeded in several stages. First, 120 households were selected for administration of a vulnerability assessment (VA), the purpose of which was

to identify OVC households (intended beneficiaries of the FCC program). In communities surrounding eligible schools, households were selected for VAs using random-route sampling.⁶ The VA consisted of a short set of questions to determine households' OVC status.

Households were defined as OVC households if any of the following conditions were true: a grandparent was head of the household (with no parents present); the ratio of children to adults was greater than four; at least one school-aged child was not attending school; the household ate fewer than two meals per day; the household goes some days without food; the household has illegal income or no income; the household has a chronically ill member, an HIV infected member, or a member receiving ART; there are orphans in the household (one or both parents deceased); or an adult died of a chronic illness in the last five years.

We administered VA surveys to 10,056 households. Of these, we classified 71.7% as OVC households. These OVC households were the population of interest in this study.

Baseline Survey

We then selected a subset of households for administration of a household baseline survey. Within the set of OVC households in a community (typically numbering 80-90), 40 were randomly selected as baseline survey households. The baseline survey asked a comprehensive set of questions at household and individual levels on demographics, health (morbidity, mortality, and child anthropometric measurements), schooling, assets, income, labor supply, migration, financial access (credit and savings), and financial decision-making. It also included a comprehensive set of questions on beliefs about HIV, HIV testing and treatment, and sexual behavior.

These baseline data were mainly used to provide an understanding of the general characteristics of households in the sample. Because the baseline was not administered to all households, we make no use of it in our impact estimates. When examining balance across randomized treatment conditions, we focus on examining the eleven variables in the VA which are available for all households in the study.

Balance and Attrition

It is important to confirm the balance of baseline variables with respect to treatment assignment. We examined eleven variables that were collected during the vulnerability assessment survey during study enrollment (May-November 2017). We also examined whether there was any in-migration to communities related to treatment status. These are dependent variables our estimation. We report the results in Table 3. None of the coefficients on the Treatment or FCC-ambient coefficients are large or statistically significant at conventional levels. These results provide no indication of a substantial imbalance in baseline household characteristics or in in-migration related to treatment status.

⁶ From the focal school in each of 76 study communities, interviewers followed routing instructions and selection of households to interview. Directions were randomly assigned, as were distances between successive surveyed households. This procedure resulted in households distributed as far as two kilometers from the focal school in each community.

Another key question is whether success in locating households in the endline survey is affected by treatment status. The dependent variable mean in the control communities is 0.800 (an 80% rate of inclusion in the endline survey). The Treatment coefficient is small in magnitude and not statistically significantly different from zero at conventional levels. The coefficient on FCC-ambient status is positive and modest in size (0.032), and statistically significant at the 5% level.

These results indicate no concern with selection bias for our pre-specified primary co-efficient of interest (on Treatment). They do raise the possibility of selection bias due to differentially lower attrition related to FCC-ambient status. This should be kept in mind when interpreting coefficients on FCC-ambient status.

Endline Survey

The endline household survey was administered from May to November 2019. The endline survey collected data on an array of intermediate and final outcomes to understand the effects of the FCC program (both FCC-enrolled and FCC-ambient status). Communities were surveyed in the same order they were contacted for the vulnerability assessment and study enrollment in 2017-18. For budgetary reasons, we were unable to survey at endline all households who were administered the vulnerability assessment and enrolled in the study in 2017-18. We aimed for a sample of 60 households per community to include in the endline survey.

We first designated for inclusion in the endline survey all households that completed the baseline survey, numbering approximately 40 per community. (Recall that selection for the baseline survey among enrolled households was random, so these households should be representative.) We then randomly selected another 20 households from among households that had been administered only the VA but not the full baseline survey.

A total of 4,546 households (59.8 households per community) were targeted for endline surveying in May-November 2019. The sample for analysis in this paper are the 3,658 (80.5%) who we were able to reach in the endline survey in the first week of endline survey fieldwork in each community (the endline survey “first round”). There is no imbalance in survey success rates among FCC-enrolled households and Control households.

The 19.5% of households that we were not able to survey in the first few days were subject to intensive follow-up efforts some weeks later (the endline survey “intensive followup round”), and will be included in future papers that examine longer-term effects of the FCC program (as well as related work on impacts of Cyclone Idai). We eventually were able to find and survey 62.5% of these remaining households. These households surveyed in the “intensive follow-up round” cannot be included in this analysis because we do not have data for them on our primary outcome variable of interest, coupon-based HIV testing.

Redemption of the encouragement coupons for HIV-testing was organized by our research staff whom we could not afford to keep posted at local health clinics beyond the 14-day period after the endline survey “first round”. Households surveyed in the “intensive follow-up round” were not provided with the encouragement coupons for HIV testing.

Testing for Spillover Effects

When programs are implemented at the community level, it is important to understand the extent to which program benefits extend from direct program beneficiaries to those who are not directly included in the program (indirect beneficiaries). When spillovers are substantial, community programs may be able to achieve high levels of population coverage even with relatively low shares of the population being direct program beneficiaries. On the other hand, when spillovers are minimal or nonexistent, complete population coverage will require full enrollment of the population as program beneficiaries.

We studied such spillovers by randomizing individual households within treated communities to receive a home visit for evaluation and inclusion in appropriate FCC program components. Other households in the community who were not assigned to a home visit will have had much lower rates of program inclusion. Data on household geo-coordinates and on their social network connections reveal whether such spillovers operate via geographic proximity or social network links.

We estimate all primary and secondary FCC-program impacts for FCC-enrolled as well as for FCC-ambient households. The outcome variables are identical for both populations. The comparison group for both FCC-enrolled and FCC-ambient households is households in Control communities that had no contact with the FCC program. Differences in impacts between these two Treatment groups relative to households in Control communities show any spillover impacts of direct FCC-program enrollment.

Logistics & Quality Control

All surveys were conducted in the main local languages spoken in the study districts by a Mozambican survey research firm under the supervision of the co-authors. The survey respondent for household-level questions was the adult (aged above 18) in the household with primary responsibility for care of the household's children. Other adult household members were administered certain survey sections (such as on health and sexual activity) with individual responses, if they were present at the time of the survey. For children (aged 0-18), their parent or guardian was asked to answer health questions on their behalf.

After the completion of baseline household surveys in study communities, a final stage of data collection was carried out by independent auditors, who revisited all households who had been administered baseline surveys. Auditors' first role was to check for fraud on the part of survey staff, confirming that households were actually surveyed and re-administering a randomly-selected subset of the baseline survey questions to check for accuracy. Auditing yielded no evidence of fraud or substantial error on the part of baseline survey staff. The second role of auditors was to field a social network survey on households' links with other surveyed households in the community (questions on contacts with whom respondents share information on health, finances, and agriculture). These social network data were used to understand spillovers from directly-enrolled program beneficiaries.

In addition to the household surveys, a brief survey with a community leader in each community was conducted. The community leader survey consisted of a set of questions about the characteristics of the community, in particular distance to basic facilities and services.

The fieldwork protocols were consistent with the state-of-the-art in survey administration. Survey responses in the field were recorded on digital tablets using SurveyCTO software with internal logic checks to reduce data entry error. Real-time digital data collection eliminated the need for separate data entry from paper surveys, eliminating one important source of data entry error. Data collected in the field were uploaded to a secure cloud server at the end of each workday, for immediate review and processing. Exact geo-coordinates (latitude and longitude) of each household were recorded using the tablet's GPS functionality, greatly easing the process of locating households between the vulnerability assessment, baseline survey, and endline survey.

ETHICAL ASPECTS

Institutional Review Board Approval

This study collected sensitive personal information, and therefore required strict compliance with standards of ethical conduct in research involving human subjects. This study's protocols were reviewed and approved by IRBs in both Mozambique (by the national government's Ministry of Health, approval number 2233/GMS/002/016) and at the University of Michigan (Health Sciences and Social and Behavioral Sciences IRB, approval number HUM00115541). Both IRBs have approved amendments to protocols over the course of the study. An amendment detailing the follow-up survey protocols and data collection has also been submitted for review by both IRBs.

Informed Consent

Informed consent was sought from all adult participants prior to participation. We also obtained parental consent for all children (aged 0-18) from their parent or guardian. The consent form contained an explanation of the study, an explanation of any perceived risks, a description of any possible adverse effects, and informed the individual of his or her right to withdraw from the study at any time or abstain from answering any questions without penalty. For persons who could not read the consent form, it was read to them. Persons not speaking Portuguese provided consent with the assistance of a translator or local language-capable surveyor. Persons who were unable to write were allowed to give their oral consent; in such cases the surveyor recorded the name and signature of a witness.

Risks to Participation

There were no anticipated physical or legal risks associated with participating in this study. Given that participant information was de-identified and encrypted, any risks to confidentiality are considered minimal. Participant data are accessible only to the Principal Investigators and members of the evaluation team that have completed human subjects training. In each community surveyed, leaders of survey operations met with community leaders in coordination with local health authorities to explain the nature of the study and seek permission to conduct the surveys. We did not experience any difficulties with this process. Community leaders appeared to recognize that this study worked towards improving outcomes for OVCs and their families in Mozambique.

LIMITATIONS OF THE EVALUATION

The primary limitation of this study is external validity. The results and findings will be most relevant to areas with similar cultural, social, and economic characteristics to the areas covered by the study. Policymakers and donors should be careful not to extrapolate findings to areas with significantly different characteristics. By randomly assigning treatment and control status to communities and randomly selecting OVC households, we ensure that the results are representative of the districts in which the study took place.

ADDITIONAL RESEARCH ACTIVITIES: “MINITREATMENTS”

In other reports related to this FCC evaluation, we refer to the Randomization Stage 3 treatments as “minitreatments.” It is important to note that these minitreatments were outside of the comprehensive community-level FCC program. The minitreatments consisted of:

- **Anti-Stigma information:** Individual-specific information aimed at reducing concerns about HIV-related stigma in the community. We asked endline-survey respondents about the fraction of residents in their community they think hold specific stigmatizing attitudes towards people living with HIV. Respondents overestimating this fraction for any question were told the true (lower) value we collected from the baseline survey. The rationale behind this treatment was that informing people that the community level of stigmatizing attitudes is actually lower than they think can lead them to be more willing to get an HIV test.
- **HIV/AIDS Information:** Factual information about HIV/AIDS delivered through a short video presented on a computer tablet. The video stressed the negative health consequences of leaving HIV infection untested or untreated. It explained how HIV infection transmits and how infected people may look and feel normal before the infection develops into AIDS.
- **ART Information:** Factual information about ART delivered through a short video presented on a computer tablet. The video stressed that HIV infection is no longer a death sentence because free ART treatment is available and effective in helping people stay healthy and preventing transmission.
- **Both HIV/AIDS and ART Information:** The combination of items 2 and 3 above. Respondents assigned to this minitreatment were shown both the HIV/AIDS and ART Information videos, in that order.
- **High Incentive for HIV Testing:** Each HIV testing coupon offered to the household provides a financial incentive of 100 MZN (\$1.56), instead of the 50 MZN (\$0.78) coupons offered to all other households. This minitreatment was included so as to scale the size of other minitreatment effects with respect to variation in the financial incentive for testing.
- **Control:** Households received none of the above minitreatments. Along with all households randomly assigned the above minitreatments, Control households also received the 50 MZN encouragement coupons for HIV testing.

After households completed the endline survey, we randomly assigned them to one of five treatment conditions or a control condition. The outcome variable of interest for the minitreatments was the redemption of the incentive coupon for HIV testing. This outcome was the only HIV testing outcome we measured after the minitreatments because the self-reported measure was collected in the endline survey itself.

We originally conceived of these minitreatments as providing insight into whether the FCC program is complementary with or substitutable for more targeted interventions to promote HIV testing. The minitreatments turn out to help reveal likely mechanisms through which the FCC program's results operate.

We also conducted tests for balance with respect to the minitreatments and found no concerns about imbalance. The minitreatments were randomly assigned, each with equal probability, and then implemented by the same program staff who had just administered the endline survey to the respondent.

The minitreatments were randomly assigned on the computer of one of the co-authors one time, with no re-randomization. The randomization was stratified by unique combinations of community, FCC-enrolled status, and baseline asset level. The minitreatments are orthogonal to the prior randomization of treatment communities of FCC enrolled households within treatment communities.

4 RESULTS AND CONCLUSIONS

HOW TO INTERPRET THE RESULTS

The experimental design provides estimates of the outcomes from participation in the FCC program. The total sample of communities in the study area was divided evenly between communities where the FCC program took place and where it did not.

Within communities where the FCC program took place, individual households were randomly assigned to either “FCC-enrolled” status, and were direct beneficiaries of the FCC program, or “FCC-ambient” status and did not directly receive FCC programming but may have experienced spillover effects through either proximity or their social networks.

We report results across the three groups: FCC-enrolled, FCC-ambient and Control. The Control group provides estimates of outcomes for households in communities where FCC programming did not take place. Any differences in the selected outcomes between participants in the Control group and participants in either group within the FCC communities can be attributed to the FCC program.

The regression results, which indicate an association between the FCC

(Example)

Outcome: Anyone in HH received medical assistance or visited a clinic (not ART clinic)

Observations: 3,477

Level: Household

FCC-enrolled: +0.152% (0.0186 std error)

FCC-ambient: -0.308% (0.0249 std error)

All FCC communities: +0.042% (0.0193 std error)

Control mean: 67.4%

Reading the FCC Evaluation Results

The results are presented as tables showing the relative impacts of the FCC program on individual outcomes for households in the FCC-enrolled, FCC-ambient and control-group households.

Key

Observations: The total number of households surveyed for this specific outcome across FCC-enrolled, FCC-ambient and Control group. Roughly one-half of this number are Control-group households.

Level: Reports whether this outcome is reported as averages for all households, individuals, adults only, or children only.

Impacts: This number, either increase (+) or decrease (-) is relative to the averages reported as the “Control mean.”

std error: This abbreviation stands for “standard error,” a number that accounts for the variation of data points around the average. The lower the standard error, the more closely clumped the data are to the single-number average.

Control mean: This is the average outcome only from households in the Control group who reside in communities where FCC programming did not take place. This number can be assumed to be the average without any FCC program impacts.

**Outcome: Anyone in HH
received medical assistance or
visited a clinic (not ART clinic)**

Observations: 3,477
Level: Household
FCC-enrolled: +0.152% (0.0186 std
error)
FCC-ambient: -0.308% (0.0249 std
error)
All FCC communities: -0.042%
(0.0193 std error)
Control mean: 67.4%

**Outcome: Coupon redemption
for HIV testing**

Observations: 3,658
Level: Household
FCC-enrolled: -10.5% (0.0386 std
error)
FCC-ambient: +3.28% (0.0443 std
error)
Control mean: 26.3%

**Outcome: Self-reported HIV
testing**

Observations: 3,489
Level: Household
FCC-enrolled: +2.34% (0.0233 std
error)
FCC-ambient: +3.79% (0.0261 std
error)
Control mean: 65.2%

**Outcome: Combined HIV
testing measure**

Observations: 3,658
Level: Household
FCC-enrolled: +2.22% (0.0193 std
error)
FCC-ambient: +3.74% (0.0196 std
error)
Control mean: 72.1%

Outcome: HIV diagnosis

Observations: 3,437
Level: Household
FCC-enrolled: +1.63% (0.0159 std
error)
FCC-ambient: -0.114% (0.0138 std
error)
All FCC communities: +0.886%
(0.0122 std error)
Control mean: 20%

program and the selected outcomes, account for variation in demographics, socioeconomic status and other factors by using what is called a “matched paired community fixed effects” approach. Using this approach, the regression specification can compare outcomes for participants who have roughly the same characteristics, providing increased precision of a program’s effects.

The outcomes for participants in the FCC-enrolled and FCC-ambient groups are provided as averages relative to the average outcome for participants in the Control group. Standard errors are indications of variability of individual points of data above and below the average value. If standard errors are near or greater than the average effect compared to the control group, it reduces the statistical significance of that effect.

FCC IMPACT ON HEALTH CARE UTILIZATION

Health Center Visits

This outcome is an estimate of health care utilization for individuals who self-reported being HIV-positive in the endline survey. We found no evidence that the FCC program affected utilization of health care services compared to households in control-group communities. The FCC program also did not increase the likelihood someone in either an FCC-enrolled or FCC-ambient household sought out medical assistance beyond the ART clinical visits.

HIV Testing

HIV testing plays a central role in the global efforts to combat the HIV/AIDS pandemic, especially because people who are HIV-positive may be asymptomatic for years prior to progression to AIDS. When individuals are found to be HIV-positive, it is recommended that they immediately start anti-retroviral therapy (ART) both for better health outcomes and to reduce viral loads and a much lower risk of transmitting HIV to sexual partners.¹

At the time of the endline survey, the survey team recommended that individuals in the household be tested for HIV if they have not had a test performed in the last three months.

To understand program impacts, we examined both self-reported and directly observed HIV testing separately. Survey questions about self-reported HIV testing in the last 12 months may be subject to reporting biases. We complemented this measure with a directly observed measure in the form of coupon redemption for HIV testing. The coupons, valued at 50 MZN (about \$0.78), were not part of FCC programming and were only included to verify participants received HIV testing rather than relying on self-reported testing. Use of the coupons allows us to directly observe HIV testing immune from survey-reporting biases.

