USAID | ZAMBIA
FROM THE AMERICAN PEOPLE

# The Zambia Corridors of Hope HIV/AIDS Prevention Initiative (COH III)

# Final Project Report

September 11, 2009 – October 31, 2015

This publication was produced for review by the United States Agency for International Development. It was prepared by FHI 360/COH III Project. The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

# The Zambia Corridors of Hope HIV/AIDS Prevention Initiative (COH III)

## Final Project Report

## September 11, 2009—October 31, 2015

**Prepared by:**
FHI 360/COH III Project

**Submitted to:**
Ngaitila Phiri, AOTR
USAID Zambia
Embassy of the United States of America
Subdivision 694/Stand 100
Kabulonga District, Ibex Hill Road
PO Box 32481
Lusaka, 10101
Zambia

**Cooperative Agreement No.**
611-A-00-09-00003

*Under*

**Leader with Associates Award No:**
623-A-00-08-00049-00

This document is made possible by the generous support of the US President's Emergency Plan for AIDS Relief (PEPFAR) and the US Agency for International Development (USAID) under Cooperative Agreement No. 611-A-00-09-0003 under Leader with Associates Award No. 623-A-00-08-00049-00. The contents are the responsibility of FHI 360/COH III Project and do not necessarily reflect the views of USAID or the US Government.

# CONTENTS

# ACRONYMS

| | |
|---|---|
| **CATZ** | Community Alcohol Team Zambia |
| **COH** | Corridors of Hope |
| **DAI** | Development Alternative Incorporated |
| **GBV** | Gender-based violence |
| **GSLA** | Group savings and loans association |
| **HEA** | Household economic assessment |
| **HU** | Howard University |
| **JIC** | Join in Circuit |
| **NGOCC** | Non-governmental organization coordinating committee |
| **PEPFAR** | President's Emergency Plan for AIDS Relief |
| **REFLECT** | Regenerated Freirean Literacy through Empowering Community Techniques |
| **SHARe** | Support to the HIV/AIDS Response in Zambia |
| **SHARPZ** | Serenity Harm Alcohol Reduction Program in Zambia |
| **VMMC** | Voluntary medical male circumcision |
| **ZHECT** | Zambia Health Education and Communications Trust |
| **ZINGO** | Zambia Interfaith Networking Group |
| **ZPI** | Zambia-led Prevention Initiative. |

# EXECUTIVE SUMMARY

The Corridors of Hope HIV/AIDS Prevention Initiative (COH III) was a five-year project supported by the U.S. Agency for International Development (USAID)/Zambia with funding from the U.S. President's Emergency Plan for AIDS Relief (PEPFAR). The project which commenced on September 11, 2009 and was to end on September 30, 2014, received a cost extension for a year and a 50-day no-cost extension to end on 31 October 2015. COH III was an Associate Cooperative Agreement under the Roads to a Healthy Future (ROADS II) Leader with Associate Award (2008 – 2014). The LWA extended HIV prevention, care and support services to key populations in East, Central and Southern African transport corridor communities, building on the work of ROADS I.

The COH III program activities were concentrated in 10 of the highest HIV-prevalence district areas along the borders and transport corridors in Zambia, representing presence in 8 of the 10 provinces in Zambia. These were: Chililabombwe, Chipata, Chirundu, Kapiri Mposhi, Katete, Kazungula, Livingstone, Nakonde, Sesheke and Solwezi.

COH III evolved from three earlier USAID-funded HIV-prevention projects: the Cross Border Initiative Project, COH I, and COH II. These projects also targeted high-risk populations in border and transportation-corridor communities, and they were implemented under the Implementing AIDS Prevention and Control Activities Project (IMPACT) by FHI 360. The COH III project reached beyond the scope of these previous projects (which targeted female sex workers, truckers and mobile populations) to broaden its focus to changing community norms of sexual behavior throughout the entire high-prevalence populations of these communities. The COH III project adapted lessons learned in ROADS II in operating *Safe-T-Stop* recreation centers along transport corridors in several countries in East and Central Africa.

COH III was designed to: provide comprehensive HIV-prevention services and implement interventions for behavioral and social change; and improve linkages and referral networks to increase the use of HIV-related services. Building on previous work along the Zambian transport corridors since 2000, COH III implemented contextualized, audience-driven programming in collaboration with an array of partners including communities, government, civil society, development agencies and the private sector.

During the implementation period, COH III largely met or exceeded its targets across the two objectives. Key achievements include:

- 294,086 individuals received HTC services
- 1,333,356 individuals reached with behavior-change messages
- 383 condom outlets established
- 26,783 clients screened and treated for STIs
- 5,255 clients accessed family planning
- 3,259 clients tested for malaria and all positive cases treated
- 19,047 clients screened for tuberculosis (TB); all suspected cases referred to TB clinics

- 2,269,377 free condoms distributed
- 761 clients received voluntary medical male circumcision (VMMC)
- 3,176 low-income individuals (2,426 women, 497 sex workers and 253 men) supported to establish 169 Group Savings and Loans Associations (GSLAs) and accumulated savings of K1,283,450.00 (US$183,350) which improved their economic livelihoods and health outcomes.
- The project trained and supported the creation of a strong network of more than 850 peer educators, youth adult mentors, and counselors who served as change agents in communities.
- More than 21 faith-based organizations (FBOs) and community-based organizations (CBOs) were equipped with adequate knowledge, information, and skills in HIV prevention, care, and support services.

The project provided targeted and contextualized interventions to meet the needs of its target groups. It also expanded non-traditional counseling and testing services to reach underserved populations and the establishment of linkages with other services allowed the project to add value to existing efforts by the government and other stakeholders to improve health.

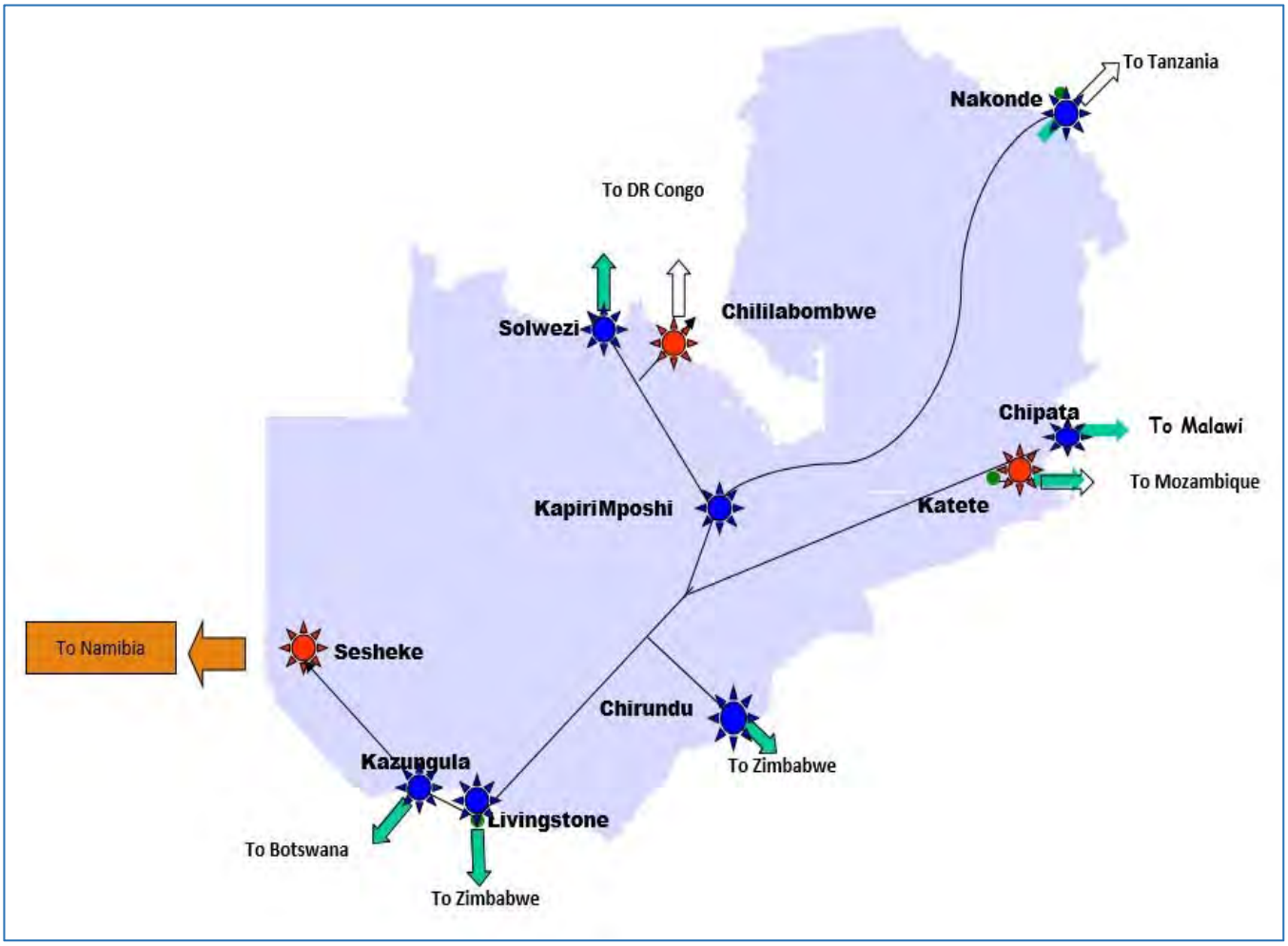
COH III addressed structural drivers of the HIV and AIDS pandemic by extending the range of health and development services provided, including gender-based violence (GBV) prevention, alcohol abuse counseling and support groups, and economic strengthening through the creation, training, and support of local GSLAs, a key development model that strengthens the economic resilience of communities, families, and individuals, with savings enabling greater access to health services.

Lessons learned and achievements in the implementation strengthened community involvement and inspired community ownership toward sustainability. All prevention activities supported the goal of increased knowledge of HIV status and the continued efforts toward strengthening linkages to other services through referrals.

COH III expanded service delivery through private-public partnerships and strengthened individual and organization capacities by developing strong Zambian institutions and local sustainable capacity to design, implement and evaluate programs responding to identified needs.

By the end of the six years of program implementation, COH III made a significant contribution towards Government of Zambia's Vision "A Nation Free from the Threat of HIV and AIDS", as articulated by the National AIDS Council in its 2009 – 2014 Prevention Strategy.

## COH III Geographic Locations



# 1. Background, Context and Introduction

## 1.1 Context along Zambian Corridors

COH III supported interventions along the Zambian corridors in Chililabombwe, Chipata, Chirundu, Kapiri Mposhi, Katete, Kazungula, Livingstone, Nakonde, Sesheke and Solwezi. Despite encouraging signs in HIV care and treatment in Zambia over the past years, HIV continues to spread rapidly in many of Zambia's poorest communities. This is particularly true in hotspot communities along the major transport corridors ("Lines of Rail"), where HIV prevalence is exceptionally high relative to other sites. The combination of economic vulnerability, extensive sexual networking, concentration of truck drivers and other mobile workers, high levels of alcohol abuse and gender-based violence create an atmosphere of elevated risk. Communities along the corridors are complex environments:

1. ***Concurrent sexual partnerships are common for both men and women -*** Multiple concurrent sexual partnerships are highly prevalent in transport corridor
2. communities. According to the 2005 Zambia Sexual Behavior Survey (ZSBS), in the last 12 months preceding the Survey, 8 percent of married men had at least one non-regular partner (who was not his wife). Among single or unmarried men, 30 percent had sex with one non-regular partner while 7 percent had sex with two or more non-regular partners. According to the Survey, among married women, 3 percent had one non-regular sex partner; none had more than one extra partner besides a husband. Among unmarried females, 22 percent had sex with a non-regular sex partner and 3 percent had two or more. Unemployment and chronic under-employment in transport corridor communities, which can reach 70 percent, drives these percentages even higher, presenting a persistent challenge for HIV and AIDS programs.

3. ***Corridor communities are frequented by a significant number of transient workers –*** These are transport workers, migrant workers, uniformed services personnel, and others who spend long periods away from their families, health providers and support structures. In high-volume corridor communities such as Chirundu, approximately 360 trucks pass through town each day, with perhaps 200-250 overnighting. Each truck has a driver and an assistant, who routinely spend three days waiting to clear their cargo before proceeding on their journey. These individuals have few recreational opportunities beyond drinking in bars and other alcohol-selling establishments. There is a high level of transactional sex between them and local residents. Truck drivers as a group tend to have higher levels of HIV than the general population. Their first line of health care is usually local pharmacies and drug shops, where staff generally have low levels of training on HIV and AIDS and related health issues.

4. ***Unemployment is a significant problem in towns along Zambian transport corridors –*** In some corridor communities, up to 70 percent of the population is unemployed or chronically under-employed, with few opportunities for income-generation beyond petty trade or commercial and transactional sex. In these

communities, much of the petty trade is centered along the road catering to mobile workers, leading to a high level of interaction between men with disposable income and highly vulnerable local residents.

5. ***Excessive drinking is a powerful norm in these communities*** **–** Alcohol consumption is at the center of most social interactions in Zambia. It is used as a leisure activity by all age groups but more especially by young people. Places where alcohol is consumed become high-risk areas because of other activities that happen there. In Kapiri Mposhi, for example, there are reports that groups of young people, both male and female, will spend time in or near a bar, drinking, taking drugs and gambling. Bets for gambling include sexual favors, especially for young women who will not have money to bet. Instead they bet with their bodies. This is known as *'ukuishitika.'* In these circumstances, a girl can have unprotected sex with multiple partners in a day. Alcohol consumption is also at the center of all forms of entertainment. This is particularly so in transit areas, such as border areas with a high mobile population away from home, such as truck drivers and traders. The bars become the place to rest and have some fun. Some of the sex workers themselves, who may be temporarily resident in these communities, such as women who come from Zimbabwe to earn some money in border towns like Chirundu and Livingstone, will live near bars, often renting rooms from bar owners. In these cases, alcohol is a central component in exposing individuals to risk areas and risk behaviors. Many people who are positive and on ART continue taking alcohol because it is so central to their social lives.

6. **Inequity and gender-based violence continue to be significant challenges, undermining HIV prevention and care and treatment-seeking –** Zambian society is built on gender inequity. Culturally, women are expected to be subservient to men, especially in terms of decision-making both in the domestic sphere and in the public sphere. In addition, gender-based violence can be used by men to exercise power and to sanction women. This is accepted by both men and women and women are taught to accept, tolerate and even rationalize GBV. GBV, or the threat of it, makes women particularly vulnerable to HIV transmission if they cannot negotiate safer sex practices or are exposed to sexual abuse. Anecdotal evidence also points to the contradiction that although more women may access HIV counseling and testing, some women may not be able to share the results with husbands or partners for fear of violence. In addition, they may not even access the continuum of care after they test positive, for fear of exposing their status.

It was against this background that COH III project was implemented whose achievements are detailed in subsequent sections.

## 1.2 Project Objectives

COH III's objectives were to:

1. Provide comprehensive HIV-prevention services and implement interventions for behavioral and social change.

2. Improve linkages and referral networks to increase the use of HIV-related services.

### 1.3 Project Partners

COH III was implemented with support and collaboration of a wide array of partners. These include government ministries and institutions among them Ministry of Health (MOH), National AIDS Council (NAC), Ministry of Community Development and Mother and Child Health (MCDMCH), government structures including District Health Offices (DHOs) and District AIDS Task Forces (DATFs), national organizations (ZHECT, ZINGO and Afya Mzuri), international organizations (Howard University and DAI), community leaders, volunteers and multilateral institutions such as the Joint United Nations Programme on HIV/AIDS (UNAIDS).

### 1.4 Target Groups

COH III extended services to populations that are most-at-risk of contracting and transmitting HIV, including:

- Sex workers and their clients
- Girls and women who engage in transactional sex
- Cross-border traders
- Long-distance truck drivers
- Border and corridor communities

## 2. Project Results

### 2.1 Objective 1: Provide Comprehensive HIV-Prevention Services and Implement Interventions for Behavioral and Social Change

In Year 1, COH III established seven wellness centers in Chipata, Chirundu, Kapiri Mposhi, Kazungula, Livingstone, Nakonde and Solwezi. In Year 2, three new sites were established in Chililabombwe, Katete and Sesheke. The services provided at these centers included HIV testing and counseling (HTC), screening and treatment for sexually transmitted infections (STIs), community outreach, peer education and behavior-change information to the surrounding and underserved communities. Other integrated services (including family planning, malaria and tuberculosis screening, and treatment) were introduced at all sites in Year 2.

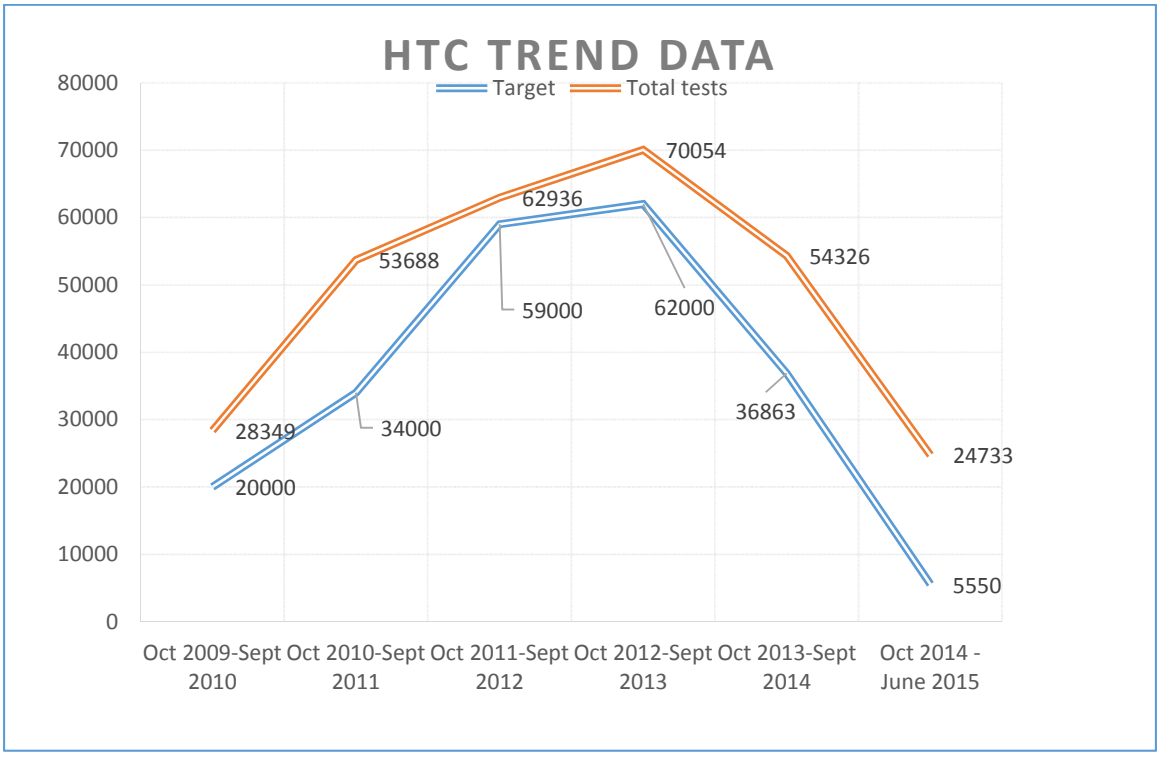
#### 2.1.1 HIV testing and counseling

COH III provided HTC services from the 10 project sites. The HTC program generally targeted the PEPFAR-defined “most-at-risk populations” — primarily sex workers and their clients. However, acknowledging the generalized nature of the HIV epidemic in Zambia, COH III also provided HTC to those practicing “most-at-risk behaviors” — such as inconsistent condom use, multiple concurrent sexual partnerships, transactional sex, intergenerational sex, gender-based violence, and alcohol abuse.