The coupons were distributed to all households, unless no one in the household was eligible for coupons because everyone had been tested within the last three months or because all household members are reported to be HIV-positive. Coupons were given in all households, whether in Treatment or Control communities and irrespective of FCC-enrollment status.

¹ Rodger et al., 2019

The analysis shows that the FCC program either reduced rates of HIV testing or had no statistically significant effect. The observed impacts of the FCC program were essentially the same whether aggregating the data by individual participants or at the household level. At the household level, the program's impact on FCC-enrolled participants is negative.

Based only on verified coupon redemption, FCC-enrolled participants had 10.5% lower rates of HIV testing than households in the Control group. The difference indicates a reduction of two-fifths compared to households in the Control group.

Household size is positively associated with testing for HIV, meaning that the larger the household the higher rates of testing for HIV. Conversely, the greater number of HIV-testing recommendations is associated with lower rates of HIV testing.

Outcome: ART usage

Observations: 656

Level: Individual

FCC-enrolled: -1.34% (0.014 std error)

FCC-ambient: +1.42% (0.011 std error)

Control mean: 97.7%

Outcome: High ART adherence

Observations: 614

Level: Individual

FCC-enrolled: -0.517% (0.03 std error)

FCC-ambient: -3.16% (0.0344 std error)

Control mean: 83.4%

Outcome: Anyone in HH chronically ill

Observations: 3,479

Level: Household

FCC-enrolled: +0.472% (0.012 std error)

FCC-ambient: +0.331% (0.015 std error)

All FCC communities: +0.412% (0.0100 std error)

Control mean: 11.7%

HIV Diagnosis

The analysis found that the FCC program had no statistically significant effect on the rate of HIV diagnosis.

HIV Treatment

ART usage and adherence outcomes are at the level of individuals and are self-reported. We restricted the sample of ART-adherence to only individuals who are HIV-positive. We define ART usage as an individual who currently takes anti-retroviral medicines and ART adherence as an individual who reported having missed no doses in the last 30 days. FCC-enrolled participants did not have ART adherence at rates that were statistically different than individuals in the Control group.

FCC IMPACT ON HEALTH OUTCOMES

Anthropometrics

While the research team planned to include anthropometrics in this evaluation, to do so would require in-person surveys. These plans were made impossible by travel and other restrictions imposed by the COVID-19 pandemic.

Morbidity

The FCC program did not reduce the likelihood of at least one household member reporting having a chronic illness for households in treated communities.

Mortality

The research team planned to include mortality in this evaluation, but a combination of budget limitations and restrictions imposed by the COVID-19 pandemic made data collection for this outcome impossible.

FCC IMPACT ON EDUCATION OUTCOMES

Data collection for the analysis on some of the education outcomes was partially completed before restrictions were imposed by the COVID-19 pandemic.

Outcome: Directly observed school attendance

Observations: 3,473

Level: Individual child

FCC-enrolled: -0.456% (0.018 std error)

FCC-ambient: +1.07% (0.014 std error)

Control mean: 9.82%

Outcome: Self-reported school attendance

Observations: 3,883

Level: Individual child

FCC-enrolled: -2.07% (0.0136 std error)

FCC-ambient: +1.03% (0.0119 std error)

Control mean: 90.1%

Outcome: Directly observed school enrollment

Observations: 3,473

Level: Individual child

FCC-enrolled: -0.936% (0.0248 std error)

FCC-ambient: -1.43% (0.0237 std error)

Control mean: 44.0%

Outcome: Child on track for grade progression

Observations: 3,009

Level: Individual child

FCC-enrolled: +1.21% (0.0238 std error)

FCC-ambient: -2.45% (0.0183 std error)

All FCC communities: -1.07% (0.0174 std error)

Control mean: 69.1%

Attendance

Attendance is counted as either self-reported attendance or if a child is directly observed to attend school by our project staff during an unannounced school visit. We counted student enrollment at the February start of the 2019 and 2020 school years based on data from school enrollment record books.

We found no evidence that the FCC program improved school attendance compared to control communities.

School Performance

For budget reasons, we were not able to collect all data needed to analyze school performance.

Grade Progression

The analysis showed that children from households where the FCC program took place were just as likely to be on track for grade progression as children in control-group communities.

FCC IMPACT ON HOUSEHOLD ECONOMIC CONDITIONS

Investment in Agricultural and Non-agricultural Activities

There is a slight decrease in both the purchase and sale of investment goods for households in treatment communities overall but specifically for FCC-enrolled households. FCC-enrolled households are 4.76% less likely to have made an investment purchase in the past 12 months, and 3.01% less likely to have sold an investment good in the past 12 months than households in the Control group.

Use of Modern Agricultural Inputs

Due to budget limitations, we could not estimate any changes on the use of modern agricultural inputs.

Farm and Non-farm Income

The FCC program does not appear to have shifted household monthly income for treated households.

Outcome: Purchases of investment goods in the past 12 months

Observations: 3,658
Level: Household
FCC-enrolled: -4.76% (0.0210 std error)
FCC-ambient: -2.66% (0.0245 std error)
All FCC communities: -3.87% (0.0209 std error)
Control mean: 25.7%

Outcome: Sale of investment goods in the past 12 months

Observations: 3,658
Level: Household
FCC-enrolled: -3.01% (0.0161 std error)
FCC-ambient: -2.04% (0.0152 std error)
All FCC communities: -2.60% (0.0151 std error)
Control mean: 10.1%

Outcome: Household monthly income in MZN

Observations: 3,658
Level: Household
FCC-enrolled: -112.9 MZN (136.0 std error)
FCC-ambient: -52.46 MZN (130.2 std error)
All FCC communities: -87.41 MZN (124.7 std error)
Control mean: 1,772 MZN

Outcome: Household asset index

Observations: 3,658
Level: Household
FCC-enrolled: -15.8 (0.0985 std error)
FCC-ambient: -19.4 (0.0913 std error)
Control mean: 59.5

Outcome: Life satisfaction

Observations: 3,935
Level: Adult individuals
FCC-enrolled: +2.05% (0.167 std error)
FCC-ambient: +1.77% (0.171 std error)
Control mean: 4.672

Consumption per Capita

Due to budget limitations, we could not estimate any changes on consumption per capita.

Household asset index

We constructed a household asset index as a vector of indicator variables for owning 14 different assets: car, motorcycle, bicycle, radio, television, sewing machine, refrigerator, freezer, iron, bed, table, mobile phone, clock, and solar panel.

The results for the household asset index are relatively large and are negative, which means that communities where the FCC program was available had lower levels of assets compared to households in Control-group communities. The standard deviation of the index is 1, which makes the FCC program's effects on the household asset index amount to one-sixth to one-fifth of a standard deviation.

Life Satisfaction

We added a question to the endline survey to measure any FCC program impacts on overall life satisfaction. The question was: "Please imagine a ladder with steps numbered from zero at the bottom to 10 at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you say you personally feel you stand at this time?" This is defined at the individual level for all adult respondents.

FCC-enrolled households reported slightly higher levels of life satisfaction based on this question, but that increase compared to reported life satisfaction among households in Control-group communities was very small.

FCC ECONOMIC STRENGTHENING INTERVENTIONS AND HOUSEHOLD ABILITY TO COPE WITH SHOCKS

Cyclone Idai struck the Sofala and Manica study areas in March 2019, which was immediately prior to the endline survey and the redemption of HIV-testing coupons. This disaster provided an opportunity to measure whether participants in the FCC program were more able to cope with a shock than non-participants. Because no communities in Zambezia experienced hurricane-force winds, these communities provided a ready control group to test whether the disaster affected any of the outcomes of interest.

We developed an index of cyclone severity to test for any impacts related to the disaster. In Sofala, all communities experienced at least Category 1 hurricane-force winds, with eight out of 18 experiencing Category 2 force winds. In Manica, none experienced Category 2 winds, and only seven out of 28 experienced Category 1 winds. No Zambezia communities experienced hurricane-force winds.

This variation in the cyclone's severity created a natural experiment we used to compare any cyclone-related impacts. We found no evidence that the

cyclone had different effects on FCC-enrolled and FCC-ambient households. Using this cyclone severity index, we also found no evidence that the cyclone had any impacts of the outcomes of interest in this evaluation of the FCC program.

We also sought to identify whether disaster exposure was associated with post-disaster help received, and whether the FCC program led to greater help received, given disaster exposure. The survey following Cyclone Idai included the question: “Did your household receive cash, goods, or services that you do not have to repay to help you cope with the losses in Cyclone Idai?”

On average, 13 percent of households stated yes to that question. We found that an increase in the disaster index by one standard deviation increased the share of households answering yes to that question by 10 percentage points in FCC-ambient communities and 21 percentage points in FCC-enrolled communities.

Most of this increase in help received in FCC-enrolled communities came from NGOs, including the FCC program’s local implementing partners. The results show that the program itself drove these positive outcomes, not necessarily the program’s economic strengthening of families.

Outcome: Heard of FCC

Observations: 3,658
Level: Household
FCC-enrolled: +13.7% (0.025 std error)
FCC-ambient: +11.7% (0.0275 std error)
Control mean: 48.2%

Outcome: Visited by Case Worker

Observations: 3,658
Level: Household
FCC-enrolled: +6.46% (0.011 std error)
FCC-ambient: +3.38% (0.0113 std error)
Control mean: 5.63%

Outcome: Received Services

Observations: 3,658
Level: Household
FCC-enrolled: +10.7% (0.0209 std error)
FCC-ambient: +6.65% (0.0204 std error)
Control mean: 10%

FCC PROGRAM SPILLOVERS

Spillovers take place when a program’s outcomes are also experienced by households who did not have direct contact with it. This could happen through geographic proximity to households who are direct beneficiaries of the program or by being a part of those households’ social networks.

We developed variables for geographic proximity and social connectedness to measure any spillover effects. For geographic proximity, we established distances of “close” for households 0-200 meters distant (mean 2.08) and “intermediate” for households 200-500 meters distant (mean 6.37). To quantify social connectedness, we presented each participant with a list of FCC-enrolled households in their community and asked if they were socially connected (mean 0.260).

We measured differences in outcomes between FCC-enrolled households and FCC-ambient households and for nearly all outcomes found no differences. This lack of direct FCC-program impacts among FCC-enrolled households indicated no likelihood of measuring program spillovers.

SUGGESTIVE EVIDENCE ON MECHANISMS THROUGH WHICH THE PROGRAM HAS ITS EFFECTS

The Role of Home Visits

The home visits themselves were the primary drivers of any impacts or lack of impacts of the FCC program. We measured the knowledge of, contact with and services provided by the FCC LIP organization. These outcomes come from the endline survey and were reported by the primary household respondent.

We examined three key self-reported indicators to estimate the level of contact households had with the FCC program through home visits. The first indicator is for a household having heard of the LIP in their community. The

Outcome: HIV knowledge index

Observations: 3,940
Level: Adult individuals
FCC-enrolled: -0.598% (0.00828 std error)
FCC-ambient: -0.639% (0.00981 std error)
Control mean: 75.6%

Outcome: Transmission myth index

Observations: 3,940
Level: Adult individuals
FCC-enrolled: -3.02% (0.0148 std error)
FCC-ambient: -3.86% (0.0182 std error)
Control mean: 74.7%

Outcome: HIV stigma index

Observations: 3,820
Level: Adult individuals
FCC-enrolled: -1.35% (0.00505 std error)
FCC-ambient: -1.03% (0.00636 std error)
Control mean: 74.6%

Outcome: Question: “Would buy groceries from an HIV-infected person”

Observations: 3,756
Level: Adult individuals
FCC-enrolled: -1.39% (0.00991 std error)
FCC-ambient: -2.92% (0.0124 std error)
Control mean: 85.8%

Outcome: Question: “Would not keep a HIV-infected family member a secret”

Observations: 3,777
Level: Adult individuals
FCC-enrolled: -2.81% (0.0196 std error)
FCC-ambient: -0.0129% (0.0200 std error)
Control mean: 16.8%

second is an indicator for a household having been visited by a Case Care Worker (CCW) of the LIP. The third is an indicator for a household having been referred to or received any services from the LIP in their community. This last indicator is constructed from several survey questions asking about services received from NGOs, and which organization provided these services.

FCC-enrolled participants had higher rates of having heard of, been contacted by, or received services referred by the LIP. FCC-ambient households also had higher rates of this indicator. This result suggests that the FCC program did reach more households in treatment communities than in Control communities, and FCC-enrolled households more so than FCC-ambient households.

HIV-related Knowledge

We asked participants in both FCC and Control communities 33 questions related to HIV knowledge and measured the fraction of questions answered correctly. We examined an overall index covering all 33 questions, a general HIV knowledge subindex, a knowledge of correct forms of HIV transmission subindex, a belief in myths of HIV transmission subindex, a knowledge of protective methods against HIV subindex, and a knowledge of treatments for HIV subindex. These indices are defined such that an increase in the index is an improvement in HIV knowledge.

There are a variety of effects of FCC-enrolled and FCC-ambient status on individual knowledge questions, both positive and negative. Across these indices, FCC-enrolled households showed no substantial differences compared to FCC-ambient and Control-group households except for greater beliefs in HIV transmission myths. FCC-enrolled households scored 3.02% lower on questions related to HIV-transmission myths (indicating an increased belief in transmission myths) compared to control-group participants. FCC-ambient households scored 3.86% lower than Control-group participants.

HIV-related Stigmatizing Attitudes

We measured the potential mechanism of HIV-related stigmatizing attitudes with an index of four separate questions. The questions measuring stigmatizing attitudes are adopted from the AIDS Indicator Survey of the DHS Program. The questions have been used in Mozambique as well as other DHS countries since from 2003.² In recent years, there has been a substantial increase in HIV-supportive attitudes (reductions in stigma) for three of the questions, but increasing stigmatizing attitudes for the fourth (on keeping a relative's HIV-positive status secret).

We asked these questions in the baseline survey (administered to a randomly selected subset of sample households) and the endline survey (administered to all sample households). The results indicate that FCC enrollment increased stigmatizing attitudes related to HIV. In particular, the estimates for FCC-enrolled households for the question, “Would not keep it a secret if a family member had HIV” is negative and the large in magnitude compared to the control group. For the question, “Willing to buy groceries from an HIV infected person,” the result for FCC-ambient households is negative and statistically significant.

² INS, 2017

Positive HIV Attitudes

We examined FCC impacts on positive attitudes related to HIV and found that none of these outcomes were statistically significant.

Sexual Behavior

FCC enrollment reduced the number of sexual partners in the past 12 months for both FCC-enrolled and FCC-ambient adults. FCC-enrolled adults reported 10.04% fewer sexual partners compared to adults in the Control group. This effect may be related to the impacts of FCC-enrollment on beliefs about transmission myths and in HIV-related stigmatizing attitudes. Increases in beliefs about transmission myths and in HIV-related stigmatizing attitudes may lead people to reduce their number of sexual partners so as to avoid HIV infection.

RESULTS DISCUSSION

Among the many benefits of a randomized controlled trial to evaluate a program's impacts is that the outcomes it estimates are separate from the result of broader trends that may also have an effect. Randomizing study participants into similar groups means that any observed differences among households between those groups can be credited causally to the program itself.

We considered two potential causes that may account for the general lack of FCC program impacts as well as its negative impact on rates of HIV testing. First is the possibility that the FCC program LIP did not contact FCC-enrolled households. Based on data provided by the FCC program, 77% of FCC-enrolled households received a home visit. In this impact evaluation, 5.63% of households in the Control group reported receiving a household visit. Among FCC-enrolled households, 6.46% more households reported receiving a household visit.

However, the number of home visits was sufficient to cause differences in HIV-related knowledge and HIV-stigmatizing attitudes. The FCC program alone was associated with a decrease in HIV-related knowledge and an increase in HIV-stigmatizing attitudes. Because we did not anticipate these negative findings in our program evaluation, we did not collect information needed to understand how the program could have increased misinformation and worsened stigmatizing attitudes.

POST-ENDLINE MINITREATMENTS

We designed an additional post-endline intervention to test whether HIV misinformation and stigma associated with FCC enrollment may have caused the observed reduction in HIV testing. The outcome of interest for these "minitreatments" was directly observed HIV testing, which was the only outcome collected after the FCC program evaluation endline survey. This additional component of the study was not included in the evaluation's original Scope of Work for project, but was approved by the USAID Mission office in Mozambique.

The minitreatments were designed and implemented independently by the

Outcome: Question: "Would care for an HIV-infected family member in own home"

Observations: 3,801
Level: Adult individuals
FCC-enrolled: -0.506% (0.00313 std error)
FCC-ambient: -0.476% (0.00368 std error)
Control mean: 99.3%

Outcome: Question: "Should an HIV-infected teacher be allowed to teach"

Observations: 3,748
Level: Adult individuals
FCC-enrolled: -0.330% (0.00657 std error)
FCC-ambient: -0.0831% (0.00602 std error)
Control mean: 96.5%

Outcome: Positive HIV attitudes index

Observations: 3,849
Level: Adult individuals
FCC-enrolled: -1.24% (0.0157 std error)
FCC-ambient: -0.894% (0.0165 std error)
Control mean: 56.3%

Outcome: Count of sexual partners in the past 12 months

Observations: 3,889
Level: Adult individuals
FCC-enrolled: -10.04% (0.0338 std error)
FCC-ambient: -8.93% (0.0395 std error)
Control mean: 1.22

research team. While all households received the previously discussed 50 MZN (\$0.78) coupon to track observed testing behavior, these minitreatments included both informational interventions as well as a high-value coupon of 100 MZN (\$1.56). We used the coupons for testing as a way to verify rates of HIV testing as a result of the minitreatments. All participants across both treatment groups and the Control group received the minitreatments.

The informational interventions provided to individual households included:

- Information on the true rate of HIV-supportive (non-stigmatizing) attitudes in the community
- HIV Information video (2-minutes in length) only
- ART Information video (2-minutes in length) only
- Both HIV and ART Information videos

The average effects across the full sample shows that only the high-value coupon had an effect on HIV testing rates that is statistically significant. The effect amounts to 7.29 percentage points above the Control-group average of 26.3%.

The minitreatments help reveal potential mechanisms behind the negative effects of FCC enrollment more directly. We find that the program did not improve HIV-related overall knowledge, and in fact increased misinformation. Treated respondents became more likely to believe “myths” about HIV transmission (e.g., that HIV can be spread by shaking hands or by witchcraft). In addition, the program actually worsened HIV-related stigmatizing attitudes, measured by answers to survey questions on HIV-related stigma (such as whether one would buy vegetables from an HIV-positive vendor, or think that an HIV-positive person should be a teacher).

The findings enumerated so far are suggestive that the FCC program’s negative impacts are due to worsened information and increased stigma. However, simply showing that the treatment leads to worsened information and increased stigma does not establish with certainty that these are mechanisms behind the program’s impacts, since these outcomes could co-move with HIV testing without being mechanisms in the causal chain.

Strikingly, the minitreatments counteract the negative effect of the FCC program. Among FCC-enrolled households, those getting any minitreatment have substantially higher HIV testing rates than the minitreatment control group. Looking at the minitreatments one-by-one, households receiving either information minitreatment or the anti-stigma minitreatment show similarly improved HIV testing rates compared to households receiving no minitreatment. These findings help confirm that the FCC program worsened HIV knowledge and increased stigmatizing attitudes, and that the minitreatments targeting these mechanisms helped reverse these negative effects of the FCC program.

Overall, our theoretical model encapsulates the mechanisms behind our empirical findings. The FCC program led to misinformation about the transmission of HIV, which worsened stigmatizing attitudes and led to lower HIV-testing rates. The minitreatments offset the FCC program’s negative impact on information and stigmatizing attitudes, raising HIV testing rates.

5 RECOMMENDATIONS

The results of this evaluation show that the FCC program in Mozambique had no positive impacts for any of its intermediate results. The evidence also suggests that more research is urgently needed to understand the causes that link FCC and similar programming and potential unintended negative outcomes such as increased stigmatizing attitudes about HIV that may play a role in reduced rates of HIV testing.

These results from the evaluation of the FCC program may be common for similar multifaceted PEPFAR-funded programs across Sub-Saharan Africa, though since the end of FCC the OVC approach has shifted towards narrow support for the diagnosis, linkage and retention in treatment of children living with HIV. The evidence from this evaluation suggests that similar multifaceted programs may be ineffective at accomplishing their purpose or may be unintentionally adding to the challenge of responding to HIV/AIDS in Africa.

This evaluation of the FCC program should also be the first step in a broader research agenda that seeks to understand the impacts of multi-faceted programs designed to address HIV/AIDS in Sub-Saharan Africa. These programs require rigorous impact evaluation to document the causal chain through which these programs might affect HIV testing and other outcomes that determine the wellbeing of OVCs and their households.

The causal chain between programming and potentially negative impacts is made up of multiple points of contact between the program and individual households. The first step in the causal chain in the context of this evaluation of the FCC program in Mozambique is the home visits. We must learn more through rigorous evaluation about what components of a program's home visits may have changed HIV-stigmatizing attitudes and information about HIV. Additionally, rigorous evaluation can observe whether these changes are direct causes for changes in rates of HIV testing.

One challenge for research is to evaluate programs that consist of a bundle of interventions that may all contribute to observed impacts, making it very difficult to disentangle the distinct effects of a single intervention. An impact evaluation will have the greatest opportunity to identify strong causal links between programming and outcomes by evaluating program interventions that are delivered individually to households rather than as bundled together with other interventions.

6 ANNEXES

FCC EVALUATION TEAM

Dean Yang, Ph.D., Lead Principal Investigator

Professor of Economics, Department of Economics and the Ford School of Public Policy, University of Michigan; Research Professor, Population Studies Center, University of Michigan

Dean Yang's research includes microfinance, international migration, health, disasters, international trade, and political economy. Methodologically, much of his work involves randomized controlled trials in field settings, but other work involves analysis of novel data sources. He is currently running survey work and field experiments among Filipino migrant workers and their families, and among rural microloan clients in Malawi. His past and current field research locations include El Salvador, Guatemala, Indonesia, Malawi, Mozambique, and the Philippines, as well as migrant populations of Filipinos in Italy, Indians in Qatar, and Salvadorans and Kenyans in the U.S. He teaches courses in development economics and microeconomics at the undergraduate, master, and Ph.D. levels. A native of the Philippines, he received his undergraduate and Ph.D. degrees in economics from Harvard University.

Researcher James Allen IV, M.S.

Ph.D. Candidate, University of Michigan

James Allen is a Ph.D. candidate in Public Policy & Economics at the University of Michigan with interests in development economics in Sub-Saharan Africa relating to education, health, and natural disasters. He served in the Peace Corps in Mali (2010-2012) while earning an M.S. degree in Agricultural, Food & Resource Economics from Michigan State University (2012). Prior to starting his Ph.D., Allen worked as a Research Director at the University of Kentucky, where he managed large grants and supervised research staff and graduate assistants. He has experience working in several developing countries, including Burundi, Mali, Mozambique, the Philippines and Rwanda.

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Dr. Arlete Mahumane is the Scientific Director of Beira Operational Research Center (Portuguese acronym CIOB). CIOB was created in 2007 by the Ministry of Health (MISAU), as a Research Unit of the National Institute of Health (INS) and is located in Sofala Province (in the City of Beira) at the Ponta-Gêa Health Center. The CIOB is an INS research unit based in the city of Beira, Sofala Province. The CIOB is a public institution whose purpose is

to promote and develop health research activity along with the creation of research capacities in the Central Region of Mozambique.

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Ryan McWay is an economic researcher. He currently works at the University of Michigan, Institute for Social Research and Population Studies Center. His research aims are focused on improving development outcomes in regional and global settings. McWay's research interests focus on Applied Microeconomics with specific concentrations in Development Economics, Natural Disasters, and Urban Economics. McWay has conducted household and over-the-phone field surveys in a variety of countries. McWay completed his M.S. in International and Development Economics at the University of San Francisco (USF), and his BS in Economics and BS in International Business at Saint Louis University (SLU).

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Clinical Professor, University of Michigan Medical School

Dr. James Riddell IV graduated from the Case Western Reserve University School of Medicine in 1994. He is affiliated with the University of Michigan Hospitals & Health Center and St Joseph Mercy Ypsilanti and he works in Ann Arbor, MI and two other locations. Dr. Riddell IV specializes in Infectious Disease.

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Assistant Professor, Economics Department, Peking University

Dr. Hang Yu is an Assistant Professor at the National School of Development, Peking University. His research agenda spans a range of development economics topics, including health, disaster, anti-poverty programs, and political economy. Methodologically, much of his work involves conducting randomized control trials in field settings and generating original data. He is currently running field experiments that help households cope with the HIV/AIDS pandemic and natural disasters. His research locations include China and Mozambique. Yu received his Ph.D. in economics from the University of Michigan.

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AWARD-RELATED DOCUMENTS AND PAPERS PRESENTING RESULTS OF THIS FCC EVALUATION

Full text of all documents are available at:

<https://basis.ucdavis.edu/publication/evaluation-pepfar-funded-forca-comunidade-e-criancas-fcc-program-mozambique>

Yang, D. 2016. "Health, Education, and Economic Interventions for Orphans and Vulnerable Children Impact Evaluation Protocol."

Yang, D. 2019. "FCC Impact Evaluation Research Strategy and Protocol."

Yang, D., A. Mahumane, J. Riddell IV, H. Yu. 2019. "Direct and Spillover Impacts of a Community-Level HIV/AIDS Program: Evidence from a Randomized Controlled Trial in Mozambique PRE-ANALYSIS PLAN." University of Michigan.

Yang, D., A. Mahumane, J. Riddell IV, H. Yu. 2019. "Direct and Spillover Impacts of a Community-Level HIV/AIDS Program: Evidence from a Randomized Controlled Trial in Mozambique." *Journal of Development Economics* Registered Report Stage 1: Proposal.

Yang, D., J. Allen IV, A. Mahumane, J. Riddell IV, H. Yu. 2021. "Knowledge, Stigma, and HIV Testing: An Analysis of a Widespread HIV/AIDS Program." NBER Working Paper No. 28716.

Yang, D., J. Allen IV, A. Mahumane, J. Riddell IV, H. Yu. 2021. "POPULATED PRE-ANALYSIS PLAN for Direct and Spillover Impacts of a Community-Level HIV/AIDS Program: Evidence from a Randomized Controlled Trial in Mozambique." University of Michigan.

Yu, H. 2021. "Social Stigma as a Barrier to HIV Testing: Evidence from a Randomized Experiment in Mozambique." Working Paper. University of Michigan.

EVALUATION SCOPE OF WORK

The central questions of interest in this study are as follows:

1. What is the impact of the SFCS-OVC program on the outcomes of OVCs?

- What effect does the program have on health care utilization (health center visits, HIV testing, diagnosis, and treatment)?
- What are subsequent effects on health outcomes (anthropometrics, morbidity, mortality)?
- What are the impacts on education outcomes (attendance, performance, grade progression)?
- What are impacts on household economic conditions (investment in agricultural and non-agricultural activities, use of modern agricultural inputs, farm income, non-farm income, consumption per capita)?
- Do the economic strengthening interventions affect household ability to cope with health and other (e.g., agricultural, weather) types of shocks? If so, what financial instruments do households use to cope with shocks (credit, savings, asset accumulation and decumulation)?

2. How do the impacts of the economic strengthening interventions (component 5), compare with impacts of the community support interventions (components 1-4)?

3. The extent to which FCC-program impacts spilled over to households who are not directly enrolled in FCC programming.

STATEMENTS OF DIFFERENCE

WEI Accomplishments.

1. Key Performance Indicators

Key performance indicators	FY16	FY17	FY18	FY19	FY20
OVC_SERV Annual target	70,000	104,504	135,239	132,128	105,325
FCC OVC_SERV reach	38,837	97,638	91,171	142,785	119,119
Number of graduated beneficiaries	-	-	26,857	7,861	55,904
% reach of OVC_SERV target	55%	93%	67%	108%	113%
OVC_SERV_(0-17 years)	35,527	64,672	77,147	110,515	92,521
OVC_SERV_(18+ years)	3,310	-	14,024	32,270	26,678
10–24-year AGYW served	21,643	28,163	23,275	37,854	33,291

Table 01: FCC’ Achievement of Key Performance Indicators

Under FCC, WEI/B also lead DREAMS programming (2017-2020) for Adolescent Girls and Young Women (GYW) to reduce their risk of HIV infection. WEI/B also reached more than 37,000 AGYW and their male partners with critical HIV preventions services, across 3 of the 4 FCC provinces. **WEI/B was the only INGO DREAMS community partner to implement DREAMS activities in all three USAID-funded DREAMS provinces in Mozambique.**

Built a Functioning, Multi-Sectorial Referrals and Linkages System. The project strengthened a locally driven referral systems within communities and across sectors in 4 provinces and 16 districts, ensuring that OVC and households were able to access a range of services that met their holistic needs. Under FCC, WEI/B and its partners led the development and refinement of a comprehensive, HIV-sensitive case management approach, **upskilling and deploying a network of more than 1,900 trained community cadres** to deliver layered services, recognizing their critical role in the HIV cascade. The use of community volunteers generates long lasting benefits for the individual volunteers, project beneficiaries, and for the community as a whole.

Strengthened the Capacity of Local Government to Coordinate OVC Care and Support Services. Chronic understaffing and underfunding of Government agencies has resulted in widespread gaps in professionally trained front-line social welfare staff at district level, while limited coordination among other key sectors also contributed to fragmented service delivery along the continuum of community-level OVC care. To respond, FCC worked closely and consistently with provincial and district Ministry of Gender, Child and Social Action (MGCAS), Ministry of Health (MISAU), and Ministry of Education and Human Development (MINEDH) staff to strengthen capacity at district level to coordinate, plan, and monitor holistic approaches to providing critical services to OVC.

Built the Capacity of Local Implementing Partners to Roll Out Evidence-Based OVC Models. WEI/B brought to FCC a set of evidence-based models that we had successfully implemented to improve the quality of and expand access to a range of family-cantered services for OVC and their households

across the East and Southern Africa region. Through FCC, WEI/B assisted 15 LIPs to contextualize these models for Mozambique and integrate and adapt them to their existing program activities.

Scaled up OVC Programming Contributions to the HIV Cascade: WEI/B scaled up platforms and interventions that aided identification, screening, testing, linkages and retention to care and treatment for HIV positive children and their families. Specifically, WEI/B's key strategic implementation approaches and results include:

- *Strengthened family-centered and HIV sensitive case management* for all OVC and their families. This included the refinement of case management tools which **lead to improved HIV screening and monitoring of HIV status among all OVC beneficiaries.**
- *Formalized community-clinical collaborations and linkages* through MoUs and job-aids that defined platforms, roles and responsibilities of both the community and clinical partners along the three 95's. This **lead to joint routine data sharing, analysis and triangulation at all levels, bottleneck assessments, and bi-directional referral prioritization, and ultimately the use of retention data for decision making and in order to reduce defaulters.**
- *Maximized the use of both clinic and community platforms to identify HIV positive children,* children lost to follow up, as well as index cases and their networks using ART, PMTCT, HIV-exposed, and TB registers. This included trained community cadres in all project sites, as well as linkages with specialized CBOs, CCPCs and other referral points that **lead to increased HIV+ caseload.**
- *Piloted and scaled up viral load monitoring systems among OVC projects.* This **lead to 61% of HIV beneficiaries having documented VL results within the OVC project, while 42% were also virally suppressed.**
-

2. Responsive Program Shifts & Positive Outcomes

In 2018, to respond to PEPFAR shifts, WEI/B refined OVC enrolment criteria and processes to move from that of a community response project focusing on reduction of social vulnerability to a *community-based HIV response project for OVC.* The goal of the refinements, as required by PEPFAR, was **to achieve increased HIV positive caseload for OVC and their priority sub-populations.** WEI/B scaled up platforms and interventions that aided identification, screening, testing, linkages and retention to care and treatment for HIV positive children and their families. WEI/B also intensified strategic partnerships with clinical partners to enhance timely identification of HIV positive and at-risk OVC for linkage to HIV-related services.

Improved uptake of ECD services by communities. WEI/B's Early Childhood Development (ECD) model employed a community-based and community driven model that increased the uptake of early childhood education services in vulnerable communities; provided quality education services to adequately prepare OVC for school, and promoted behavior change among teen mothers and OVC caregivers to support the growth and development of their infants/young children. **FCC's community mobilization strategy was pivotal in improving the uptake of ECD services by communities.** The strategy addresses both demand-side constraints—caregivers' lack of information on the importance of ECD—and supply-side constraints—lack of available ECD services, particularly in remote communities throughout Mozambique. Community-led ECD Management committees, initially trained by the project, become responsible for leading community resource mobilization efforts.

Provided quality ECD services to prepare vulnerable children for school. From 2016-2020, WEI/Bantwana and its local partners established and/or improved 84 community-managed ECD Centers and

in partnerships with communities, locally recruited and trained 319 ECD Educators to lead interactive and learner-centered ECD activities following the Government approved guidelines for supporting children and families in ECD programming. These ECD Educators were also taught to produce teaching materials and toys using recycled and local materials and to cascade this information to caregivers to produce toys for their children. The ECD Educators also joined community-based case care workers for joint home visits to the families of OVC enrolled in the ECD centres to support and enhance referral pathways and access to services.

On children



Equipped 15,671 vulnerable children ages 3-5 years with foundational skills for school readiness, including 982 (6%) HIV+ children.



Transitioned 71% of eligible children from ECD to primary school by age 6, including highly vulnerable children often left behind.

On caregivers



Supported 2,600 caregivers to receive birth certificates and/or poverty certificates to access education and protection services.