*One of the branded COH III containers that served as an outreach center in Chirundu.*

These services were provided through the wellness centers (28.2%), mobile outreach (46.2%), through door-to-door (20.5%) or through the branded containers (5.1%). HTC teams at the sites worked closely with the behavior-change teams that helped to raise an awareness of the importance of learning one's HIV status. The services were initiated by clients and providers.

COH III built on successful HTC practices used under COH II and enhanced them in terms of scope and clients. By the end of the project, COH III provided HTC to 294,086 individuals —156,793 (53.3%) men and 137,293 (46.7%) women. Of these, 9,462 men and 11,830 women tested positive for HIV. A total of 8,695 sex workers, 10,756 male clients of FSWs were among those reached as shown in the graph below:



This was realized through the following:

*2.1.1.1 Adopting HTC guidelines and protocols:* In order to provide quality HTC services, COH III adopted existing HTC protocols from FHI 360's Zambia Prevention, Care and Treatment Partnership (ZPCT), COH II, WHO and the Zambian Counseling Counsel and Zambia Voluntary Counseling and Testing services in the 10 sites. The project also produced wall-size flow-charts containing information on couple testing, testing at statistic and mobile sites and in the community that listed the national counselling and testing protocols. These charts were distributed to each site for reference.

The project also developed guidelines on *Minimum Package of Services for Female Sex Workers* and *Standard Operating Procedures for HIV/STI Prevention Program with Sex Workers in Zambia*. These guidelines were developed with support of the NAC and technical support from FHI 360's Bridge Project of India.

*District AIDS Coordinator, Medical Officer In-Charge, Technical Manager FHI 360 Bridge Project in India, Chief of Party COH III and Executive Director, ZINGO following the site launch of the Standard Operating Procedures for HIV/STI Prevention Program and Minimum Package of Services for Sex Workers in Zambia in Chililabombwe. The two technical guidance documents were launched by the National AIDS Council.*

*2.1.1.2 Training HIV counselors and counselor supervisors:* COH III trained HIV counselors and counselor supervisors using revised curricula to sensitize providers on other emerging issues, including gender. This ensured the services they provided were child-, youth-, female-, male-, and family friendly. The health providers were also trained on behavior change communication to reduce their own stigma and fear of discrimination and increase their own use of HTC services.

*2.1.1.3 Offering client- and provider-initiated CT services at COH III centers:* The project trained HTC counselors and providers to serve at each of the COH III centers by offering

HTC services to all clients visiting the centers for HTC, STI screening services, family planning (FP) or other services. In collaboration with MOH, all the 20 health care providers (HCPs) were trained on the syndromic approach to STI management and two HCPs were placed at each COH III wellness center. In addition, the HCPs and 145 non-medical counsellors were trained and certified by MOH's counselling unit in standard psychosocial counselling and rapid HIV testing and counselling. The HCPs were also trained as supervisors for community-based lay counsellors and worked closely with other partners and referral centers for the continuum of care at public and private antiretroviral (ART) centers.

*2.1.1.4 Providing mobile HTC services* – COH III in consultation with the DATFs, local organizations and DHMTs identified communities targeted for mobile HTC. The trained volunteer lay counselors were instrumental in setting up appropriate timing for mobile HTC services in their communities and mobilizing the communities to access these services. COH III also expanded mobile activities "door to door" to brothels and homes of female sex workers (FSWs) and offered HTC services during national events and traditional ceremonies.


*A lay counselor testing a community member for HIV using finger-prick rapid test in Livingstone.*

*2.1.1.5 Promoting the use of non-medical counselors to supplement CT services at the COH Centers and mobile CT units* – COH III trained 145 volunteer lay counselors in psychosocial counseling and HIV testing using rapid tests. The volunteers were a vital link between health centers and communities, especially in strengthening referrals between key HIV-related services.

### 2.1.2 HIV and AIDS Prevention Services

COH III prevention services recognized the generalized nature of the HIV and AIDS pandemic in Zambia and responded with comprehensive and inclusive services that reached all parts of the community, while reinforcing previous activities supporting traditional most-at-risk populations such as female sex workers. These included using peer educators focusing on routine interpersonal interaction among trusted sources, rather than one-off special events, with reinforcing community messages through a range of complementary channels.

*Demonstrating the Stepping Stones concept following open community meeting in Katete.*

COH III collaborated with the community to reduce HIV transmission and created environments in which individuals adopted behavioral changes that reduce their risk of infection. The behavior-change interventions were implemented in collaboration with local partners, Afya Mzuri and ZINGO. The implementing teams used REFLECT, Stepping Stones and Join-in-Circuit (JIC) participatory methods — strategies that empower communities to analyze their situations, traditions and beliefs to address the factors that drive the HIV epidemic.

The project established community-based support groups such as REFLECT circles and provided counseling support to individuals to maintain behavioral changes. Communities shared their successes and stories using the Most Significant Change methodology.

COH III reached 1,333,356 individuals (males 53.1%; females, 46.9%) with behavior-change messages (not including messages for abstinence and being faithful). The project also implemented activities designed to promote abstinence and fidelity, and reached 1,257,161 individuals (males 49.1%; females 50.9%) with messages to practice abstinence or being faithful.

*2.1.2.1 Developing multimedia HIV and AIDS messages:* COH III developed messages through facilitated discussions with community members themselves to ensure resonance and impact. The goal was to reinforce knowledge on HIV risk and drivers in each setting using participatory methods. For example, using this approach, four posters were developed with HIV-prevention messages to reinforce knowledge of the risks and drivers of HIV. These are:


- I'm HIV POSITIVE, but my partner is NEGATIVE. We are a happy and healthy family
- Don't blame your partner… give support. Living with a different HIV test result is possible.
- Get more information about HIV test results from the health center.
- Don't be afraid. Love is about sharing your HIV test results with your partner.

COH III ensured that a wide range of communication channels were utilized to generate and disseminate knowledge. These included group discussions, radio programmes and print materials.

*2.1.2.2 STI screening and treatment:* COH III screened and treated 26,783 individuals visiting the centers, including FSW to identify, treat and prevent future STI acquisition and transmission. These elements included provision of correct STI information, conducting sexual history and behavioral risk assessment, screening for STI symptoms and/or through point-of-care rapid tests. COH III used recommended national STI management guidelines based on the syndromic approach.

*2.1.2.3 Availing condoms:* COH III built on its COH I and COH II experience in the social marketing of condoms, especially to the sexually active most-at-risk groups. COH III collaborated with Society for Family Health (SFH) and district community medical offices


*"Sisters of Hope", peer promoters demonstrating how to use a condom correctly during a training on Minimum Package of Services for FSWs in Lusaka.*

to distribute condoms and provide messages on correct and consistent condom use through outreach workers and peer educators. The project also established condom outlets at locations frequented by sex workers and their clients. The Behavior Change and Social Mobilization (BCSM) team conducted one-on-one sessions with FSWs which led to adoption of healthy behavior as demonstrated by such phrases as: "no condom, no sex." By the end of the project, 2,269,377 free condoms were distributed through COH III centers and during outreach activities accompanied by proper use information. A total of 383 condom outlets were established for socially marketed condoms at locations frequented by most-at-risk populations. SFH ensured availability of condoms at these outlets. While promoting condom use where appropriate, COH III emphasized the limitations of condoms in preventing HIV transmission, stressing partner reduction and mutual faithfulness to appropriate audiences.

*2.1.2.4. Establishing community-based alcohol counseling groups:* Under COH III, the project trained health care providers, outreach workers and selected peer educators to provide basic alcohol counseling and to conduct risk assessment for alcohol misuse. COH III collaborated with Serenity Harm Reduction Program Zambia (SHARPZ) and the Zambia-led Prevention Initiative (ZPI) to train members in a comprehensive alcohol-reduction program. The project established two community-based alcohol counseling groups in each of the 10 sites made up of senior health care providers, behavior change officers, social mobilization officers, and community mobilization officers to provide regular group counseling. The groups were styled on the Alcoholics Anonymous model but adapted to the Zambian context. The groups were established through CBOs, FBOs and linked closely with HTC services, PLHIV support groups and ART sites for cross-referral.