Mobilized 2,329 caregivers to join saving and lending association to build personal savings

On communities



Trained more than 2,500 community members on resource mobilization to establish local ECD Management Committees

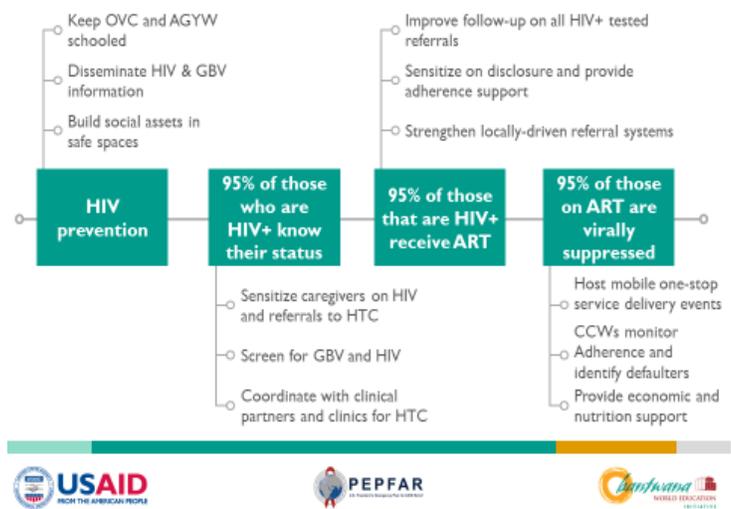
To address, child protection issues—a priority area for all WEI/B programs—including the psychological stress faced by many children and families made vulnerable especially by HIV/AIDS, FCC supported **92,363** children and adolescents with an integrated package of age-, gender- and culturally-appropriate PSS, child rights, and life skills interventions. PSS activities were designed and implemented using a layered approach and were delivered through a range of community-level structures, including schools, clubs, home visits, and parenting sessions.

FCC prioritized the implementation of community-based activities that uniquely contributed to and strengthened a **multi-sectorial approach of care and support for OVC and their families in line with the UNAIDS global strategy of attaining the 95-95-95 goals.**

Contributed to the 95s:

- 95% (diagnosed): *Established youth-led HIV/GBV prevention peer groups and safe spaces* conducive for information dissemination, identification and referral of at-risk OVC and AGYW for HIV testing, referral confirmation and appropriate service delivery in collaboration with clinical partners and platforms.
- 95% (on treatment): *Refined HIV screening tools that enhanced index case finding, identification of undiagnosed HIV positive OVC/AGYW* that are “well”, and collaborated with clinical partners for linkage to care and treatment. Leveraged clinical partners for the enrolment of HIV positive beneficiaries for continued support services in the community.

FCC interventions by 95-95-95



- 95% (virally suppressed): *Established and expanded an adherence monitoring system within community-based platforms*, including the collection and use of viral load data in combination with a package of adherence support and other OVC services that were aimed at enhancing retention in care and treatment of HIV positive OVC and their families.

Contributing factors to achieving positive results across the 95s included robust training, on-the-job, and supportive supervision mechanisms developed and enhanced by WEI/B through-out project implementation. The section below highlights some of the key activities implemented along the 95's by WEI/B and selected results of these interventions.

Developed, Piloted and Scaled-up an HIV Tracking tool. After the successful scale up of the HIV tracking Matrix in all FCC districts LIPs focused on enhancing the understanding of it, and developing relationships with HUs and Clinical partners for the sharing of HIV clinical data for OVC. Through engagements and meetings with clinical partners and health facility directors, LIP technical officers and CCWs at the HUs managed to convince the stakeholders on the utility of the matrix and how it could significantly contribute to improved viral load and general patient monitoring for retention and adherence. LIPs also used this information to supervise and monitor CCWs by tracking information, validating it and managing CCW caseloads and routine service delivery which is being used as a proxy for retention in treatment.

Brought health services to vulnerable communities. FCC refined two innovative and effective platform for reaching communities with multiple health and social protections services in a centralized location within the most vulnerable communities. The first, **Community Health and Nutritional Assessments (CHNAs)** was one of the breakthrough innovations by the FCC project that decentralized primary health care services to communities in response to HIV service access barriers cited by OVC caregivers. In collaboration with SDSMAS nearby health facilities, and other government service providers, WEI/B and its LIPs targeted and mobilized caregivers and OVC aged 0-8 years to access primary health care services within their communities.

Services provided during the CHNA included HIV testing and referrals for OVC and caregivers; nutrition screenings and referrals for OVC; nutrition demonstrations; birth registration; and poverty certificate registration. Over the life of the project, CHNAs were conducted reaching **21,989 infants with nutrition**

screenings; 14,764 caregivers with nutrition demonstrations; 7,591 OVC with linkage to nutrition rehabilitation, 4,673 with birth registration services; 17,144 caregivers receiving COVID-19 health education.

WEI/B also implemented innovative **GBV and HIV Mobile One Stops (*Paragem Única*)** in underserved communities utilizing the same approach as above. This platform focused on addressing the needs of adolescents and young adults who often find the clinic inaccessible or intimidating. The One Stop service delivery model brought an array of health and social protection services right to the doorstep of vulnerable youth and their families.



One-Stop events attract youth through a blend of entertaining music and educational messages in a lively atmosphere open to all and mobilize government, non-governmental, and private partners from multiple sectors to provide immediate services in one central community location for increased uptake and enhanced coordination. Over the life of the project, **WEI/B coordinated and implemented 7 one stop events, reaching a total of 41,871 people.** Of those services rendered 38% received HIV testing, 19% adolescents received family planning (FP) services; 23% received legal aid, 12% received PSS and counselling support and 8% received school enrolment services.

"The good environment and professionals I met at the One Stop helped break my fear of getting tested. Thanks to the One Stop, I now know my HIV Status." – Grade 10 Student

Facilitated Access to Youth-Friendly Services. Peer educators and mentors generate demand among youth for HIV and GBV services through information and open dialogue in safe spaces, and they also help youth feel confident while seeking these essential services despite deterrents like distance, stigma and discrimination. Linkages to dedicated youth-friendly service clinics, coupled with follow-up targeted from mentors or other volunteer community-based cadres who provide complementary support to youth in their schools and their homes, ensure that youth feel comfortable accessing and navigating the health system and successfully complete their referrals.

Disseminated data use for decision making at community level. Building on the successful pilot and roll out of the simplified service database and tracking tool for HIV+ beneficiaries, WEI/B also instituted data sharing and discussion making as part of the weekly CCW meetings in order to effectively monitor and track performance of CCWs and also prompt them to take actions that bring better results.

“Once we made data an integral part of the CCW meetings, they saw it helpful and encouraging in their journey to achieve results. The feedback from the data in the HIV+ database helped the CCWs understand a clear picture of the overall situation on the children and helped them to prioritize make decisions on their weekly plans and making. It was that simple” - Project Coordinator, ANDA (Manica).

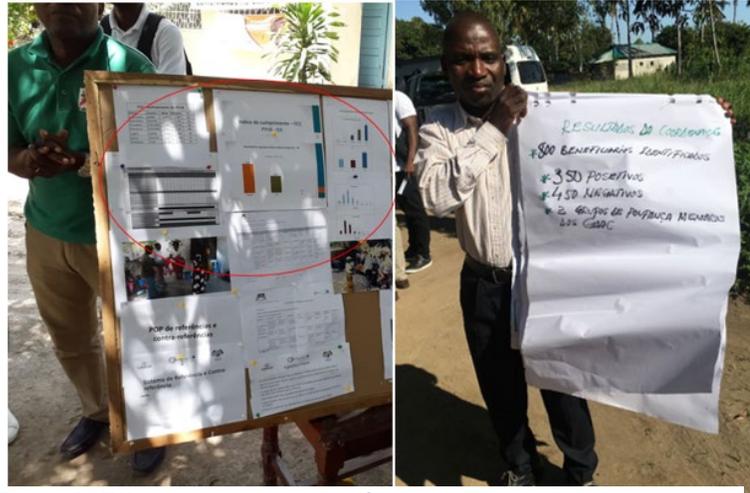


Figure: LCCW showing the results of children served during the monthly CCW & LIP meeting (left) and during a fortnightly Cafe TARV meeting at HU

3. Health Impact

Key performance indicators	Life of Project
Number of children and caregivers receiving primary health services	188,321
HIV testing referrals	21,476
HIV/GBV Primary prevention	37,400
Number of HIV+ OVC and Caregivers supported	26,250
Number of children + caregivers returned to treatment after abandonment	879
Number of caregivers of OVC who participated in nutrition demonstration sessions	14,764
Number of nutritionally rehabilitated OVCs	7,591
Number of Caregivers who participated in the HIV status disclosure sessions	11,737
Number of OVCs who learned their HIV status through their caregiver	6,719
Number of counter references received from clinical partners (EGPAF, ECHO, PASSOS, FGH, M2M)	7,701

4. Innovations and Lasting Impact

- A major milestone in child protection was when WEI/B’s **safe space** model—which FCC/DREAMS uses for AGYW to build their social assets, improve decision-making skills and ability to negotiate for safe sex—was acknowledged by MGCAS as a **key intervention contributing the reduction of early marriages**.¹
- A focus on **layering HIV education on parenting sessions**—particularly topics on disclosure, stigma and discrimination—supported caregivers to **discuss adherence issues and the root causes**. This enabled CCWs to identify households requiring additional PSS and treatment literacy

¹ During the Social Welfare National Coordination Meeting on OVC (NUMCOV) Annual Meeting in December 2018, Gaza.

and to provide more adherence support during home visits. Parenting sessions with adolescents presents an opportunity for the children to talk to their parents about their fears regarding life, HIV, ART and family planning.

- **Multisectoral approaches to Community Health and Nutritional Assessments (CHNAs) and Paragem Única** (see Health section for description of these innovative approaches) increased the understanding and appreciation of OVC situations by Ministry of Justice as these outgoing approaches brought them in touch with OVC realities within their communities for example in understanding the structural barriers of birth registration for OVC.

5. Resiliency Strengthening Successes

- **Promoted productive behaviours to strengthen household resiliency.** WEI/B's household economic strengthening approaches moved OVC households from a state of vulnerability to resilience. Specifically, FCC engaged female and male caregivers to address unequal access to resources and limited involvement in decision-making by women. WEI/B and its LIPs recognized that Village Savings and Loans Associations (VSLA) are a key entry point to increase resiliency. Since working with highly vulnerable families, WEI/B also recognized the need to include a PLUS (+) component—i.e. the '+' goal was to layer on additional non-financial wraparound services, trainings, and support services to more effectively strengthen overall household economic resiliency. The enhancements to the methodology, which included **layering** additional information and services became known as our **VSLA+ model**.
- Over the 4-year VSLA implementation period (2016-2020), FCC initiated VSLA+ groups maintained, on average, a 95% meeting attendance rate and 96% membership retention rate, clear indicators of satisfaction. VSLA+ group members gained knowledge and skills to allow them to borrow and invest in various small-scale businesses, and to improve the overall wellbeing of their families. By 2020, FCC had supported the establishment of **881 VSLA+ groups** with a total enrolment of **28,179 caregivers of OVC**, with indirect benefits reaching more than 150,000 beneficiaries through the VSLA+ interventions cumulatively. The total of fund portfolio in savings was \$301,092 with loans values of \$281,445.
- **VSLA+ groups served as FCC's most useful platform to layer on other non-financial services.** FCC's community-level trained volunteers (i.e., Community Facilitators) were trained to facilitate sessions on GBV, parenting education, health and nutrition education and rehabilitation, including cooking demonstrations. WEI/B attributes this **layered approach**, whereby participants gain access to other essential interventions, as a highly effective strategy for group retention, cohesion, and increased access to critical services to improve the protection and wellbeing of themselves and their families. As a result of this layered approach, WEI/B-FCC reached a total of 18,392 **caregivers with up to 10-hours of GBV related information sessions**, 14,764 with **nutrition education and rehabilitation** and 42,483 caregivers with **parenting education**.
- *"These services that we receive [in VSLA+ groups] respond to our needs and those of our families without being a burden in terms of time commitment. For example, we meet once a week, have a parenting session or debate for an hour, then we do our savings and lending then go back to our own things. However, the benefits are beyond the savings. We have also all managed to get linked to HIV testing and Family planning during mobile brigades facilitated by ANDA [FCC implementing partner]."* - VSLA+ Caregiver, Manica.

- **Strengthened Youth Resiliency:** WEI/B designed and rolled out its **Youth Economic Strengthening (YES) model to promote positive youth development**, reduce vulnerability, and strengthen resiliency. Specifically, the YES model equipped youth with foundational life skills—including communication, negotiation, and leadership—and financial literacy and vocational skills to empower them to make healthy decisions and lead productive lives. Activities engaged both sexes, and where needed, created differentiated approaches that ensured that both sexes could fully engage and openly discuss issues related to gender inequalities and harmful practices, such as GBV.
- FCC established 31 YES Clubs, which served as a powerful platform to deliver integrated nutrition, GBV sessions and screening, HIV sensitization and screening, and parenting education to 3,331 Youth. WEI/B also partnered with Young Africa, an organization that empowers young people through skills training for employability and entrepreneurship. Young Africa provided scholarships (significantly reduced tuition) to YES Club members and these youth become linked to 6 to 9 month vocational training program in various skills areas. WEI/B and its FCC project partners also piloted a model to further support Youth to gain more access, opportunities and skills to successfully enter the work force. This included establishing partnerships with seasoned local artisans to teach technical and business skills and provide professional mentorship to Youth in their communities.
- **Improved retention of HIV positive beneficiaries in care and treatment:** VSLA+ also served as a mechanism to circumvent barriers to adherence (e.g., food, nutrition, transport to the health facility). In 2019, in Zambezia, FCC and LIPs teamed up with clinical partners' (FGH and M2M) community cadres to mobilize HIV positive caregivers from existing community adherence support groups, known locally as GAACS, to join VSLA+ groups. This approach was extended to other FCC project sites and within one year, by 2020, **4,526 HIV+ members from 39 GAACs across FCC's project districts had either joining existing groups or initiating their own VSLA+ groups.**

6. Other achievements:

- > 250,000 **empowered children, adolescents and caregivers** able to access core services.
- A **robust network of community cadre** (> 1.900) able to coordinate and deliver services with other health and community structures.
- **Functional clinic community referral networks** & partnerships for coordinated service delivery across the HIV cascade across 15 districts in 4 provinces.
- **15 local partners better able to implement evidenced-based OVC models** and use data to plan coordinated service delivery within an integrated referral network and case management system.
- **Strengthened local government departments** (e.g. SDSMAS) in HIV sensitive case management; with increased capacity to coordinate OVC services for HIV infected and affected families.

**SIGNED DISCLOSURES OF CONFLICTS OF INTEREST FROM
 EVALUATION TEAM MEMBERS**

**TEMPLATE: USAID Disclosure of Real or Potential Conflict of Interest
 for External Evaluation Team Members**

Name	James Allen
Title	Co-Investigator
Organization	University of Michigan
Evaluation Position	<input type="checkbox"/> Team Leader <input checked="" type="checkbox"/> Team member
Evaluation Award Number <i>(contract or other instrument)</i>	AID-OAA-L-12-00001, AID-OAA-LA-16-0004
USAID Activity(s) Evaluated <i>(Include activity name(s), implementer name(s) and award number(s), if applicable)</i>	PEPFAR-funded Força à Comunidade e Crianças (FCC) program in Mozambique implemented by World Education Initiative (WEI) / Bantwana
I have real or potential conflicts of interest to disclose.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>If yes answered above, I disclose the following facts:</p> <p><i>Real or potential conflicts of interest may include, but are not limited to:</i></p> <ol style="list-style-type: none"> 1. Close family member who is an employee of the USAID operating unit managing the activity(s) being evaluated or the implementing organization(s) whose activity(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose activities are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the activity(s) being evaluated, including involvement in the activity design or previous iterations of the activity. 	

<p>CONTINUED</p> <p>If yes answered above, I disclose the following facts:</p> <p><i>Real or potential conflicts of interest may include, but are not limited to:</i></p> <ol style="list-style-type: none"> 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose activity(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose activity(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular activities and organizations being evaluated that could bias the evaluation. 	
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I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.

Date	11/01/2022
Signature	<i>James E Allen IV</i>

TEMPLATE: USAID Disclosure of Real or Potential Conflict of Interest for External Evaluation Team Members

Name	Arlete Mahumane
Title	Co-Investigator
Organization	Beira Operational Research Center
Evaluation Position	<input type="checkbox"/> Team Leader <input checked="" type="checkbox"/> Team member
Evaluation Award Number <i>(contract or other instrument)</i>	AID-OAA-L-12-00001, AID-OAA-LA-16-0004
USAID Activity(s) Evaluated <i>(Include activity name(s), implementer name(s) and award number(s), if applicable)</i>	PEPFAR-funded Força à Comunidade e Crianças (FCC) program in Mozambique implemented by World Education Initiative (WEI) / Bantwana
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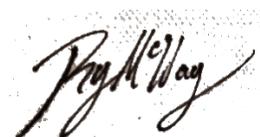
Date	November 1 st , 2022
Signature	

TEMPLATE: USAID Disclosure of Real or Potential Conflict of Interest for External Evaluation Team Members

Name	Ryan McWay
Title	Research Associate
Organization	University of Michigan
Evaluation Position	<input type="checkbox"/> Team Leader <input checked="" type="checkbox"/> Team member
Evaluation Award Number <i>(contract or other instrument)</i>	AID-OAA-L-12-00001, AID-OAA-LA-16-0004.
USAID Activity(s) Evaluated <i>(Include activity name(s), implementer name(s) and award number(s), if applicable)</i>	PEPFAR-funded Força à Comunidade e Crianças (FCC) program in Mozambique implemented by World Education Initiative (WEI) / Bantwana
I have real or potential conflicts of interest to disclose.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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<p>CONTINUED</p> <p>If yes answered above, I disclose the following facts:</p> <p><i>Real or potential conflicts of interest may include, but are not limited to:</i></p> <ol style="list-style-type: none"> 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose activity(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose activity(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular activities and organizations being evaluated that could bias the evaluation. 	
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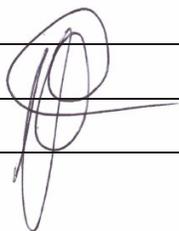
Date	Oct. 30 th , 2020
Signature	

TEMPLATE: USAID Disclosure of Real or Potential Conflict of Interest for External Evaluation Team Members

Name	James Riddell IV, MD
Title	Clinical Professor
Organization	University of Michigan Medical School
Evaluation Position	<input type="checkbox"/> Team Leader <input checked="" type="checkbox"/> Team member
Evaluation Award Number <i>(contract or other instrument)</i>	AID-OAA-L-12-00001, AID-OAA-LA-16-0004
USAID Activity(s) Evaluated <i>(Include activity name(s), implementer name(s) and award number(s), if applicable)</i>	PEPFAR-funded Força à Comunidade e Crianças (FCC) program in Mozambique implemented by World Education Initiative (WEI) / Bantwana
I have real or potential conflicts of interest to disclose.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
If yes answered above, I disclose the following facts: <i>Real or potential conflicts of interest may include, but are not limited to:</i> 1. Close family member who is an employee of the USAID operating unit managing the activity(s) being evaluated or the implementing organization(s) whose activity(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose activities are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the activity(s) being evaluated, including involvement in the activity design or previous iterations of the activity.	

<p>CONTINUED</p> <p>If yes answered above, I disclose the following facts:</p> <p><i>Real or potential conflicts of interest may include, but are not limited to:</i></p> <ol style="list-style-type: none"> 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose activity(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose activity(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular activities and organizations being evaluated that could bias the evaluation. 	
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I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.

Date	10/31/2022
Signature	

TEMPLATE: USAID Disclosure of Real or Potential Conflict of Interest for External Evaluation Team Members

Name	Dean Yang
Title	Professor
Organization	University of Michigan
Evaluation Position	<input checked="" type="checkbox"/> Team Leader <input type="checkbox"/> Team member
Evaluation Award Number <i>(contract or other instrument)</i>	AID-OAA-L-12-00001, AID-OAA-LA-16-0004
USAID Activity(s) Evaluated <i>(Include activity name(s), implementer name(s) and award number(s), if applicable)</i>	PEPFAR-funded Força à Comunidade e Crianças (FCC) program in Mozambique implemented by World Education Initiative (WEI) / Bantwana
I have real or potential conflicts of interest to disclose.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>If yes answered above, I disclose the following facts:</p> <p><i>Real or potential conflicts of interest may include, but are not limited to:</i></p> <ol style="list-style-type: none"> 1. Close family member who is an employee of the USAID operating unit managing the activity(s) being evaluated or the implementing organization(s) whose activity(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose activities are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the activity(s) being evaluated, including involvement in the activity design or previous iterations of the activity. 	

<p>CONTINUED</p> <p>If yes answered above, I disclose the following facts:</p> <p><i>Real or potential conflicts of interest may include, but are not limited to:</i></p> <ol style="list-style-type: none"> 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose activity(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose activity(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular activities and organizations being evaluated that could bias the evaluation. 	
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I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.

Date	10/31/22
Signature	<i>Dean Yang</i>

TEMPLATE: USAID Disclosure of Real or Potential Conflict of Interest for External Evaluation Team Members

Name	Hang Yu
Title	Assistant Professor
Organization	Peking University
Evaluation Position	Team member
Evaluation Award Number <i>(contract or other instrument)</i>	AID-OAA-L-12-00001, AID-OAA-LA-16-0004
USAID Activity(s) Evaluated <i>(Include activity name(s), implementer name(s) and award number(s), if applicable)</i>	PEPFAR-funded Força à Comunidade e Crianças (FCC) program in Mozambique implemented by World Education Initiative (WEI) / Bantwana
I have real or potential conflicts of interest to disclose.	No
If yes answered above, I disclose the following facts: <i>Real or potential conflicts of interest may include, but are not limited to:</i> <ol style="list-style-type: none"> 1. Close family member who is an employee of the USAID operating unit managing the activity(s) being evaluated or the implementing organization(s) whose activity(s) are being evaluated. 2. Financial interest that is direct, or is significant though indirect, in the implementing organization(s) whose activities are being evaluated or in the outcome of the evaluation. 3. Current or previous direct or significant though indirect experience with the activity(s) being evaluated, including involvement in the activity design or previous iterations of the activity. 	
CONTINUED	

<p>If yes answered above, I disclose the following facts:</p> <p><i>Real or potential conflicts of interest may include, but are not limited to:</i></p> <ol style="list-style-type: none"> 4. Current or previous work experience or seeking employment with the USAID operating unit managing the evaluation or the implementing organization(s) whose activity(s) are being evaluated. 5. Current or previous work experience with an organization that may be seen as an industry competitor with the implementing organization(s) whose activity(s) are being evaluated. 6. Preconceived ideas toward individuals, groups, organizations, or objectives of the particular activities and organizations being evaluated that could bias the evaluation. 	
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I certify (1) that I have completed this disclosure form fully and to the best of my ability and (2) that I will update this disclosure form promptly if relevant circumstances change. If I gain access to proprietary information of other companies, then I agree to protect their information from unauthorized use or disclosure for as long as it remains proprietary and refrain from using the information for any purpose other than that for which it was furnished.

Date	11/10/2022
Signature	<i>Hang Yu</i>

**ALL DATA COLLECTION AND ANALYSIS TOOLS USED, SUCH
AS QUESTIONNAIRES, CHECKLISTS, SURVEY INSTRUMENTS,
AND DISCUSSION GUIDES**

Table 1: Outcome Variables and Definitions

Variable	Obs. Level	Definition
Panel A. Attrition		
Followup Survey Success	Household	Indicator: Successful followup of household
Panel B. Household Balance		
OVC Criteria 1	Household	Indicator: If a household has children and a grandparent is the household head
OVC Criteria 2	Household	Indicator: Ratio of children to adults ≤ 4
OVC Criteria 3	Household	Indicator: Have school aged children and school aged children are not in school
OVC Criteria 4	Household	Indicator: Household eats less than 2 meals a day
OVC Criteria 5	Household	Indicator: Household goes some days without food
OVC Criteria 6	Household	Indicator: Household's primary income source is illegal or do not have a source of income
OVC Criteria 7	Household	Indicator: Have chronically ill household members
OVC Criteria 8	Household	Indicator: Have HIV positive household member
OVC Criteria 9	Household	Indicator: Have household member on ART medications
OVC Criteria 10	Household	Indicator: Have orphaned children
OVC Criteria 11	Household	Indicator: Have adults that died of chronic illness in the last 5 years
Panel C. Local Implementing Partner (LIP) Services		
Heard of FCC	Household	Indicator: Household has heard of the Local Implementing Partners (LIP)

Variable	Obs. Level	Definition
Visited by Case Worker	Household	Indicator: Household has been visited by a Care Case Worker
Received Services	Household	Indicator: Household has received services from the Local Implementing Partners (LIP)
Panel D. HIV Testing		
Combined HIV Testing Measure	Household	Indicator: Household self-reported HIV testing in past 12 months or has redeemed at least 1 testing coupon
Self-Reported HIV Testing	Household	Indicator: Household self-reported HIV testing in past 12 Months
Coupon Redemption for HIV Testing	Household	Indicator: Household has redeemed at least 1 testing coupon
Panel E. School Attendance		
Self-Reported School Attendance	Child	Indicator: Household self-reported that child ages 6-17 currently attends school
Directly-Observed School Attendance	Child	Indicator: Field team directly observed child ages 6-17 currently attending school
Panel F. Welfare Measures		
Life Satisfaction	Adult	On a scale of 0-10 with 10 representing the best possible life, where are you on this scale at this time?
Household Asset Index	Household	Index: The first principle component of indicating owning at least 1 of the following household assets: beds, table, mobile phone, radio, television, bike, motorbike, car, iron machine, freezer, fridge, sewing machine, clock (wall, wrist, or pocket) and solar panel
Panel G. Anti-retroviral Treatment (ART)		
ART Usage	Individual	Indicator: Currently takes anti-retroviral medicines

Variable	Obs. Level	Definition
High ART Adherence	Individual	Indicator: ART adherence 100% in the last 30 days
Panel H.1. Overall HIV Knowledge		
HIV Knowledge Index	Adult	Index: Overall HIV knowledge covering sub-categories: general HIV knowledge, correct forms of transmission, transmission myths, protection methods, and knowledge about HIV treatment
Panel H.2. General HIV Knowledge		
General HIV Knowledge Index	Adult	Index: General knowledge of HIV.
Heard of HIV	Adult	Indicator: Has heard of HIV/AIDS.
Possible for Infected Person to Look Healthy	Adult	Indicator: Believe it is possible for HIV infected persons to look healthy.
Possible for Infected Person to Feel Healthy	Adult	Indicator: Believe it is possible for HIV infected persons to feel healthy.
HIV is Curable	Adult	Indicator: Believe HIV is a curable disease.
Untreated HIV Leads to AIDS	Adult	Indicator: Believe if HIV is untreated then it will lead to AIDS.
Length for Untreated HIV to AIDS	Adult	Indicator: Believe it takes 10 years for untreated HIV infected persons to develop AIDS. Coded as correct is absolute difference of answer and correct answer is below sample median.
Length of Survival for Untreated AIDS	Adult	Indicator: Believe it takes 3 years for untreated AIDS infected persons to die. Coded as correct is absolute difference of answer and correct answer is below sample median.
Panel H.3. HIV Transmission Knowledge		
Correct Forms of Transmission Index	Adult	Index: Knowledge of the correct forms of HIV transmission

Variable	Obs. Level	Definition
HIV Transmitted by Sexual Behavior	Adult	Indicator: Believe HIV is transmitted via sexual behavior
HIV Transmitted by Blood Clots	Adult	Indicator: Believe HIV is transmitted via blood clots
HIV Transmitted via Pregnancy	Adult	Indicator: Believe HIV is transmitted from mother to child via pregnancy
HIV Transmitted via Child Delivery	Adult	Indicator: Believe HIV is transmitted from mother to child via child delivery
HIV Transmitted by Breastfeeding	Adult	Indicator: Believe HIV is transmitted from mother to child via breastfeeding
Panel H.4. HIV Myths of Transmission Knowledge		
Transmission Myth Index	Adult	Index: Belief in transmission myths of HIV
HIV Transmitted by Mosquito Bites	Adult	Indicator: Believe HIV is transmitted via mosquito bites
HIV Transmitted by Hand-Shakes with Infected People	Adult	Indicator: Believe HIV is transmitted via hand shakes with an HIV infected person
HIV Transmitted by Kissing Infected People	Adult	Indicator: Believe HIV is transmitted via kissing with an HIV infected person
HIV Transmitted by Sharing Food with Infected People	Adult	Indicator: Believe HIV is transmitted via sharing food with an HIV infected person
HIV Transmitted via Witchcraft or Supernatural	Adult	Indicator: Believe HIV is transmitted via witchcraft or other supernatural events
Panel H.5. HIV Protection Methods Knowledge		
Protection Methods Index	Adult	Index: Knowledge of protection methods to prevent HIV
Heard of Condoms	Adult	Indicator: Has heard of condoms
Knows Where to Buy Condoms	Adult	Indicator: Knows where to buy condoms
Knows Where to Obtain Free Condoms	Adult	Indicator: Knows where to obtain condoms for free
Condoms Reduce HIV	Adult	Indicator: Believes that

Variable	Obs. Level	Definition
Transmission		condoms reduce transmission of HIV/AIDS
Reduce HIV Risk by Monogamous Sex with Uninfected Person	Adult	Indicator: Believes can reduce HIV risk by having sex with only one partner who is uninfected
Reduce HIV Risk by not having Sex with Infected Person	Adult	Indicator: Believes can reduce HIV risk by not having sex with an HIV infected person
Panel H.6. HIV Treatment Knowledge		
Knowledge about HIV Treatment Index	Adult	Index: Knowledge of treatments for HIV/AIDS
Effective HIV Treatment Exists	Adult	Indicator: Believes that an effective treatment for HIV exists
Know Name of Treatment	Adult	Indicator: Knows that name of an HIV treatment
Know of Medicines Used for HIV/AIDS	Adult	Indicator: Knows of medicine used by doctors and nurses to treat HIV/AIDS
Infected Persons Should Take ART regardless of Feeling Sick	Adult	Indicator: Believes HIV infected persons should take ART regardless of feeling sick
Know Where to Receive HIV Treatment	Adult	Indicator: Knows where to receive HIV treatment
Think Treatment Expensive at Local Health Center	Adult	Indicator: Believes that HIV treatment is expensive at their local health center
Treatment can Help Infected Persons Stay Healthy	Adult	Indicator: Believes HIV treatment can help HIV infected persons stay healthy
Treatment can Help Prolong Infected Persons' Life	Adult	Indicator: Believes HIV treatment can help HIV infected persons prolong their lives
Treatment Prevents HIV Transmission	Adult	Indicator: Believes HIV treatment helps prevent the transmission of HIV/AIDS
Panel I. HIV Negative Stigmatizing Attitudes		
HIV Stigma Attitude Index	Adult	Index: Negative stigmatizing attitudes

Variable	Obs. Level	Definition
Buy Groceries from Infected Person	Adult	Indicator: Would buy groceries from an HIV infected person
Keep Infected Family Member a Secret	Adult	Indicator: If they had an HIV-positive family member, they would keep it a secret
Care for Infected Family Member in Own Home	Adult	Indicator: Would care for an HIV-positive family member in their own home
Not Sick Infected Teacher Should be Allowed to Teach	Adult	Indicator: Believe HIV infected teachers who are not sick should be allowed to teach
Panel J. HIV Positive Stigmatizing Attitudes		
12-14 Year Olds be Taught Condoms Prevent HIV	Adult	Indicator: Believe school age children ages 12-14 should be taught how condoms prevent HIV transmission
Justified for Woman to Ask Husband with STI to Use a Condom	Adult	Indicator: Believe a woman is justified to ask husband who may have sexual transmitted disease to use a condom
Justified for Woman to have Sex with Husband who is Sleeping with Others	Adult	Indicator: Believe a woman is justified to have sex with husband who is sleeping with others
Panel K. Sexual Behavior		
Sexual Behavior Index	Adult	Index: Good sexual behavior
Count of Lifetime Sexual Partners	Adult	Lifetime number of sexual partners
Count of Sexual Partners in Past 12 Months	Adult	Number of sexual partners in the past 12 months
Sexual Partners Tested for HIV	Adult	Indicator: Know that their sexual partner has been tested for HIV
Never had Sex with Infected Person	Adult	Indicator: Believe they have never had sex with an HIV infected person
Currently Own Condoms	Adult	Indicator: Currently owns condoms
Always Use Condoms During Sex	Adult	Indicator: Always uses condoms during sex
[Men Only]: Never had Male	Adult	Indicator: [For men only] Have

Variable	Obs. Level	Definition
Partner		never had sex with a man
Never Paid for Sex	Adult	Indicator: Have never paid someone in exchange for sex
Never been Paid for Sex	Adult	Indicator: Have never accepted payment from someone in exchange for sex
Additional Analyses		
w2_v6	Household	Indicator: A HH member is HIV+
w2_buy	Household	Indicator: Bought any investments in past 12 months
w2_sell	Household	Indicator: Sold any investments in past 12 months
w2_v5_nonmiss	Household	HH monthly income, replacing nulls w/ zero
w2_k26_hh	Household	Indicator: Anyone in HH received medical assistance or visited a clinic (not ART clinic)
w2_aga18_hh	Household	Indicator: Anyone in HH chronically ill
w2_grade_ontrack	Child	Indicator: Child on Track for Grade Progression

Table 2: HIV Knowledge and Attitudes Endline Survey Questions

These endline survey questions provide estimates of intermediate outcomes that are possible mechanisms of primary outcomes. We measured impacts of the FCC program on these outcomes in four groups or “families”: 1) HIV-related knowledge, 2) HIV-related stigmatizing attitudes, 3) other positive HIV-related attitudes, and 4) sexual behavior.

1. HIV-related knowledge. Questions are indicators and are coded as 1 if answered correctly, and 0 otherwise. (Correct answers are in parentheses below, with additional detail as needed.)

- J03: Have you ever heard of an infection called HIV? (Yes)
- J05: Can HIV be transmitted from one person to another through sex behaviors? (Yes)
- JA9: Can HIV be transmitted from one person to another through blood contact? (Yes)
- J06: Can people reduce their chance of getting HIV by having just one uninfected sexual partner who has had no other sexual partners? (Yes)
- J06a: Can people reduce their chance of getting HIV by not having sexual intercourse at all? (Yes)
- J07: Can people get HIV from mosquito bites? (No)
- J07a: Can people get HIV from shaking hands with an infected person? (No)
- J07b: Can people get HIV from kissing an infected person? (No)
- J14: Can people get HIV from sharing food with a person who has HIV? (No)
- J15: Can people get HIV via witchcraft or other supernatural means? (No)
- J21: Can HIV be transmitted from a mother to her baby during pregnancy? (Yes)
- J22: Can HIV be transmitted from a mother to her baby during delivery? (Yes)
- J23: Can HIV be transmitted from a mother to her baby by breastfeeding? (Yes)
- J16: Is it possible for a person who looks healthy to have HIV? (Yes)
- J16a: Is it possible for a person who feels healthy to have HIV? (Yes)
- J08: Have you ever heard of a condom? (Yes)
- J09: Do you know where to buy condoms? (Yes)
- J10: Do you know where to obtain free condoms? (Yes)
- J11: Do you think people can reduce the risk of transmission of HIV if they use condoms whenever they have sex? (Yes)

Indicator for knowing where one can get tested for HIV. Coded from question J24: Do you know of a place where people can go to get tested for HIV? (and answering Yes), and J25: If yes, where can people get tested for HIV? (correctly naming a nearby ART site).