*Men in Kazungula's Mambova village discussing how to deal with alcohol in the community.*

*2.1.2.5 Preventing and responding to GBV:* COH III developed strategies to address gender-related violence at the program sites. The project trained outreach workers on GBV issues and counseling; trained health care workers on WHO's protocol on the Medical Management of GBV and risk assessment for GBV. The project also worked closely with referral partners such as A Safer Zambia (ASAZA), the police Victim Support Unit and local hospitals providing a comprehensive continuum of care for GBV survivors, including post-exposure prophylaxis. The project utilized REFLECT, Stepping Stones, theater and drama performances to discuss cultural explanations for GBV and find solutions. All behavior-change teams were oriented on the Anti-GBV Act, which they used to establish GBV community watch-and-action groups or to link communities to key GBV supportive services in the districts.

*2.1.2.6 Create living wage, sustainable jobs as an HIV prevention strategy*: COH III recognized that HIV prevention programming requires a holistic approach to community strengthening, and acknowledged that poverty is a key driving force of the epidemic. Economic empowerment of poor women and older orphans contributes significantly toward increasing their capacity to reduce individual involvement in risky behaviors. COH III supported vulnerable households to move from activities that decreased their initial vulnerability to those that improved quality of life and contributed to their economic growth.

*One of the 2,923 women members of GSLAs in Nakonde who benefited from a loan to open a shop.*

COH III worked with local implementing partners, as well as its strategic partner Development Alternatives Inc. (DAI) to provide technical assistance to communities in the 10 sites. Consistent with PEPFAR guidelines for Economic Strengthening interventions, COH III promoted 'HIV-sensitive' rather than 'HIV exclusive' programming, whereby sensitization on the approach is community-wide, and members were encouraged to engage in economic strengthening activities not by virtue of their HIV identity but on the basis of their common economic profiles and aspirations.

The project supported communities establish Group Savings and Loans Associations (GSLAs), where members accumulated savings and accessed loans. By the end of the project, 169 GSLAs were established in the 10 target communities, and more than 3,176 members (2,923 women) were trained to improve food production and to start small income-generating activities. By the end of the project, 169 GSLAs had accumulated

savings of more than K1, 283,450 (US$183,350) and provided loans to its members. The GSLA members used loans to start or expand income-generating activities (IGAs) and meet household needs.

*2.1.2.7 Developing prevention with positives strategies:* COH III in collaboration with local partner organizations and community groups promoted prevention with positives through partner testing, supported disclosure for those requesting it, referrals to HTC for all consenting households at COH III Centers and other nearby facilities, condom distribution and promotion to sero-discordant couples, STI diagnosis and treatment, prevention of mother-to-child transmission (PMTCT) and family planning for PLHA.

*2.1.2.8 Strengthening HIV care and treatment referral systems and linkages* - COH III strengthened the referral system to facilitate entry into health and social services networks for individuals testing positive, including enhanced linkages with workplace-based prevention programs and community-based CT programs that target individuals at-risk. COH III trained HTC staff at all sites to facilitate immediate staging, laboratory assessment, prophylaxis initiation, and active referrals to treatment programs. It also sensitized health care providers at all referral health facilities on stigma and discrimination issues.

*2.1.2.9 Expanding the role of private pharmacies/drug shops in HIV prevention and referral.*

Private pharmacies and drug stores are first line of care for many people including many transient workers and community residents. In partnership with the Livingstone General Hospital (LGH), COH III (through Howard University) developed a partnership with registered private pharmacies to support adherence and patient care at the LGH ART clinic. HU assessed the level of HIV and AIDS knowledge and skills among pharmaceutical care personnel, identified training opportunities and strengthened skills so these private outlets can play an integral role in the referral chain. By design, patients stabilized on ART at the clinic were allocated to the different participating private pharmacies for ongoing adherence support, treatment, and the monitoring of side effects. The pharmacists provided monthly reports to the ART center and referred patients (who were identified for additional clinical care) back to the ART clinic for follow-up. Through this intervention, more than 400 patients on ART received adherence support from a private pharmacist. The workload of the ART pharmacist and the clinicians at LGH significantly reduced, allowing them to concentrate on patients who require closer attention. This partnership demonstrated that private pharmacies present a major opportunity to improve quality of HIV prevention, care and treatment particularly in poor human resource capacity settings in sub-Saharan Africa.

### 2.1.3 Implementation of Behavior Change and Social Change Interventions

COH III acknowledged that at the core of implementing behavior change and social interventions, social environments should be created to support and encourage individual change by challenging negative social norms and behaviors that put individuals and the whole communities at risk of HIV infection. This required that community members

themselves drove the identification of their needs and development of appropriate responses. COH III provided technical support to communities to establish interventions that increased knowledge of modes of transmission and key drivers of HIV transmission in Zambia; increased the perception of personal risk to HIV infection and to change negative societal attitudes toward key HIV prevention measures such as the use of condoms, challenged the acceptance of particular behaviors such an intergenerational sex, having multiple and concurrent sexual partners, and GBV; and created an environment (social, political, cultural) that supported behavior change at individual and societal levels.

*2.1.3.1 Training Behavior Change Coordinators and selected Outreach Workers as trainers of trainers in the REFLECT Methodology.* COH III utilized REFLECT, a participatory approach to community mobilization that places emphasis on dialogue and action, cooperation and empowerment. In each site, the project trained Behavior Change Coordinators and Outreach Workers among trained peer educators selected from different target groups in the REFLECT Methodology. By using this methodology, communities critically analyzed their own environments, issues, cultures and challenges posed by the HIV and AIDS pandemic including GBV and early marriage, and discussed ways to overcome them. Target-based REFLECT Circles were established to conduct regular discussion around interventions.

*2.1.3.2 Training Behavior Change Coordinators and Outreach Workers to conduct risk assessment and counseling.*

COH III provided counseling and risk assessment and counseling to clients who visited COH III Centers and in the community during outreaches. These services were extended to clients with particular issues including GBV and alcohol/substance abuse. In some cases, the issues were discussed in other fora such as after radio programme broadcast, in REFLECT circles and other support groups. The project also extended these services to those who tested either positive or negative and to discordant couples. COH III also used the risk assessment tool adapted from the Bill and Melinda Gates Foundation – funded Bridge Project by FHI 360 to assess sex workers' levels of risk.

*2.1.3.3. Building the capacity of Behavior Change Steering Committees to strengthen community participation in COH III activities.*

COH III trained Behavior Change Steering Committees to use Participatory Rapid Assessment tools to enable them to conduct structured community discussions to identify key behavioral issues and risk factors. This group, composed of eminent members of the community representing the police, district health office/government, traditional leaders and sex workers community representatives, linked the community to COH III and with their acquired skills, identified their needs and potential responses, and communicated these effectively to COH III staff. Some members eventually served as peer educators and community leaders after they were trained in peer education and counseling.

*2.1.3.4. Conducting social mobilization interventions around key drivers of the epidemic.* COH III mobilized communities to address key drivers of the epidemic, including multiple

and concurrent sexual partners, transactional sex, GBV, sexual abuse and early marriage. The project acknowledged that individual behavior change happens within a social context. COH III prevention interventions therefore advocated for changes in harmful cultural practices that put individuals at risk of HIV infection. REFLECT methodology was used to mobilize communities to reflect on existing cultural practices, such as early marriage that contributes to HIV transmission and suggested ways to counter these practices. Members shared their knowledge and experiences in transforming their own communities.

*2.1.3.5. Developing special interventions for most vulnerable groups such as young women and married women.*

With technical support from COH III, community partners developed interventions that demonstrated the nexus between gender inequality and HIV transmission. Site-based training was conducted for Outreach Workers on gender issues and in particular gender and HIV issues, and in turn all peer educators were trained in gender awareness. In addition Behavior Change teams were trained on the Stepping Stones approach, and consequently facilitated community discussions on gender and HIV and AIDS.


*Some of the 145 peer promoters (sisters of hope) trained by COH III to promote safer sexual practices among sex workers in Livingstone.*

During the COH III extension period (April 2014-June 30, 2015), the project employed a peer-to-peer model, utilizing community peers from key populations (FSWs) to implement activities. These select members from the core groups were trained as peer promoters to increase access and coverage of HIV services. This model resonated with the FSWs groups, and empowered individuals and communities to be their own agents of social and

behavioral change. In particular, Queen Mothers (madams) and respected FSWs were trained as change agents ("Sisters of Hope") to promote safer sexual practices among beneficiaries. They also distributed condoms after educational sessions on their proper use.

*2.1.3.6. Documenting participatory community impact assessment using the Most Significant Change (MSC) Methodology.*

COH III utilized MSC, a participatory monitoring and evaluation methodology in which community members recorded and analyzed significant changes that occurred during the project cycle from their own perspective. The project trained 10 peer educators from each site from selected groups, who in turn supported communities and individuals shared their personal stories through communication methods the individuals were comfortable with including drama and songs. The stories were also disseminated for wider audiences through print, radio and TV programs.

## 2.2 Objective 2: Improve Linkages and Referral Networks

COH III worked through existing district and community services and structures to address the needs of the most vulnerable and most-at-risk populations. Through previous projects, FHI 360, through COH I and II had established considerable key linkages at the project sites. These included linkages with clinics, health centers, and hospitals. COH III built upon, strengthened, and expanded these linkages while giving special focus to establishing relationships with educational and economic opportunities in the communities and formed productive working relationships with Zambian, US and other international institutions contributing to related actions.

*Nurses at Batoka Hospital in Livingstone checking one of the referral boxes.*

### 2.2.1 Linkages and Coordination of Activities with Other USG Partners and Agencies

COH III linked with other USG and non-USG programs to address the lack of economic and educational opportunities in the corridor communities. Among these linkages were to vocational training and employment opportunities, the lack of which are of key factors contributing to transactional and intergenerational sex and the transmission of the virus to young women and girls. Special consideration was given to opportunities for girls to

acquire real wage producing skills and thus reduce their vulnerability to HIV and AIDS. COH III built upon and expanded the workplace programs that were established under COH II. Under COH II, the sites developed relationships with private businesses to provide CT and behavior change interventions. COH III linked with other health programs in malaria, reproductive and maternal child health, and programs with a focus on GBV.

### 2.2.2 Coordination of Activities with the National Program and the Global Fund to Fight AIDS, Tuberculosis, and Malaria and Voluntary Medical Male Circumcision

COH III efforts were aligned with the Zambian national strategies, guidelines and priorities. FHI 360 collaborated with the Global Fund and other cooperating partners to foster synergies and prevent duplication of efforts. The project maintained its strong relationship with DHMTs under the Ministry of Health at each site. Consequently, COH III obtained HIV test kits and STI drugs and supplies. The project reported all CT, STI treatment, and other reportable services to the DHMTs and DATFs using the Government Health Management Information System forms. COH III worked closely with USAID to coordinate with other USG implementing partners and existing initiatives that addressed the issues identified by the project, such as GBV.

COH III also screened suspected TB among its clients, especially FSW. Those suspected to have symptoms and signs suggestive of TB were referred for diagnosis and treatment. In addition, 761 men, including male clients of sex workers and other men in the communities were referred to male circumcision services. Elements of these services included HTC, active exclusion of symptomatic STIs and syndromic treatment where required, promotion and demonstration of condoms and male circumcision procedure by trained health providers.

## 3. Monitoring and Evaluation

COH III Monitoring and Evaluation (M&E) system aimed to ensure that quality M&E data was timely generated for documentation and dissemination of the project performance, results, and capacity. It was to build the capacity of local organizations and individuals to not only manage and analyze data but also to utilize data for decision making. COH III strengthened M&E processes and systems established at sites, national and district levels to guide participatory, coordinated and efficient data collection, and thereon the analysis, use and provision of that data to track achievement of project objectives and to inform programmatic decision-making at all levels. The COH III M&E system was designed to coordinate with, support and compliment the national monitoring and evaluation (M&E) systems. The system was established to be consistent with USAID requirements while providing a platform for integration with government and PEPFAR requirements. Local organizations were central in the process of development and implementation. Information gathered through the strengthened M&E procedures provided partners and stakeholders with a clear understanding of how they were contributing to HIV/AIDS reduction and mitigation. A key aspect of this approach was community capacity strengthening.

## 3.1 National Level

COH III reviewed existing national tools with a view to ensure the project work is aligned to the national framework. The tools were used consistently by all COH III implementing organizations and partners. The project shared data, especially HTC data regularly, and was included in the national database.

## 3.2 District Level

COH III reported its data through the DHMTs and were regularly apprised through reports and during technical meetings where staff participated and communicated about project activities. To strengthen monthly data compilation and collection systems and to ensure data from project sites was appropriately and timely collated and reported, COH III trained data collectors (peer educators, counselors) to know the data to collect, how to collect data using simplified tools and how to ensure good data quality and timely report. The team established a system that enabled regular supervision visits, mentoring and technical assistance when necessary.

## 3.3 M&E Program Infrastructure

*Baseline assessments*

Before starting intervention in each of the sites, COH III conducted rapid assessments to supplement existing knowledge on the community, drivers of HIV risk behavior as well as existing and planned programming. After site assessments, COH III teams and respective DHMTs organized stakeholder planning workshops that brought together assessment participants, additional government, NGO and CBO stakeholders, and representatives from other USG and non-USG actors to validate assessment findings, define roles and responsibilities, and develop strategies and action plans.

*Monitoring Progress*

COH III developed a matrix which was used to monitor progress towards COH III's goal and results. In this matrix, the team included data on performance achieved against the target set which enabled the team assesss the extent to which the project achievements have been realized vis a vis the goal and results. In addition, this performance matrix was discussed quarterly during the COH III quarterly meetings where performance achieved and performance improvement measures were discussed. A part from this, the M&E team held monthly discussions with technical officers and project leadership team to discuss project progress and performance.

*Data Collection and Reporting*

COH III developed simplified data collection tools and trained M&E staff, peer educators and counselors on data collection and data quality assurance.These tools were standardized according to the PEPFAR and MOH guidelines and were developed taking in account data quality issues and timely reporting. The data was monthly and quarterly reported to COH

III and this system allowed the project to regularly monitor the quality of data that was collected and reported. During the cost extension period, COH III developed a new monitoring database. COH III and implementing partners' staff were trained on its use. They were also trained on data analysis and use to inform decision making on program and performance improvement.

*DQA*

To ensure validity and reliability of data, COH III conducted data quality assessments to help strengthen the quality of data for all partners. Overall there was gradual improvement in data quality over the program implementation period due to the ongoing technical support, including training and mentoring, proving that the local organizations' capacities were strengthened in this area.

*Periodic Assessments*

The project held quarterly performance assessments which allowed the team to discuss challenges and strategies to improve project performance. The project also conducted other assessments including: Household Economic Assessment (HEA), Behavioral Monitoring Survey (BMS), An Assessment of the Short Term Effects of the COH III Community Radio Programs and Integrated Bio-Behavioral Surveillance Survey (IBBSS).

*Data Dissemination*

COH III disseminated project information via various channels including: meetings with local organizations; meetings with DHMTs, as well as national and local government officials; participation in different technical working groups; quarterly and annual reports; mass and social media; newsletters and articles.

COH III also made presentations during various meetings including ROADS regional and technical meetings, abstracts and presentations during international conferences such as International AIDS Conference.

## 3.4 Innovations and Best Practices

The following were some of COH III's innovations and best practices:

- Quality Improvement for referral system for ART in Livingstone, Kazungula and Kapiri Mposhi sites
- Training and involvement of volunteer lay counselors to provide psycho-social counseling
- Design and implementation of Community Radio Programmes in partnership with communities

- Introduction of door-to-door HTC outreach services
- Integration of FP/RH services in HTC service delivery
- Incorporation of male circumcision at selected COH III sites through partnership with Society for Family Health

## 3.5 Success Stories

**"A Light Bulb in the Dark Room of my Brain was Suddenly Switched On"**
*A woman from Sesheke-Western Province*

In 2006, I lived in a community that resisted any health-related messages because of negative and misleading beliefs about HIV and AIDS.

Most people in the community believed that HIV and AIDS were caused by witchcraft that could only be cured by witchdoctors. Consequently, I had less knowledge about HIV and AIDS before COH III conducted a workplace meeting with police officers and ZAWA staff. I was an officer for the latter at the time.

During the meeting with Behavior Change Agents, I had the opportunity to hear about how HIV is transmitted. The team explained HIV was transmitted through unprotected sexual intercourse with an infected person without the proper use of a condom. I also learned that HIV could spread in other ways including sharing sharp instruments with an infected person (such as razor blades), from mother to a child, and body fluids from open sores or wounds from an infected person.

Additionally, the team emphasized the importance of taking preventive measures that include consistent and correct use of condoms, being faithful to one sexual partner at a time, and using gloves when in contact with blood, attending to a patient with sores or wounds, or during child delivery.

After the discussion, I felt as if a light bulb in the dark room of my brain was suddenly switched on and I could now see virtually everything surrounding me. I reflected on my past when I was nursing my aunt who tested HIV positive in 2000. I used to wash her clothes, bath her, clean the sores and dress them without gloves. According to our culture, wearing gloves would imply that one is discriminating against the sick person and does not care about them.

Two weeks after the training, COH III came back to the community to identify peer educators to work with *Afya Mzuri*. I was one of the officers identified for training. Thereafter, I gained the courage to go for voluntary counseling and testing.

I am very happy today for the knowledge I now have on HIV, including the modes of transmission and how to prevent it. I will use this knowledge and the skills I got from COH III to help others in the community know more about HIV and AIDS.

**"After Gaining Knowledge…I started Changing my Attitude and Behaviors"**
*A woman from Chililabombwe/Copperbelt*

I am 56 years old and I live in the Fikolongo community. I am married with two children. Before relocating to Fikolongo, I used to stay in Mansa town with my husband who was working as a civil servant before retiring.

Upon retiring, my husband's relatives wanted him to settle in the farm in Fikolongo. However, we didn't stay in the farm for long and moved to Fikolongo village due to financial constraints.

Life became difficult because the income from the farm was not enough to meet our needs. As a result, I started having extra marital affairs with other men to make money. I never knew about condoms and so I did not use them. I also thought I could tell someone who was HIV positive just by looking at them.

I heard that COH III was introducing Stepping Stones in our community. I became interested and joined the group. While learning, I took part in roleplays and I learned many things I did not know before including risks of multiple concurrent partnerships, key drivers in HIV transmission and the risks of infidelity in marriage.

Having learnt the truth I realized that my life was at risk. After gaining this knowledge I started reflecting on my life. I started changing my attitude and behaviors slowly. Eventually, I stopped engaging in extra marital affairs and am now a changed person. This project has changed my life.

**Empowering Women and Communities in Solwezi**

In a small community in Zambia's Solwezi district, 27 women came together for the first time to share their experiences. Each woman described how she had been a victim of sexual, physical, emotional and economic abuse at the hands of her husband or partner. Some had turned to their families for help, but were turned away by their parents and forced to return to their husbands.