- JA1: Do you know if there are any special medicines that a doctor or nurse can give a woman infected with HIV, to reduce the risk of mother-to-baby transmission? (Yes)
- J26: Is there an effective treatment for HIV? (Yes)
- J26a: If yes, do you know what the treatment is called? (Anti-retroviral therapy, or ART)
- J27: Do you know of a place where people can receive treatment for HIV? (Yes)
- J29: Can HIV be cured? (No)
- JA5: Do you think treatment for HIV will be expensive at the local health center? (No)
- JA6: Do you think treatment for HIV at the local health center can help patients stay healthy? (Yes)
- JA7: Do you think treatment for HIV at the local health center can help patients live for as long as uninfected people? (Yes)

JA8: Do you think treatment for HIV at the local health center can prevent HIV transmission? (Yes)

JA13: For people infected with HIV, should they take medication even if they don't feel sick? (Yes)

J28: If HIV is left untreated can it cause AIDS (deficiency of the immune system that can lead to severe infections and death)? (Yes)

JA11: If not treated, how long do you think it takes for an HIV infected person to develop AIDS (deficiency of the immune system that can lead to severe infections and death)? (Exact answer is 10 years. Coded as correct if absolute difference between respondent's answer and 10 is below sample median in endline survey.)

JA12: If not treated, how long can a person sick with AIDS survive? (Exact answer is 3 years. Coded as correct if absolute difference between respondent's answer and 3 is below sample median in endline survey.)

2. HIV-related stigmatizing attitudes. Questions are indicators and are coded as 1 if answer reveals lack of HIV-related stigma, and 0 otherwise. (Answers revealing lack of stigma are in parentheses below, with additional detail as needed.)

J17: Would you buy fresh vegetables from a shopkeeper or vendor if you knew that this person had HIV? (Yes)

J18: If a member of your family got infected with HIV, would you want it to remain a secret? (No)

J19: If a member of your family became sick with AIDS would you be willing to care for them in your own household? (Yes)

J20: In your opinion, if a teacher has HIV but is not sick, should they be allowed to continue teaching at school? (Yes)

3. Other positive HIV-related attitudes. Questions are indicators and are coded as 1 if answer indicates a "positive" HIV-related attitude, and 0 otherwise. (Answers considered "positive" are in parentheses.)

J13: Should children age 12-14 be taught about using a condom to avoid getting HIV? (Yes)

JA2: If a woman knows that her husband has an illness that is sexually transmitted, is it justified for her to ask her husband to use a condom in their relationship? (Yes)

JA3: It is justified for a wife to refuse to have sexual relations with her husband if she knows that he has sex with other women? (Yes)

4. Sexual behavior

L03: How many sexual partners have you had in your lifetime? (count)

L04: How many sexual partners have you had in the last 12 months? (count)

L05: Have any of your partners ever been tested for HIV? (1 = yes, 0 = no)

L06: Have you ever had sex with someone who you know to have HIV? (1 = yes, 0 = no)

L07: Do you currently own condoms? (1 = yes, 0 = no)

Indicator for "always uses a condom when having sex" (1 = yes, 0 = no). (Based on responding "all of the time" to question L08: How often do you or your partner use a condom when having sex? (1 = all of the time, 2 = most of the time, 3 = sometimes, 4 = never).)

Indicator for a man ever having had sex with a male partner (1 = yes, 0 = no). (Constructed for men only. Based on responding "yes" to question L09: I have to ask this of everyone. Do you have or have you ever had sex with a male

partner? This includes your current partner (if you are married this is your spouse) as well as any past sexual partners.)

L11: Have you ever been paid in exchange for sex? (Payment can be in money or in other forms, such as goods.) (1 = yes, 0 = no)

L12: Have you ever paid someone in exchange for sex? (Payment can be in money or in other forms, such as goods.) (1 = yes, 0 = no)

REGRESSION TABLES

Table 3: Balance and Attrition by Treatment Status

	Balance Tests										Attrition		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
	Child or Grandparent as Household Head	Ratio of Children to Adult ≥ 4	School Aged Children not in School	Household Eats < 2 Meals a Day	Household go some Days w/o Food	Primary Income Illegal or None	Have Chronically Ill Household Member	HIV + Household Member	Have a Household Member on ART	Have Orphaned Children	Adult Died of Chronic Illness in Past 5 Years	Baseline In-Migration	Followup Survey Success
Treatment	0.00407 (0.0154)	0.0194 (0.0137)	0.0234 (0.0175)	-0.00248 (0.00364)	0.0195 (0.0276)	-0.00662 (0.00634)	-0.00731 (0.0196)	-0.00583 (0.0146)	0.00916 (0.0137)	0.0105 (0.0198)	-0.000209 (0.0110)	-0.00633 (0.00877)	-0.00587 (0.0120)
FCC-Ambient	-0.0231 (0.0182)	0.0220 (0.0156)	0.0252 (0.0181)	-0.00215 (0.00406)	0.00630 (0.0255)	0.00290 (0.00611)	0.00374 (0.0200)	-0.00690 (0.0161)	0.00834 (0.0139)	0.0258 (0.0231)	0.0149 (0.0121)	-0.00205 (0.00650)	0.0320** (0.0137)
Observations	3.658	3.658	3.658	3.658	3.658	3.658	3.658	3.658	3.658	3.658	3.658	2.370	4.546
R-squared	0.041	0.048	0.077	0.012	0.062	0.031	0.034	0.038	0.036	0.046	0.023	0.014	0.062
Obs level	Household	Household	Household	Household	Household	Household	Household	Household	Household	Household	Household	Household	Household
Control Mean	0.297	0.0706	0.300	0.0149	0.601	0.0215	0.227	0.155	0.121	0.268	0.0911	0.0370	0.800
p-value of test Treatment = FCC-ambient	0.197	0.839	0.935	0.937	0.566	0.0968	0.534	0.937	0.952	0.463	0.231	0.678	0.0169

Notes: Dependent variables in columns 1-11 are indicator variables for household characteristics reported during enrollment of household in the study (May to Nov 2017). Dependent variable in Column 12 is an indicator that a household migrated into the community at baseline. Dependent variable in Column 13 is an indicator that a household was successfully surveyed in the endline survey and included in this paper's analyses (see Appendix section C.2 for details). "Treatment" is indicator equal to one if household randomly assigned to "Treatment" status in Randomization Stage 2, and zero otherwise. Coefficient on Treatment was pre-specified as of primary interest in this study. "FCC-Ambient" is defined analogously for "FCC-ambient" status, and was pre-specified as of secondary interest in this study. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Table 4: Health Center Visits

VARIABLES	(15) w2_k26_hh	(16) w2_k26_hh
DEB Status		0.00152 (0.0186)
Non-DEB Status		-0.00308 (0.0249)
Either Treatment Status	-0.000419 (0.0193)	
Observations	3,477	3,477
R-squared	0.107	0.107
Var label	Indicator: Anyone in HH received medical assistance or visited a clinic not ART	Indicator: Anyone in HH received medical assistance or visited a clinic not ART
Level	Household	Household
Control Mean Dep. Var.	0.674	0.674

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 5: HIV Testing

HYPOTHESIS:	(1) S0	(2) S0	(3) S0	(4) P2
VARIABLES	Coupon Redemption for HIV Testing	Coupon Redemption for HIV Testing	Self-Reported HIV Testing	Combined HIV Testing Measure
Treatment	-0.0212 (0.0182) [0.367]	-0.105 (0.0386) [0.018]	0.0234 (0.0233) [0.450]	0.0222 (0.0193) [0.253]
FCC-ambient	0.0293 (0.0203) [0.250]	0.0328 (0.0443) [0.493]	0.0379 (0.0261) [0.249]	0.0374 (0.0196) [0.060]
Any Minitreatment		-0.0256 (0.0259) [0.346]		
Treatment * Any Minitreatment		0.103 (0.0403) [0.012]		
FCC-ambient * Any Minitreatment		-0.00445 (0.0503) [0.938]		
Observations	3,658	3,658	3,489	3,658
R-squared	0.058	0.060	0.033	0.031
Obs level	Household	Household	Household	Household
Control Mean Dep. Var.	0.263	0.263	0.652	0.721
p-value of test Treatment = FCC-ambient	0.0165	0.000999	0.518	0.422

Notes: Dependent variables are as follows. Columns 1–2: indicator equal to one if someone in household got an HIV test at local health clinic (based on redemption of encouragement coupon for HIV testing), and zero otherwise. Column 3: indicator equal to one if someone in household self-reported in endline survey having gotten an HIV test in last 12 months, and zero otherwise. Column 4: indicator that either the coupon-based or self-reported HIV testing measures is equal to one, and zero otherwise. “Treatment” and “FCC-Ambient” defined in Table 2. “Any Minitreatment” is indicator equal to one if household was assigned to any minitreatment after the endline survey in Randomization Stage 3, and zero otherwise. See Section I for definition of minitreatments. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 6: HIV Diagnosis

VARIABLES	(1) w2_v6	(2) w2_v6
DEB Status		0.0163 (0.0159)
Non-DEB Status		-0.00114 (0.0138)
Either Treatment Status	0.00886 (0.0122)	
Observations	3,437	3,437
R-squared	0.050	0.050
Var label	Is there any HIV+ household member?	Is there any HIV+ household member?
Level	Household	Household
Control Mean Dep. Var.	0.200	0.200

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7: Welfare Outcomes and ART Usage if HIV-Positive

	Welfare Outcomes		Health Care Utilization if HIV-Positive	
	(1)	(2)	(3)	(4)
HYPOTHESIS:	S2	S2	S2	S2
VARIABLES	Life Satisfaction	Household Asset Index	ART Usage	High ART Adherence
Treatment	0.0205 (0.167) [0.922]	-0.158 (0.0985) [0.232]	-0.0134 (0.0143) [0.478]	-0.00517 (0.0303) [0.889]
FCC-ambient	0.177 (0.171) [0.428]	-0.194 (0.0913) [0.119]	0.0142 (0.0114) [0.324]	-0.0316 (0.0344) [0.472]
Observations	3,935	3,658	656	614
R-squared	0.098	0.209	0.057	0.099
Obs level	Adult	Household	Individual	Individual
Control Mean Dep. Var.	4.672	0.595	0.977	0.834
p-value of test Treatment = FCC-ambient	0.148	0.595	0.0944	0.461

Notes: Dependent variables are as follows. Column 1: On a ladder from 1 to 10, with 10 as the best life, where does the respondent place themselves on the ladder. Column 2: the first principal component of ownership of 14 different household assets. Column 3: indicator for using ART if HIV-positive. Column 4: indicator of having not missed a day of using ART in the past 30 days in HIV-positive. “Treatment” and “FCC-Ambient” defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 8: Chronic Illness

VARIABLES	(19) w2_aga18_hh	(20) w2_aga18_hh
DEB Status		0.00472 (0.0119)
Non-DEB Status		0.00331 (0.0149)
Either Treatment Status	0.00412 (0.0100)	
Observations	3,479	3,479
R-squared	0.032	0.032
Var label	Indicator: Anyone in HH chronically ill	Indicator: Anyone in HH chronically ill
Level	Household	Household
Control Mean Dep. Var.	0.117	0.117

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9: Impacts on School Attendance

HYPOTHESIS VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	SI Self-Reported School Attendance	SI Directly-Observed School Enrollment	SI Directly-Observed School Attendance	SI School Enrollment: 2019	SI Log(School Enrollment: 2019)	SI School Enrollment: 2020	SI Log(School Enrollment: 2020)
Treatment	-0.0207 (0.0136) [0.232]	-0.00936 (0.0248) [0.775]	-0.00456 (0.0177) [0.847]	157.1 (522.8) [0.993]	0.0526 (0.0921) [0.669]	64.22 (229.3) [0.761]	-0.0231 (0.0592) [0.724]
FCC-ambient	0.0103 (0.0119) [0.512]	-0.0143 (0.0237) [0.650]	0.0107 (0.0142) [0.856]				
Observations	3,883	3,473	3,473	74	73	74	74
R-squared	0.037	0.045	0.226	0.810	0.886	0.898	0.924
Obs level	Child	Child	Child	School	School	School	School
Control Mean Dep. Var.	0.901	0.440	0.0982	3589	7,856	2984	7,810
p-value of test: Treatment = FCC-ambient	0.0420	0.814	0.387				

Notes: Dependent variables are as follows. Column 1: indicator for self-reporting that school age child (ages 6 – 17) are currently attending school. Column 2: indicator for school age child (ages 6 – 17) being observed enrolled in school through roster checks. Column 3: indicator for school age child (ages 6 – 17) being observed attending school during random attendance checks (available only for students in Manica province). Column 4 and 5: number of students enrolled in the community’s focal school at start of 2019, collected from digitized school rosters (one observation per community), in counts and logs respectively. Column 6 and 7: analogous to columns 4 and 5, but for 2020 schoolyear. Child level outcomes are only for children who are also observed at baseline. For Columns 1-3, “Treatment” and “FCC-Ambient” defined in Table 2. For Columns 4 and after, “Treatment” is an indicator for the community having been randomly assigned as an FCC program community. All regressions control for matched pair fixed effects. Standard errors in parentheses (cols. 1-2: clustered at the community level; cols 3-4 robust standard errors). P-values adjusted for multiple hypothesis testing in square brackets.

Table 10: Impacts on Outcomes Reported by School Principals

	(1)	(2)	(3)	(4)	(5)
HYPOTHESIS:	S1	S1	S1	S1	S1
VARIABLES	Heard of LIP	Contacted by LIP	Receives Financial Support by LIP	Principal Reported School Enrollment: 2019	Log(Principal Reported School Enrollment: 2019)
Treatment	0.0556 (0.0563) [0.329]	0.750 (0.0742) [0.000]	0.389 (0.101) [0.002]	81.94 (245.4) [0.865]	-0.0148 (0.0684) [0.898]
Observations	74	74	74	74	74
R-squared	0.486	0.817	0.644	0.834	0.906
Obs level	School	School	School	School	School
Control Mean Dep. Var.	0.919	0.135	0.405	2498	7.638

Notes: Dependent variables are as follows. All outcomes are from surveys conducted of the principal of each focal school in Jul-Dec 2019. Column 1: indicator for principal having heard of LIP. Column 2: indicator for principal having been contacted by LIP. Column 3: indicator for principal reporting financial support from LIP. Column 4: principal-reported number of students enrolled in the community’s focal school. Column 5: log of outcome in column 4. One observation per community. “Treatment” is an indicator for the community having been randomly assigned as an FCC program community (Randomization Stage 1). All regressions control for matched pair fixed effects. Standard errors in parentheses (cols. 1-2: clustered at the community level; cols 3-4 robust standard errors). P-values adjusted for multiple hypothesis testing in square brackets.