When fighting against gender-based violence (GBV), many of these women felt helpless. COH III, through the Behavior Change and Social Mobilization (BCSM) team brought them together and using REFLECT methodology supported them to discuss issues related to GBV. These discussions though initially painful, were healing avenues as women shared their stories. The BCSM team also provided comprehensive information and life-skills training relevant to handling GBV-related issues.

BCSM team later invited other stakeholders who supported these women access other services as necessary. These included an officer from the Victim Support Unit, a representative from the Young Women's Christian Association (YWCA) and a female

representative from the Women's Lobby and the Non-Governmental Coordinating Committee (NGOCC) who joined the REFLECT group sessions. The BCSM team also linked the group members to YWCA to establish sustainable income-generating activities.

These women supported their community in addressing GBV issues, including reporting any GBV case to the authorities, leading to a significant drop in GBV in the community. Some women reported they were able to attend schools with encouragement from their spouses, who had previously denied them access to education. One woman, having used the negotiation skills taught in the REFLECT group, convinced her previously uncooperative husband to accompany her to test for HIV. Others were able to negotiate safe sex at home. These women and others in the community were finally empowered to lead healthier lives.

**"I started seeing the benefits of respecting my wife by desisting from any acts of violence"**
*A man from the village of Sitwala*

I am married and have been blessed with four children. Before I started interacting with COH III, my life with my wife was the worst anyone can live. I used to mistreat her, beat her, and abuse her in every possible way— even when she was right. This happened mainly due to peer pressure. My peers had told me that my wife had to fear me and I had to use any means possible. I never treated my family, including my children, well. Most of the time I would quarrel and beat my wife for no apparent reason and in full view of my children without the slightest consideration for how my children felt.

My life took a turn for the better in July 2011 after I started attending Stepping Stones sessions in Sitwala. I started seeing the benefits of respecting my wife by desisting from any acts of violence. The messages we usually shared at the sessions opened a new way of life that brought much happiness to our family.

My wife now shares her concerns with me freely without being afraid that I will mistreat her. I realized that I should consider my wife as a partner, and this way, happiness would prevail in the family.

I treat my wife with respect and even help with household chores. As you can see, I am preparing lunch for the family while my wife is cleaning the house. When I think how I mistreated my wife, even for no reason at all, I feel the need to love her more.

I urge men in my community to love and respect their wives. The misconception that a man who helps his wife with household chores is under the influence of an evil spell should be discouraged from our communities at all costs.

**“With Support from my Family and the Support Group, I have Completely Stopped Drinking Alcohol”**

*A 46-year-old man in Lubengele, Chililabombwe-Copper belt Province*

I started drinking beer when in boarding school due to peer pressure. When my parents sent school fees, I would tell them that the money got stolen, but I actually used it on alcohol. If I didn’t have money, I sold my clothes, shoes, bed sheets and even textbooks to quench my thirst.

In 1998 I got married. My wife loved me but was frustrated by my drinking. Life became hard because I could not sustain a job because of my drinking habits. My wife took our two sons and left.

In 2011, a team from COH III came and talked to me about alcohol abuse and its role in HIV transmission. I did not want to listen to the discussion. But people in the community told me to pay attention because I was a victim.

The following week in another bar, another team from COH III came to discuss the same topic on the causes and effects of alcohol. This time I paid attention. The discussion was interesting and I realized that the messages resonated with me. My mind just opened up. After the discussion, I thought about my life and realized I needed to change.

I talked to the team privately and they referred me to the wellness center for counselling. Determined to save my family, I got on a bus the same day to Ndola to ask my wife to forgive me. I promised her that I will change my behavior. She was convinced and forgave me. I joined a support group and continued with counselling. With the support of my family and the support group, I have completely stopped drinking alcohol. I am a successful businessman and a proud father of three sons.

**“I am a Role Model for What is Possible”**

*A 42-year-old man in Chiyanga village, Muchinga Province*

Beer was like air and food to me. No day would go without me drinking beer. My wife tried to complain about this bad behaviour to my family and other elders in the community, but I did not listen to anyone.

In 2011, COH III started holding sessions on HIV prevention from our headman’s house in Chiyanga. I attended these sessions and, initially, I was an active participant, but could not stop drinking alcohol. However, one day, together with my wife we were told to discuss the effects of alcohol with the team. In private, we discussed the effects of alcohol abuse on marriages, especially on physical and emotional intimacy between partners. As someone who had abused alcohol for a long time, I could relate with its effects, and, especially on risky behaviors associated with its abuse. The meeting was my turning point on how I lived my life.

Afterwards, I decided not to drink alcohol to see the change it would make when I become intimate with my wife that night. The next day, we discussed the experience and I learned that I was able to engage with my wife during our moment of intimacy. The result was that we were both happier and were able to communicate better with each other.

From then on, I stopped drinking alcohol and I share my story of change with others. In fact, I have become a role model for what is possible. I tell people that it is not easy to stop doing something you like, but once you realize the risk and the benefits, you are more motivated to stop doing it.

**"I Ask Parents not to Force their Children into Early Marriages"**
*A young girl from Chipata, Eastern Province*

When I was in grade seven, my classmates shared stories about sex. I developed an interest in sex and relationships with boys and eventually I had unprotected sex with one boy. During the following school holidays, my parents and I discovered that I was pregnant.

My parents told the boy to marry me and I was forced into an early marriage against my will. However, before the wedding, I travelled back to my father's village and pleaded with him to forgive me. Thankfully, my father accepted my apologies and took me back.

A few days later, I met the COH III team in my village, where REFLECT meetings were being conducted. On that day, people were sensitized about early marriage through drama. I was immediately attracted to the discussions and I not only learned about early marriage and the potential of loss of life during delivery but sexually transmitted infections (STIs) also.

After giving birth, I avoided friends who negatively influenced me. I did not want to engage in risky behaviors that could lead me to contract STIs or HIV. I realized my mistake, and I am happy to live a happy life.

I realized that it is better to continue with school and think about marriage after completing because by then I will be mature enough. I have participated in the REFLECT sessions for over five months now and they have significantly helped me succeed in my goals to complete my studies.

I ask parents not to force their children into early marriages if they become pregnant. In Zambia, because the government introduced the school re-entry policy, girls like me can go back to school after giving birth and work towards their ambitions.

**Community Radio Programming Changing Behaviors in Zambia**

While many people listen to the radio to catch up on the news and enjoy their favorite songs, most do not realize the role of community radio programmes in reducing risky behavioral practices. According to Peg Mulaliki from Kyawama, for instance, the radio

programme women's listening group has witnessed positive change regarding their husbands' drinking habits which have changed for the better.

In early 2013, COH III launched community-led radio programming, with each segment covering topics from the dangers of gender-based violence and early marriage to the detrimental effects of alcohol abuse and multiple concurrent partnerships. Members of each community were brought together to develop, edit, and record their personal stories of change, and others were formed into listening groups that, after listening to the programme, would have the opportunity to engage in dialogue and reflection.

Mumfunte Paul from Zangamenu says, "Radio programmes have marked a big change in my life. We used to marry off children at an early age but, after listening to the programme, we have stopped. Sexual cleansing was also practiced in some areas, but after the programme, people have stopped." He adds, "Excessive beer drinking and prostitution have also reduced because the radio listening group is sensitizing the community on the dangers of multiple concurrent sexual partnerships."

Paul and others from the community are thankful for the information that is helping them live healthier lives. "These programmes are not only helping Zangamenu, but Solwezi communities at large."

In the Kyalalankuba community, Sakawumbu Joachim, a community leader, was personally impacted by the messages of the radio programmes. "Before I learned about the effects of drinking beer, I thought alcohol was helping me in my life and home, but after listening to the radio programs, I realized that excessive beer drinking is bad, because it puts someone at risk of contracting HIV because of lack of self-control and protection. I have come to realize that beer also causes spouse battering and quarrelling in homes. As a leader I have observed that (after listening to the programmes) people have reduced their alcohol intake and some have stopped - and their marriages are now stable."

For others, the programmes not only disseminated accessible information, but also empowered those who normally do not have a voice. "For me I have lived in Solwezi for a long time and have never had a chance to participate in such a programme," says Mrs. Cynthia Fulayi of the Kimasala community.

"Listening to these programmes has enhanced communication with traditional marriage counselors — a group which is responsible for guiding young girls when getting married. In the past, the girls — even those who are too young — would be subjected to marriage lessons, which had the potential of encouraging them into risky behaviors. But after listening to radio programmes these lessons are now given to the ladies who are ready for marriage."

**“It Was Not Easy to Settle with One Partner Because I Used to Sleep with Many Men”**
*Former sex worker—Chililabombwe, Copperbelt Province*

Before getting married, I was a sex worker whose lifestyle was to regularly change towns when clients were scarce in one. If we (with my fellow sex workers) contracted an STI, we opted for herbal treatment instead of properly diagnosing the problem. Many of my friends died because of lack of proper treatment. I rarely used condoms or practiced safe sex.

In 2012, during my stay at one of the guesthouses, where I conducted my sex work business, I had my first interaction with members from COH III Project. They had called everyone who was lodging there for a group discussion. We talked about the importance of knowing one’s HIV status, looked at the key drivers of HIV, and learned about the effects of alcohol on safe-sex practices and HIV transmission risks. I previously read a lot of brochures on alcohol abuse but they never made sense to me until during these sessions. I realized I was a victim and that I needed help to change my practices.

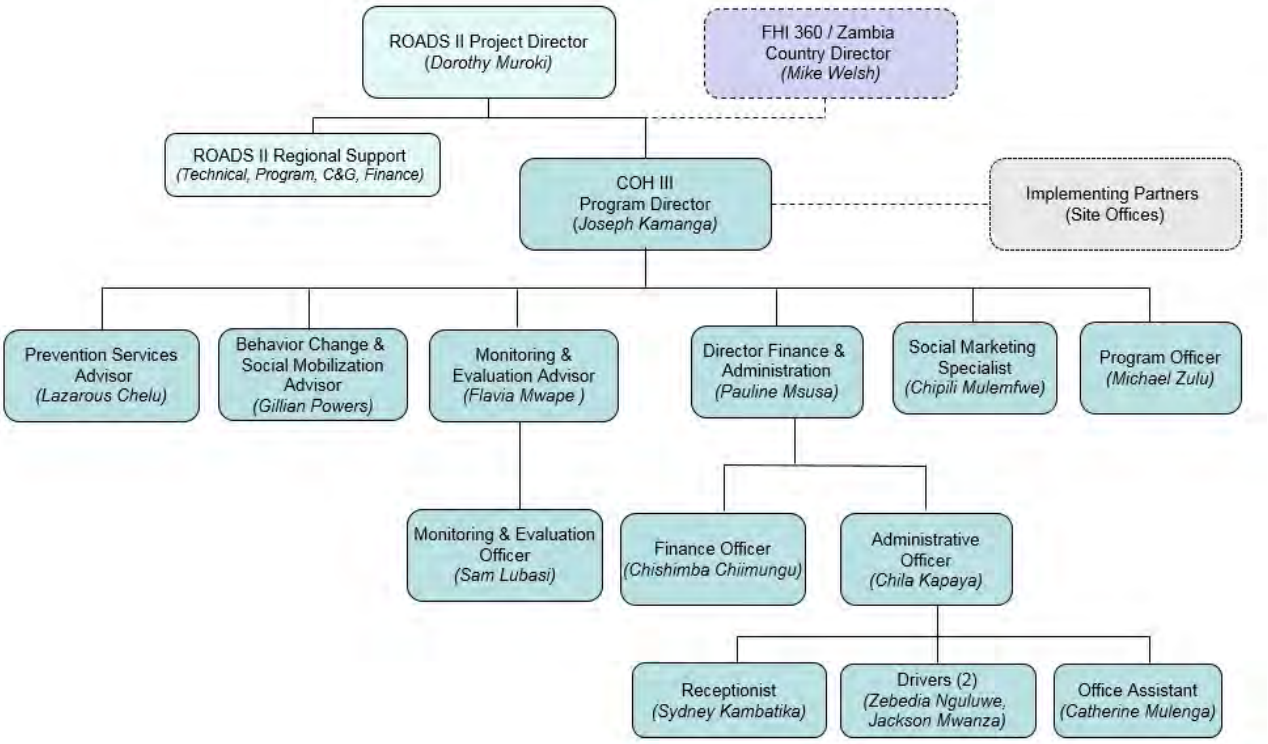
From that moment, I participated in the sessions frequently and enjoyed them. I soon approached the outreach staff to find out how to stop sex work. With time, I committed to one permanent man and I checked out of the guesthouse. Soon after, we went to voluntary testing and counseling together.

It was not easy to have one partner because I was used to sleeping with many men. This new life proved to be difficult at first. But because I realized my personal risk of getting HIV and other STIs, I had to change. Thanks to my efforts and the support of my community, I am now settled and happily married.

# 4. Management Approach

## 4.1. Staffing Structure

The project was implemented by a team of 147 full-time management, technical and administrative staff based in Lusaka, Zambia’s capital city and the 10 districts site offices, with technical and programmatic support from the ROADS regional office based in Nairobi. This ensured effective implementation and communication with the USAID Mission, government and community. The organizational structure below illustrates the staffing structure that was operational for the broader period of the project:




The staff were responsible for day-to-day management and implementation of program activities and the management staff met regularly with USAID mission staff through AOTR to update them on progress, represented the project at USAID and other country implementing partner meetings and participated in thematic group meetings of NAC and MOH. COH III also received support from FHI 360 country office's shared services (e.g., IT and human resource staff), as well as linkages with management and technical staff from other FHI 360 partners to draw on their resident expertise and ensure program linkages. The Nairobi office team augmented country support through short- to medium-term technical assistance visits as appropriate.

COH III staff participated during ROADS regional and technical meetings that brought together ROADS country managers and key technical staff to convene in-depth updates on country-level programming as well as identify best practices and innovations for scale up in other ROADS countries.

## 4.2 Financial Report

COH III provided strong financial, operational and program management systems to ensure cost effectiveness and compliance with the FHI 360 and USAID rules and regulations. As at October 31, 2015, COH III obligated amount was **US$ 27,295,957** as shown in the table below:

| Award | Total Estimated Amount | Start date | End Date | FY 10 | FY 11 | FY 12 | FY 13 | FY 14 | FY 15 | Total Obligated Amount |
|---|---|---|---|---|---|---|---|---|---|---|
| Zambia | 27,941,339 | 9/11/2009 | 10/31/2015 | 4,763,835 | 4,947,137 | 3,886,000 | 5,000,000 | 6,000,000 | 2,698,985 | 27,295,957 |

### 4.3 Sub-agreements with Local Partners

COH III collaborated with its partners Afya Mzuri, ZINGO, ZHECT, DAI and Howard University through its sub-agreement and Tropical Diseases Research Center (TDRC) through a sub-contract mechanism. FHI 360 through COH III made financial resources available to them through the sub-agreement and sub-contract mechanisms. At the end of October 2015, a total of **US$15,831,868,** had been obligated to the partners as shown in the table below:

| Award | Start date | End Date | Total Obligated Amount US$ | Total Estimated Amount US$ |
|---|---|---|---|---|
| Afya Mzuri | 1-Oct-09 | 31-Aug-14 | 3,448,022 | 3,448,022 |
| ZHECT | 1-Oct-09 | 31-Aug-15 | 8,557,892 | 8,557,892 |
| ZINGO | 1-Oct-09 | 31-Aug-15 | 2,878,171 | 2,878,171 |
| DAI LifeWorks | 1-Jan-10 | 31-Oct-13 | 335,923 | 335,923 |
| Howard University: Pharmacy/Drug Shop 1 | 1-Jan-10 | 31-Aug-14 | 251,576 | 251,576 |
| Howard University: Pharmacy/Drug Shop 2 | 10-Apr-15 | 31-Jul-15 | 111,403 | 111,403 |
| Tropical Diseases Research Centre (TDRC) | 18-Aug-15 | 15-Oct-15 | 248,881 | 248,881 |
| **Total** | | | **15,831,868** | **15,831,868** |

### 4.4. Cost-Share

At the end of October 2015, COH III had realized a total cost share value of US$ 183,421.05, derived mainly from volunteers' time, space, supplies and equipment contribution for the various program activities.

## 5. Success Stories, Lessons Learned and Recommendations

### 5.1. Lessons Learned

**Stakeholder engagement**

- Involvement of key multi-sectoral stakeholders is critical
- Engagement of project clients and their leadership (such as queen mothers and peer promoters among sex workers) promotes ownership and increases uptake of services

**Innovation**

- Innovative approaches, including door-to-door HTC services; QI models to improve referral system; PPP to improve adherence etc.) can increase uptake of services

**Capacity Strengthening**

- At community level, there is great untapped interest in participating in health and development programming and in developing appropriate skills
- With targeted capacity strengthening, community partners can go beyond a "beneficiary" role to design and implement high quality programs with deep reach in the community.
- Sustainability of project gains can be realized through capacity strengthening

**Economic Strengthening**

- Initial community expectation often revolves around 'hand-outs'; learning process requires sensitivity in initial mobilization and sensitization activities.
- Households frequently need ongoing support rather than one-off activities to change behaviors.
- Moving away from classroom-based delivery of technical assistance and towards the household builds GSLA member ownership and sets a platform for sustainability.

## 5.2 Recommendations from COH III

1. **Implement and expand a minimum package of services for FSWs** and employ standard operating procedures for HIV/STI prevention programs with FSWs in Zambia. Guidelines for the package and standard operating procedures were developed during the cost-extension period of COH III by FHI 360 in coordination with the National AIDS Council. These two documents provide guidance on the services, project management, and the behavioral, biomedical, and structural interventions needed to improve the lives of FSWs.

2. **Implement pilot studies for a test-and-treat strategy** and a periodic-presumptive-treatment (PPT) strategy for HIV prevention among sex workers and other key populations. Sex workers have a high burden of HIV and other STIs (up to 5 times greater than the general population). The most recent 2015 integrated bio-behavioral surveillance survey (IBBSS), conducted by FHI 360 and the Tropical Diseases Research Center, found an HIV prevalence of 57 percent (ranged 48.6% to 75.5%), and a syphilis prevalence of 21 percent ( ranged from 17.8% and 29.7%) among female sex workers in major cities and border towns.