Table 11: Grade Progression

VARIABLES	(23) w2_grade_ontrack	(24) w2_grade_ontrack
DEB Status		0.0121 (0.0238)
Non-DEB Status		-0.0245 (0.0183)
Either Treatment Status	-0.0107 (0.0174)	
Observations	3,009	3,009
R-squared	0.049	0.050
Var label	Indicator: Child on Track for Grade Progression	Indicator: Child on Track for Grade Progression
Level	Child	Child
Control Mean Dep. Var.	0.691	0.691

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 12: Investment Goods

VARIABLES	(7) w2_buy	(8) w2_buy	(9) w2_sell	(10) w2_sell
DEB Status		-0.0476** (0.0210)		-0.0301* (0.0161)
Non-DEB Status		-0.0266 (0.0245)		-0.0204 (0.0152)
Either Treatment Status	-0.0387* (0.0209)		-0.0260* (0.0151)	
Observations	3,658	3,658	3,658	3,658
R-squared	0.048	0.049	0.048	0.049
Var label	Indicator: Bought any investments in past 12 months	Indicator: Bought any investments in past 12 months	Indicator: Sold any investments in past 12 months	Indicator: Sold any investments in past 12 months
Level	Household	Household	Household	Household
Control Mean Dep. Var.	0.257	0.257	0.101	0.101

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 13: Income

VARIABLES	(13) w2_v5_nonmiss	(14) w2_v5_nonmiss
DEB Status		-112.9 (136.0)
Non-DEB Status		-52.46 (130.2)
Either Treatment Status	-87.41 (124.7)	
Observations	3,658	3,658
R-squared	0.071	0.071
Var label	Household monthly income replacing Nulls w/ zero	Household monthly income replacing Nulls w/ zero
Level	Household	Household
Control Mean Dep. Var.	1772	1772

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 14: Spillover Effects on HIV Testing

HYPOTHESIS: VARIABLES	Spillover - Social Proximity			Spillover - Geographic Proximity		
	(1)	(2)	(3)	(4)	(5)	(6)
	S4	S4	S4	S4	S4	S4
	Combined HIV Testing Measure	Self-Reported HIV Testing	Coupon Redemption HIV Testing	Combined HIV Testing Measure	Self-Reported HIV Testing	Coupon Redemption HIV Testing
Treatment	0.0522 (0.0261)	0.0413 (0.0312)	-0.00879 (0.0271)	0.0272 (0.0275)	0.0215 (0.0330)	-0.0367 (0.0318)
FCC-ambient	0.0332 (0.0234)	0.0170 (0.0282)	0.0392 (0.0261)	0.0435 (0.0287)	0.0377 (0.0355)	0.0139 (0.0338)
# of Treatment Households Connected With	0.00699 (0.0187)	0.0279 (0.0191)	-0.0302 (0.0207)			
# of Households Connected With	[0.739]	[0.172]	[0.219]			
# of Treatment Households in 200 Meters	0.00438 (0.00499)	0.000252 (0.00559)	0.00680 (0.00605)	-0.00125 (0.00429)	-0.000254 (0.00574)	0.00403 (0.00368)
# of Treatment Households in 200 to 500 Meters				[0.781]	[0.967]	[0.286]
# of Households in 200 Meters				-0.000121 (0.00246)	1.01e-05 (0.00281)	-0.000154 (0.00253)
# of Households in 200 to 500 Meters				[0.966]	[0.996]	[0.959]
				0.00105 (0.00118)	0.000664 (0.00156)	6.12e-05 (0.00143)
				0.000748 (0.000620)	0.00100 (0.000759)	0.000746 (0.000718)
Observations	2,085	2,000	2,085	3,648	3,479	3,648
R-squared	0.038	0.038	0.060	0.032	0.034	0.059
Obs level	Household	Household	Household	Household	Household	Household
Control Mean Dep. Var.	0.721	0.644	0.281	0.721	0.651	0.263
p-value of test Treatment = FCC-ambient	0.528	0.515	0.0740	0.389	0.475	0.0147

Notes: Dependent variables are as defined in Table 6. “Treatment” and “FCC-Ambient” defined in Table 2. “# of Treatment Households Connected With” measures social proximity through the total number of households a household knows who have Treatment status in their community. “# of Treatment Households in 200 Meters” measures near geographic proximity through the total number of households within 200 meters of the respondent household. “# of Treatment Households in 200 to 500 Meters” measures the intermediate geographic proximity through the total number of households within 200 to 500 meters of the respondent household. Column 1 controls for the total number households this household is connected to in their community (presented in the table). And Column 2 controls for the total number of households that live geographically close to this household within 200 meters, or 200 – 500 meters (presented in the table). All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 15: Knowledge of, Contact with, and Services Provided by LIPs

HYPOTHESIS:	(1)	(2)	(3)
VARIABLES	P1	P1	P1
	Heard of FCC	Visited by Case Worker	Received Services
Treatment	0.137 (0.0253) [0.007]	0.0646 (0.0112) [0.002]	0.107 (0.0209) [0.002]
FCC-ambient	0.117 (0.0275) [0.019]	0.0338 (0.0113) [0.067]	0.0665 (0.0204) [0.095]
Observations	3,658	3,658	3,658
R-squared	0.118	0.072	0.101
Obs level	Household	Household	Household
Control Mean Dep. Var.	0.482	0.0563	0.100
p-value of test Treatment = FCC-ambient	0.312	0.0397	0.00296

Notes: Dependent variables are as follows. Column 1: indicator for having heard of the FCC local implementing partner (LIP) organization. Column 2: indicator for having been visited by the LIP Case Care Worker (CCW). Column 3: indicator for having received any services from the FCC program. “Treatment” is indicator equal to one if household randomly assigned to “Treatment” status in Randomization Stage 2, and zero otherwise. Coefficient on Treatment was pre-specified as of primary interest in this study. “FCC-Ambient” is defined analogously for “FCC-Ambient” status, and was pre-specified as of secondary interest in this study. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 16: HIV-Related Knowledge Panel A

HYPOTHESIS: VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	S3 HIV Knowledge Index	S3 General HIV Knowledge Index	S3 Correct Methods of Transmission Index	S3 Transmission Myth Index	S3 Protection Methods Index	S3 HIV Treatment Index
Treatment	-0.00598 (0.00828)	-0.00602 (0.00961)	-0.00788 (0.0134)	-0.0302 (0.0148)	0.00199 (0.00906)	0.00234 (0.00989)
FCC-ambient	[0.472] -0.00639 (0.00981)	[0.641] -0.00592 (0.0100)	[0.643] -0.0145 (0.0138)	[0.131] -0.0386 (0.0182)	[0.849] -0.00271 (0.00984)	[0.856] 0.0128 (0.0106)
	[0.517]	[0.654]	[0.426]	[0.113]	[0.829]	[0.361]
Observations	3,940	3,940	3,940	3,940	3,940	3,940
R-squared	0.062	0.052	0.039	0.071	0.051	0.065
Obs level	Adult	Adult	Adult	Adult	Adult	Adult
Control Mean Dep. Var.	0.756	0.623	0.831	0.747	0.823	0.772
p-value of test Treatment = FCC-ambient	0.964	0.989	0.615	0.576	0.689	0.256

Notes: Dependent variables are as follows. Column 1: index of overall HIV knowledge. Column 2: index of general HIV knowledge. Column 3: index of correct methods of HIV transmission. Column 4: index of beliefs in myths about HIV transmission. Column 5: index of knowledge of protection methods against HIV. Column 6: index of knowledge of HIV/AIDS treatment. “Treatment” and “FCC-Ambient” defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 17: HIV-Related Knowledge Panel B

HYPOTHESIS: VARIABLES	(1) S3	(2) S3	(3) S3	(4) S3	(5) S3	(6) S3	(7) S3
	Heard of HIV	Possible for Infected Person to Look Healthy	Possible for Infected Person to Feel Healthy	HIV is Curable	Untreated HIV Leads to AIDS	Length for Untreated HIV to AIDS	Length of Survival for Untreated AIDS
Treatment	0.00430 (0.00658)	0.00671 (0.0119)	0.00120 (0.0111)	0.0185 (0.0219)	0.0133 (0.00979)	0.0764 (0.0881)	-0.000928 (0.107)
FCC-ambient	[0.614] 0.00579 (0.00691)	[0.687] 0.0284 (0.00976)	[0.935] 0.0194 (0.0111)	[0.515] 0.0230 (0.0251)	[0.312] -0.00211 (0.0104)	[0.529] -0.0576 (0.0944)	[0.995] -0.0615 (0.131)
	[0.527]	[0.029]	[0.188]	[0.497]	[0.870]	[0.646]	[0.731]
Observations	3,940	3,614	3,601	3,330	3,146	1,637	1,767
R-squared	0.027	0.028	0.034	0.031	0.041	0.249	0.142
Obs level	Adult	Adult	Adult	Adult	Adult	Adult	Adult
Control Mean Dep. Var.	0.968	0.934	0.937	0.175	0.958	1.490	1.454
p-value of test Treatment = FCC-ambient	0.828	0.0459	0.0482	0.797	0.137	0.0460	0.529

Notes: Dependent variables are as follows. Column 1: indicators for having heard of HIV. Column 2: indicator for believing an HIV-infected person can look healthy. Column 3: indicator for believing an HIV-infected person can feel healthy. Column 4: indicator for believing HIV is curable. Column 5: indicator for believing untreated HIV leads to AIDS. Column 6: indicator for correctly knowing the length of time it takes for untreated HIV to become AIDS. Column 7: indicator for correctly knowing the length of survival for untreated AIDS. “Treatment” and “FCC-Ambient” defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 18: HIV-Related Knowledge Panel C

HYPOTHESIS:	(1)	(2)	(3)	(4)	(5)
VARIABLES	S3	S3	S3	S3	S3
	HIV Transmitted by Sexual Behavior	HIV Transmitted by Blood Clots	HIV Transmitted via Pregnancy	HIV Transmitted via Child Delivery	HIV Transmitted by Breastfeeding
Treatment	0.00466 (0.00874) [0.685]	0.00963 (0.00816) [0.393]	0.0274 (0.0120) [0.093]	-0.0103 (0.0147) [0.585]	0.00427 (0.0125) [0.797]
FCC-ambient	-0.00543 (0.00826) [0.613]	0.0107 (0.00867) [0.349]	0.0343 (0.0124) [0.050]	0.0192 (0.0171) [0.383]	0.00224 (0.0137) [0.891]
Observations	3,619	3,564	3,558	3,345	3,457
R-squared	0.026	0.037	0.035	0.052	0.040
Obs level	Adult	Adult	Adult	Adult	Adult
Control Mean Dep. Var.	0.961	0.952	0.919	0.873	0.903
p-value of test Treatment = FCC-ambient	0.238	0.911	0.391	0.0611	0.893

Notes: Dependent variables are as follows. Column 1: indicator for knowing HIV can be transmitted by sexual behavior. Column 2: indicator for knowing HIV can be transmitted by contact with blood. Column 3: indicator for knowing HIV can be transmitted from mother to child via pregnancy. Column 4: indicator for knowing HIV can be transmitted from mother to child via delivery. Column 5: indicator for knowing HIV can be transmitted from mother to child via breastfeeding. “Treatment” and “FCC-Ambient” defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 19: HIV-Related Knowledge Panel D

HYPOTHESES: VARIABLES	(1) S3	HIV Transmitted by Mosquito Bites	(2) S3	HIV Transmitted by Hand-Shakes with Infected People	(3) S3	HIV Transmitted by Kissing Infected People	(4) S3	HIV Transmitted by Sharing Food with Infected People	(5) S3	HIV Transmitted via Witchcraft or Supernatural
Treatment	-0.00490 (0.0186)		0.0180 (0.00979)		0.0105 (0.0153)		0.00566 (0.0114)		0.0177 (0.0150)	
FCC-ambient	[0.836] 0.0146 (0.0237)		[0.169] 0.0186 (0.0108)		[0.596] -0.0174 (0.0174)		[0.705] 0.00699 (0.0124)		[0.367] 0.0418 (0.0172)	
	[0.620]		[0.184]		[0.424]		[0.661]		[0.075]	
Observations	3,260		3,418		3,209		3,430		3,383	
R-squared	0.037		0.025		0.029		0.031		0.104	
Obs level	Adult		Adult		Adult		Adult		Adult	
Control Mean Dep. Var.	0.256		0.0613		0.176		0.0835		0.109	
p-value of test Treatment = FCC-ambient	0.465		0.957		0.0980		0.897		0.0879	

Notes: Dependent variables are as follows. Column 1: indicator for believing HIV can be transmitted via mosquito bites. Column 2: indicator for believing HIV can be transmitted via handshakes with HIV-infected persons. Column 3: indicator for believing HIV can be transmitted via kissing with HIV-infected persons. Column 4: indicator for believing HIV can be transmitted via sharing food with HIV-infected persons. Column 5: indicator for believing HIV can be transmitted via witchcraft or supernatural events. “Treatment” and “FCC-Ambient” defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 20: HIV-Related Knowledge Panel E

HYPOTHESIS: VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	S3	S3	S3	S3	S3	S3
	Heard of Condoms	Knows Where to Buy Condoms	Knows Where to Obtain Free Condoms	Condoms Reduce HIV Transmission	Reduce HIV Risk by Monogamous Sex w/ Uninfected Person	Reduce HIV Risk by not having Sex w/ Infected Person
Treatment	0.00579 (0.00965)	-0.0361 (0.0132)	-0.0188 (0.0106)	0.0148 (0.00974)	0.0241 (0.0121)	-0.00839 (0.0117)
FCC-ambient	[0.636]	[0.040]	[0.163]	[0.262]	[0.131]	[0.812]
	0.0235 (0.00777)	-0.0525 (0.0167)	-0.0289 (0.0113)	0.00503 (0.0110)	0.0208 (0.0114)	0.00847 (0.0135)
	[0.027]	[0.018]	[0.040]	[0.723]	[0.144]	[0.600]
Observations	3,940	3,711	3,708	3,358	3,473	3,403
R-squared	0.027	0.026	0.040	0.034	0.038	0.069
Obs level	Adult	Adult	Adult	Adult	Adult	Adult
Control Mean Dep. Var.	0.936	0.808	0.898	0.919	0.886	0.845
p-value of test Treatment = FCC-ambient	0.0563	0.379	0.465	0.392	0.827	0.474

Notes: Dependent variables are as follows. Column 1: indicator for having heard of condoms. Column 2: indicator for knowing where to buy condoms. Column 3: indicator for knowing where to obtain free condoms. Column 4: indicator for knowing condoms reduce HIV transmission. Column 5: indicator for knowing they can reduce HIV risk by having monogamous sex with an uninfected person. Column 6: indicator for knowing they can reduce HIV risk by not having sex with an HIV-infected person. “Treatment” and “FCC-Ambient” defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 2 I: HIV-Related Knowledge Panel F

HYPOTHESIS: VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	S3	S3	S3	S3	S3	S3	S3	S3	S3
Effective HIV Treatment Exists									
Know Name of Treatment									
Know Name of Medicines Used for HIV/AIDS									
Infected Persons Should Take ART regardless of Feeling Sick									
Know Where to Receive HIV Treatment									
Think Treatment Expensive at Local Health Center									
Treatment can Help Infected Persons Stay Healthy									
Treatment can Help Prolong Infected Persons' Life									
Treatment Prevents HIV Transmission									
Treatment	0.0289 (0.0151) [0.172]	-0.0802 (0.0240) [0.023]	-0.00115 (0.0155) [0.959]	0.0486 (0.0184) [0.056]	0.0328 (0.00958) [0.157]	0.0141 (0.0146) [0.467]	0.0168 (0.0161) [0.430]	0.00975 (0.0167) [0.683]	-0.0636 (0.0277) [0.359]
FCC-ambient	0.0381 (0.0128) [0.040]	-0.0289 (0.0279) [0.406]	0.00346 (0.0138) [0.848]	0.0523 (0.0183) [0.033]	0.0338 (0.0105) [0.018]	0.00655 (0.0132) [0.705]	0.0284 (0.0140) [0.129]	0.0208 (0.0130) [0.235]	-0.0196 (0.0281) [0.573]
Observations	3,597	3,311	3,820	3,600	3,821	3,546	3,668	3,619	3,293
R-squared	0.044	0.053	0.030	0.049	0.027	0.082	0.054	0.051	0.134
Obs level	Adult	Adult	Adult	Adult	Adult	Adult	Adult	Adult	Adult
Control Mean Dep. Var.	0.903	0.678	0.859	0.867	0.919	0.109	0.890	0.905	0.693
p-value of test Treatment = FCC-ambient	0.348	0.0199	0.681	0.783	0.900	0.545	0.304	0.267	0.518

Notes: Dependent variables are as follows. Column 1: indicator for knowing there is an effective HIV treatment. Column 2: indicator for knowing the name of ART. Column 3: indicator for knowing the name of medicines used to fight HIV/AIDS. Column 4: indicator for knowing an HIV-infected person should take ART regardless of feeling sick. Column 5: indicator for knowing where to receive HIV treatment. Column 6: indicator for thinking HIV treatment is expensive at local health center. Column 7: indicator for knowing treatment can help an HIV-infected person stay healthy. Column 8: indicator for knowing treatment can prolong an HIV-infected person's life. Column 9: indicator for knowing treatment prevents HIV transmission. "Treatment" and "FCC-Ambient" defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 22: HIV-Related Stigmatizing Attitudes

HYPOTHESIS:	(1)	(2)	(3)	(4)	(5)
VARIABLES	S3	S3	S3	S3	S3
	HIV Stigma Attitude Index	Buy Groceries from Infected Person	Not Keep Member a Secret	Care for Infected Family Member in Own Home	Infected Teacher Should be Allowed to Teach
Treatment	-0.0135 (0.00505) [0.009]	-0.0139 (0.00991) [0.280]	-0.0281 (0.0196) [0.259]	-0.00506 (0.00313) [0.192]	-0.00330 (0.00657) [0.709]
FCC-ambient	-0.0103 (0.00636) [0.108]	-0.0292 (0.0124) [0.066]	-0.000129 (0.0200) [0.997]	-0.00476 (0.00368) [0.287]	0.000831 (0.00602) [0.919]
Observations	3,820	3,756	3,777	3,801	3,748
R-squared	0.025	0.039	0.048	0.017	0.028
Obs level	Adult	Adult	Adult	Adult	Adult
Control Mean Dep. Var.	0.746	0.858	0.168	0.993	0.965
p-value of test Treatment = FCC-ambient	0.602	0.289	0.0821	0.956	0.613

Notes: Dependent variables are as follows. Column 1: fraction of four questions on HIV-related stigma answered in a non-stigmatizing way. Columns 2-5: for each separate question on HIV-relates stigmatizing attitudes, indicator equal to one if answered in a non-stigmatizing way, and zero otherwise. For full detail on each stigmatizing attitudes question, see Appendix Section E. “Treatment” and “FCC-Ambient” defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 23: Positive HIV-Related Attitudes

	(1)	(2)	(3)	(4)
HYPOTHESIS:	S3	S3	S3	S3
VARIABLES	Positive Stigma Attitudes Index	12-14 Year Olds be Taught Condoms Prevent HIV	Justified for Woman to Ask Husband with STI to Use a Condom	Justified for Woman to Refuse Sex with Husband who is Sleeping with Others
Treatment	-0.0124 (0.0157) [0.431]	0.0279 (0.0239) [0.367]	-3.03e-05 (0.0188) [0.998]	-0.0492 (0.0226) [0.113]
FCC-ambient	-0.00894 (0.0165) [0.589]	0.0146 (0.0267) [0.669]	-0.00943 (0.0206) [0.724]	-0.0437 (0.0264) [0.202]
Observations	3,849	3,501	3,434	3,611
R-squared	0.080	0.053	0.045	0.074
Obs level	Adult	Adult	Adult	Adult
Control Mean Dep. Var.	0.563	0.408	0.769	0.542
p-value of test Treatment = FCC-ambient	0.826	0.579	0.650	0.815

Notes: Dependent variables are as follows. Column 1: indicator for believing 12-14 year olds should be taught condoms prevent HIV. Column 2: indicator for believing it is justified for a woman to ask her husband with an STI to use a condom. Column 3: indicator for believing it is justified for a woman to refuse sex with her husband who is sleeping with other people. “Treatment” and “FCC-Ambient” defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 24: Impact on Sexual Behavior

HYPOTHESIS: VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	S3	S3	S3	S3	S3	S3	S3	S3
	Count of Sexual Partners in Past 12 Months	Sexual Partners Tested for HIV	Never had Sex w/ Infected Person	Currently Own Condoms	Always Use Condoms During Sex	[Men Only]: Never had Male Partner	Never Paid for Sex	Never been Paid for Sex
Treatment	-0.104 (0.0338)	0.0299 (0.0204)	0.000943 (0.00643)	0.00216 (0.0183)	0.00983 (0.0113)	0.000523 (0.00979)	0.00103 (0.00830)	-0.0158 (0.0103)
FCC-ambient	[0.060]	[0.282]	[0.899]	[0.928]	[0.503]	[0.966]	[0.919]	[0.259]
	-0.0893 (0.0395)	0.0479 (0.0223)	-0.0167 (0.00929)	-0.0150 (0.0187)	0.0178 (0.0139)	0.0186 (0.00910)	-0.0237 (0.0134)	0.000791 (0.0121)
	[0.109]	[0.104]	[0.158]	[0.529]	[0.303]	[0.087]	[0.140]	[0.959]
Observations	3,889	3,336	3,864	3,891	3,800	1,184	3,801	3,798
R-squared	0.012	0.060	0.026	0.046	0.041	0.031	0.062	0.046
Obs level	Adult	Adult	Adult	Adult	Adult	Adult	Adult	Adult
Control Mean Dep. Var.	1.122	0.575	0.951	0.224	0.0939	0.975	0.916	0.912
p-value of test Treatment = FCC-ambient	0.696	0.401	0.0786	0.349	0.596	0.143	0.143	0.212

Notes: Dependent variables are as follows. Column 1: count of the number of sexual partners in the last 12 months. Column 2: indicator for sexual partner having tested for HIV. Column 3: indicator for never having had sex with an HIV-infected person. Column 4: indicator for currently owning condoms. Column 5: indicator for always using condoms during sex. Column 6: (for men only; set to missing for women) indicator that respondent has never had a male sex partner. Column 7: indicator for having never paid for sex. Column 8: indicator for having never having been paid for sex. “Treatment” and “FCC-Ambient” defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 25: Balance with Respect to Randomization Stage 3 Minitreatments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Child or Grandparent as Household Head	Ratio of Children to Adult ≥ 4	School Aged Children not in School	Household Eats < 2 Meals a Day	Household go some Days w/o Food	Primary Income Illegal or None	Have Chronically Ill Household Member	HIV + Household Member	Have a Household Member on ART	Orphaned Children	Have Adult Died	Baseline In-Migration
Treatment	0.00388 (0.0154)	0.0202 (0.0138)	0.0239 (0.0175)	-0.00245 (0.00364)	0.0188 (0.0276)	-0.00676 (0.00635)	-0.00705 (0.0196)	-0.00575 (0.0145)	0.00886 (0.0136)	0.00985 (0.0198)	-0.000601 (0.0110)	-0.00688 (0.00873)
Anti-Stigma	-0.00626 (0.0226)	0.00699 (0.0136)	-0.0223 (0.0254)	0.00613 (0.00595)	-0.00983 (0.0248)	-0.00296 (0.00917)	-0.0291 (0.0247)	-0.0114 (0.0181)	-0.00933 (0.0170)	0.00617 (0.0304)	0.0299* (0.0160)	-0.00281 (0.0151)
HIV Info.	-0.0153 (0.0242)	0.0181 (0.0151)	-0.0162 (0.0265)	0.00866 (0.00627)	-0.0193 (0.0264)	-0.0146* (0.00793)	-0.00623 (0.0255)	0.0178 (0.0174)	0.00473 (0.0159)	-0.0201 (0.0268)	0.000953 (0.0147)	-0.00644 (0.0134)
ART Info.	0.00302 (0.0236)	-0.0192 (0.0124)	-0.0476** (0.0228)	0.0108** (0.00493)	0.0222 (0.0242)	-0.00798 (0.00840)	-0.0125 (0.0238)	0.0218 (0.0188)	0.0235 (0.0180)	0.0224 (0.0249)	0.0231 (0.0146)	0.0126 (0.0147)
High Value Coupon	0.00350 (0.0217)	0.0267* (0.0159)	-0.0121 (0.0276)	0.0114* (0.00639)	0.0263 (0.0282)	-0.00491 (0.00953)	0.0271 (0.0265)	0.00929 (0.0216)	-0.00989 (0.0217)	0.0262 (0.0295)	0.0235 (0.0170)	-0.0262* (0.0132)
HIV and ART Info.	0.0357 (0.0275)	0.0223 (0.0166)	-0.0161 (0.0261)	0.0132** (0.00514)	-0.0174 (0.0261)	-0.00168 (0.00931)	-0.0163 (0.0282)	0.0151 (0.0189)	0.00200 (0.0177)	0.0136 (0.0283)	0.00736 (0.0172)	-0.0271** (0.0133)
Observations	3,658	3,658	3,658	3,658	3,658	3,658	3,658	3,658	3,658	3,658	3,658	2,370
R-squared	0.042	0.051	0.078	0.013	0.063	0.032	0.036	0.039	0.037	0.047	0.025	0.019
Obs level	Household	Household	Household	Household	Household	Household	Household	Household	Household	Household	Household	Household
Control Mean Dep. Var.	0.297	0.0706	0.300	0.0149	0.601	0.0215	0.227	0.155	0.121	0.268	0.0911	0.0370
p-value of test Treatment = FCC-ambient	0.214	0.905	0.969	0.918	0.600	0.0910	0.543	0.951	0.987	0.426	0.213	0.627

Notes: Dependent variables in columns 1-11 are indicator variables for household characteristics reported during enrollment of household in the study (May to Nov 2017). Dependent variable in column 12 is indicator that household migrated into the community within the last 12 months (available only for randomly selected subset of households asked more extensive set of baseline survey questions, administered May 2017 to March 2018). “Treatment” and “FCC-ambient” defined in Table 2. See Section I for definition of minitreatments. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Table 26: Balance with Respect to Randomization Stage 3 Minitreatments and Interactions

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Child or Grandparent as Household Head	Ratio of Children to Adult ≥ 4	School Aged Children not in School	Household Eats < 2 Meals a Day	Household go some Days w/o Food	Primary Income Illegal or None	Have Chronically Ill Member	HIV + Household Member	Have a Household Member on ART	Have Orphaned Children	Adult Died of Chronic Illness in Past 5 Years	Baseline In-Migration
Treatment	-0.0323 (0.0380)	0.0355 (0.0249)	-0.0116 (0.0396)	-0.00623 (0.00464)	0.108** (0.0450)	-0.0104 (0.0149)	0.0156 (0.0443)	-0.0361 (0.0274)	-0.0236 (0.0258)	0.0461 (0.0420)	-0.0152 (0.0222)	-0.0106 (0.0184)
FCC-ambient	-0.0464 (0.0360)	0.0325 (0.0238)	0.00994 (0.0467)	0.00786 (0.00936)	-0.00338 (0.0518)	-0.000962 (0.0166)	0.00904 (0.0446)	-0.00664 (0.0353)	-0.0162 (0.0323)	0.0921 (0.0528)	0.0357 (0.0292)	0.0332 (0.0233)
Anti-Stigma	-0.0327 (0.0307)	0.0523 (0.0155)	-0.0262 (0.0342)	0.00644 (0.00973)	0.00925 (0.0400)	0.00255 (0.0150)	-0.0219 (0.0287)	-0.0299 (0.0263)	-0.0346 (0.0249)	0.0634* (0.0371)	0.0246 (0.0226)	0.0150 (0.0218)
HIV Info.	-0.0449 (0.0321)	0.0215 (0.0175)	-0.0268 (0.0321)	0.0142 (0.0104)	0.0390 (0.0386)	-0.0144 (0.0138)	0.0119 (0.0351)	0.0243 (0.0269)	-0.00264 (0.0239)	0.0182 (0.0294)	-0.00673 (0.0205)	-0.00137 (0.0190)
ART Info.	-0.00341 (0.0325)	-0.00267 (0.0136)	-0.0587** (0.0278)	0.00608 (0.00617)	0.0431 (0.0326)	-0.0139 (0.0131)	0.00809 (0.0301)	-0.00538 (0.0260)	-0.00672 (0.0252)	0.0249 (0.0341)	0.0105 (0.0179)	0.0344 (0.0209)
High Value Coupon	-0.0117 (0.0314)	0.0312 (0.0208)	-0.0478 (0.0365)	0.0148 (0.00999)	0.0431 (0.0416)	-0.0166 (0.0140)	0.0328 (0.0420)	0.00653 (0.0323)	-0.0182 (0.0332)	0.0665 (0.0440)	0.0398 (0.0253)	-0.00332 (0.0200)
HIV and ART Info.	0.0182 (0.0379)	0.0434** (0.0212)	-0.0454 (0.0389)	0.0153* (0.00770)	0.0115 (0.0381)	-0.00342 (0.0149)	-0.0258 (0.0383)	0.00674 (0.0274)	-0.0159 (0.0268)	0.0248 (0.0388)	0.0255 (0.0256)	-0.0354*** (0.0116)
Treatment * Anti-Stigma	0.0730 (0.0586)	0.00773 (0.0300)	-0.00990 (0.0548)	0.00433 (0.0123)	-0.0840 (0.0537)	-0.0176 (0.0186)	-0.00320 (0.0592)	0.0284 (0.0410)	0.0335 (0.0382)	-0.0576 (0.0664)	0.0132 (0.0339)	-0.0116 (0.0326)
Treatment * HIV Info.	0.0947 (0.0578)	-0.0125 (0.0364)	0.0502 (0.0599)	-0.00286 (0.0130)	-0.108* (0.0584)	-0.00637 (0.0165)	-0.0341 (0.0633)	-0.0258 (0.0375)	-0.00119 (0.0356)	-0.0975* (0.0516)	0.0456 (0.0316)	0.0201 (0.0341)
Treatment * ART Info.	-0.00321 (0.0565)	-0.0221 (0.0322)	0.0323 (0.0546)	0.0137 (0.0112)	-0.106* (0.0561)	0.0128 (0.0164)	-0.0571 (0.0584)	0.106** (0.0425)	0.0934** (0.0422)	0.0109 (0.0559)	0.0416 (0.0309)	0.06301 (0.0359)
Treatment * High Value Coupon	0.00973 (0.0516)	-0.0464 (0.0314)	0.102 (0.0663)	-0.00604 (0.0119)	-0.145** (0.0626)	0.0327 (0.0214)	-0.0393 (0.0680)	0.0361 (0.0474)	0.0285 (0.0464)	-0.0631 (0.0595)	-0.0199 (0.0383)	-0.0181 (0.0242)
Treatment * HIV and ART Info.	0.0458 (0.0633)	-0.0306 (0.0385)	0.0645 (0.0577)	0.0133 (0.0144)	-0.111* (0.0570)	0.00686 (0.0201)	0.000709 (0.0688)	0.0326 (0.0435)	0.0353 (0.0409)	-0.0199 (0.0608)	-0.00459 (0.0395)	0.0303 (0.0242)
Observations	3,658	3,658	3,658	3,658	3,658	3,658	3,658	3,658	3,658	3,658	3,658	2,370
R-squared	0.043	0.054	0.080	0.015	0.069	0.034	0.037	0.043	0.041	0.051	0.027	0.025
Obs level	Household	Household	Household	Household	Household	Household	Household	Household	Household	Household	Household	Household
Control Mean Dep. Var.	0.297	0.0706	0.300	0.0149	0.601	0.0215	0.227	0.155	0.121	0.268	0.0911	0.0370
p-value of test Treatment = FCC-ambient	0.763	0.913	0.662	0.137	0.0386	0.437	0.892	0.408	0.817	0.280	0.0762	0.0746

Notes: Dependent variables in columns 1-11 are indicator variables for household characteristics reported during enrollment of household in the study (May to Nov 2017). Dependent variable in column 12 is indicator that household migrated into the community within the last 12 months (available only for randomly selected subset of households asked more extensive set of baseline survey questions, administered May 2017 to March 2018). "Treatment" and "FCC-ambient" defined in Table 2. See Section 1 for definition of minitreatments. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. Significance levels: *** p<0.01, ** p<0.05, * p<0.1.

Table 27: Minitreatment Impacts on HIV Testing Coupon Redemption

HYPOTHESIS:	(1)	(2)
VARIABLES	S5	S6
	Coupon Redemption HIV Testing	Coupon Redemption HIV Testing
Treatment	-0.0212 (0.0183) [0.371]	-0.105 (0.0387) [0.020]
FCC-ambient	0.0293 (0.0201) [0.249]	0.0329 (0.0444) [0.520]
Anti-Stigma	0.00427 (0.0230) [0.860]	-0.0521 (0.0283) [0.084]
HIV Info.	-0.0136 (0.0233) [0.555]	-0.0474 (0.0329) [0.162]
ART Info.	-0.00810 (0.0245) [0.746]	-0.0282 (0.0330) [0.419]
High Value Coupon	0.0724 (0.0288) [0.013]	0.0342 (0.0450) [0.444]
HIV and ART Info.	-0.0224 (0.0242) [0.351]	-0.0136 (0.0368) [0.714]
Treatment * Anti-Stigma		0.142 (0.0491) [0.006]
Treatment * HIV Info.		0.119 (0.0525) [0.028]
Treatment * ART Info.		0.120 (0.0548) [0.032]
Treatment * High Value Coupon		0.118 (0.0592) [.053]
Treatment * HIV and ART Info.		-0.00895 (0.0556) [0.869]
FCC-Ambient * Anti-Stigma		0.0666 (0.0619) [0.275]
FCC-Ambient * HIV Info.		-0.000682 (0.0617) [0.991]
FCC-Ambient * ART Info.		-0.0815 (0.0626) [0.208]
FCC-Ambient * High Value Coupon		0.0173 (0.0805) [0.822]
FCC-Ambient * HIV and ART Info.		-0.0314 (0.0728) [0.659]
Observations	3,658	3,658
R-squared	0.062	0.067
Obs level	Household	Household
Control Mean Dep. Var.	0.263	0.263
p-value of test Treatment = FCC-ambient	0.0161	0.00101

Notes: Dependent variable in both columns is indicator equal to one if someone in household got an HIV test at local health clinic (based on redemption of encouragement coupon for HIV testing), and zero otherwise. "Treatment" is indicator equal to one if household randomly assigned to "Treatment" status in Randomization Stage 2, and zero otherwise. Coefficient on Treatment was pre-specified as of primary interest in this study. "FCC-Ambient" is defined analogously for "FCC-Ambient" status, and was pre-specified as of secondary interest in this study. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

Table 28: Other Secondary Analysis of Randomization Stage 3 Impacts on HIV Testing

VARIABLES	(1) Coupon Redemption HIV Testing	(2) Coupon Redemption HIV Testing
Treatment	-0.0210 (0.0182) [0.361]	-0.105 (0.0387) [0.021]
FCC-ambient	0.0293 (0.0202) [0.251]	0.0330 (0.0444) [0.486]
Anti-Stigma	0.00429 (0.0230) [0.849]	-0.0520 (0.0283) [0.084]
High Value Coupon	0.0728 (0.0288) [0.012]	0.0345 (0.0449) [0.459]
Pooled HIV and ART Info.	-0.0139 (0.0203) [0.504]	-0.0311 (0.0290) [0.287]
Treatment * Anti-Stigma		0.142 (0.0490) [0.007]
Treatment * High Value Coupon		0.118 (0.0592) [0.051]
Treatment * Pooled HIV and ART Info.		0.0848 (0.0452) [0.062]
FCC-ambient * Anti-Stigma		0.0666 (0.0618) [0.296]
FCC-ambient * High Value Coupon		0.0175 (0.0804) [0.844]
FCC-Ambient * Pooled HIV and ART Info.		-0.0369 (0.0543) [0.505]
Observations	3,658	3,658
R-squared	0.062	0.065
Obs level	Household	Household
Control Mean Dep. Var.	0.263	0.263
p-value of test Treatment = FCC-ambient	0.0164	0.00101

Notes: Dependent variable in both columns is indicator equal to one if someone in household got an HIV test at local health clinic (based on redemption of encouragement coupon for HIV testing), and zero otherwise. “Treatment” and “FCC-Ambient” defined in Table 2. All regressions control for matched pair fixed effects. Standard errors clustered at the community level in parentheses. P-values adjusted for multiple hypothesis testing in square brackets.

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