Research shows that interventions that prevent new HIV infections among key populations have an impact on the broader epidemic. Similarly, the prevention or early diagnosis and treatment of STIs reduce the chances of transmitting and acquiring HIV. A pilot study of a test-and-treat strategy for HIV-positive clients, and PPT for STIs among sex workers would be extremely useful. The PPT would be administered quarterly to sex workers in areas with a high prevalence of STIs; periodic syphilis screenings could also be conducted (every 6 months). The national STI management guidelines could be updated and revised to include PPT, whereas ART guidelines could be revised to include a test-and-treat approach regardless of the CD4 counts. If successful, the strategy could be replicated to other sites.

3. **Develop a framework to increase access to quality health services for sex workers and other key populations.** The "Revised Zambia National AIDS Council" strategy (2014-2016) recognizes sex workers and their clients as key populations that are most at risk of acquiring and transmitting HIV and other STIs. In consultation with key stakeholders, the government (through the NAC) should provide a framework for service delivery by public and private providers. The framework should create an environment that supports the health needs of key-populations and enables sex workers to reduce their own risks to HIV/STIs, and encourages them to seek the proper diagnosis and treatment for HIV and other STIs in a non-discriminatory way. The framework should offer guidance on addressing structural issues related to sex work and a benchmark to measure and evaluate access, uptake and effective use of these HIV-prevention services and activities.

4. **Establish a national technical working group** to address violence, discrimination, abuse and other violations against sex workers and other key populations. The government should facilitate the creation of this working group so that it has the capacity to review and recommend cost-effective, evidenced-informed interventions. The working group should also consider community-based services for sex workers that provide access to condoms and lubricants as well as testing and counseling for HIV/STIs. The exclusion of individuals who have an increased vulnerability to HIV undermines the effectiveness of any response, while contravening their human rights for freedom from discrimination, and public health principles of access to health services.

5. **Integrate gender sensitivity in the design of programs** for sex workers and other key populations. Gender inequality and discrimination result in differential access to services, limit engagement in HIV-prevention behaviors, and create barriers to health care. Any follow-on programs to COH III should engage various stakeholders (including the sex-worker community) to develop specific strategies for each key population that would eliminate gender norms and inequalities that increase HIV risk and reduce the uptake of services.

# 6. Annexes

## Annex 1: COH III Life of Project Quantitative Achievements

| Indicator Name | Disaggregation | Year One Target | Year One Results | Year Two Target | Year Two Results | Year Three Target | Year Three Results | Year Four Target | Year Four Results | Year Five Target | Year Five Results | Year Six Target | Year Six Results | Life of Project Targets | Life of Project Results |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HTC_TST: Number of individuals who received Testing and Counseling (TC) for HIV and received their results | **All** | **20,000** | **28,349** | **34,000** | **53,688** | **59,000** | **62,936** | **62,000** | **70,054** | **36,863** | **54,326** | 5,550 | **24,733** | **217,413** | **294,086** |
| | Male | | 16,334 | | 29,909 | | 33,242 | | 35,511 | | 28,743 | | 13,054 | | |
| | Female | | 12,015 | | 23,779 | | 29,694 | | 34,543 | | 25,583 | | 11,679 | | |
| *Number Female Sex Workers provided with TC | **Female** | | | | | | | | | 1,908 | **2,087** | 3,330 | **6,608** | **5,238** | **8,695** |
| *Number of **male clients of FSWs** provided with TC | **Male** | | | | | | | | | 954 | 2,146 | 2,220 | 8,610 | **3,174** | **10,756** |
| Number of individuals reached through community outreach that promotes HIV and AIDS prevention through other behavior change beyond abstinence and/or being faithful **(Other Prevention)** | **All** | 250,000 | **293,052** | 350,000 | 352,667 | 300,000 | 285,438 | 300,000 | 314,001 | 75,000 | 85,198 | N/A | N/A | **1,275,000** | **1,330,356** |
| | Male | | 151,950 | | 187,973 | | 153,441 | | 169,143 | | 46,106 | | | - | |
| | Female | | 141,102 | | 164,694 | | 131,997 | | 144,858 | | 39,092 | | | - | |
| Number of individuals reached through community outreach that promotes HIV and AIDS prevention through **abstinence and/or being faithful** | **All** | 250,000 | **327,906** | 350,000 | **318,855** | 300,000 | **259,407** | 250,000 | **267,955** | 63000 | **80267** | N/A | N/A | **1,213,000** | **1,254,390** |
| | Male | | 159,336 | | 154700 | | 126,361 | | 133,742 | | 40098 | | | | |
| | Female | | 168,570 | | 164155 | | 133,046 | | 134,213 | | 40169 | | | | |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PP_Prev: Percentage of individuals from priority populations who completed a standardized HIV prevention intervention including the specified minimum components during the reporting period **(For clients of sex workers only)** | All | | | | | | | | | 2518 | 1526 | 3500 | 3270 | **2,518** | **1,526** |
| PP_Prev: Percentage of KPs reached with individual and/or small group level HIV preventive interventions that are based on evidence and/or meet the minimum standards required **(Female Sex Workers only)** | All | | | | | | | | | 7630 | 7705 | 3700 | 4270 | **7,630** | **7,705** |
| Number of Peer Educators and Adult Youth Mentors trained | | | | | | | | | | | | | | | **1,265** |
| Number of Female Sex Workers trained as Peer Promoters trained | | | | | | | | | | | | | | | **145** |
| Number of lay counselors trained | | | | | | | | | | | | | | | **145** |
| Number of condom outlets opened | | | | | | | | | | | | | | **350** | **383** |

* Subset of indicator HTC_TST

## Annex 2: Index of Publications

**Publications and Abstracts**

- Kamanga J, Bwalya R. Fumpa H, Chelu L. A study to understand factors contributing to volunteer attrition and retention in the Corridors of Hope III (COH) Project, Zambia. Is volunteer retention possible? Presented at ICASA conference 2013; Cape Town, South Africa.
- Kamanga J, Ndubani P, Siziya S, et al. Effectiveness of HIV risk reduction interventions among female sex workers (FSWs) and long distance truck drivers (LDTD) targeted by the Corridors of Hope (COH) project along truck routes in Zambia, 2000-2009, presented at AIDS 2010, Vienna, Austria.
- Fomundam H, Maranga A, Kamanga J, et al. Improving HIV treatment adherence through a public-private partnership in Zambia. *World Journal of AIDS*, 2014:4. Published online March 2014: http://www.Scirp.org/journal/wja
- Kamanga J, Nyangu S, Maluza A, et al. improving the referral system for HIV clients in the Livingstone and Kazungula districts of Zambia. Quality improvement stories. COH III Project, FHI 360. October 2012.

**Studies**

- Radio Listening Programs: An Assessment of the Short Term Effects of the COH III Community Radio Programs. 2013.
- Zambia Corridors of Hope HIV/AIDS Prevention Project (COH III), Household Economic Assessment. March 2014.
- Estimates of FSW population size
- Zambia Corridors of Hope HIV/AIDS Prevention Initiative (COH III), Behavioral Monitoring Survey (BMS) report. 2012.
- Integrated Bio-Behavioral Surveillance Survey among FSWs and Behavioral Surveillance Survey among long distance truck drivers, 2015.

**Technical Guiding Documents**

- Minimum Package of Services for Female Sex Workers in Zambia, 2014. This package of guidelines was developed by COH III/FHI360 with support of the NAC and technical support from FHI 360's Bridge Project of India.
- Standard Operating Procedures for HIV/STI Prevention Program with Sex Workers in Zambia, 2014. These SOPs were developed by COH III with support of NAC and technical assistance from FHI 360 Bridge project in India.
- STI management guidelines and flow charts

**Posters**

- I'm HIV POSITIVE, but my partner is NEGATIVE. We are a happy and healthy family.
- Don't blame your partner… give support. Living with a different HIV test result is possible.
- Get more information about HIV test results from the health center.
- Don't be afraid. Love is about sharing your HIV test results with your partner.

## Annex 3: Summary of Select Abstracts and Technical Guidance Documents

## A. Publications and abstracts

**Kamanga J, Bwalya R. Fumpa H, Chelu L. A study to understand factors contributing to volunteer attrition and retention in the Corridors of Hope III (COH) Project, Zambia. Is volunteer retention possible? Presented at ICASA conference 2013; Cape Town, South Africa.**

BACKGROUND: The response to HIV in many resource-constrained countries has demanded greater reliance on volunteers and voluntarism. Retention of these volunteers has become a key challenge for programs. The COH III project has trained 1,410 volunteers; lay community psychosocial counselors and peer educators (PE) for sexually active adults, youth-adult mentors and peer educators for youth covering its 10 project sites. The first two sets of volunteers are engaged by two non-faith NGOs and the last two by a faith based local NGO. These volunteers are involved in community mobilization, behavior change communication and support the delivery of HIV testing and counseling. Monthly reports show just about 50% to be active in a given month. We set out to determine the status and factors contributing to attrition of volunteers within this project.

METHODS: Registers of volunteers (trained by the project through the standard syllabus from each of 10 the COH III sites) were reviewed to determine the rate of retention and the proportion of active and non-active volunteers. Active volunteers were defined as those who reported and worked consistently for the project in the last three months; non-active-volunteers were those who did not report for duty for the last three months without giving a reason. The volunteers are given an equivalent of US$10 transport refund whenever they were on duty. We selected two sites with high retention rates and two with low retention rates. Each site generated a list according to volunteer type and by status as active or non-active. A random sample was selected from each list for in-depth interviews; the first, middle and last name on the list were sampled. A total of 86 out of 96 selected were interviewed. In addition, FGDs were held with 6 participants at each of the four sites. A total of 24 volunteers participated in these discussions with project staff members and representatives of the sub-contractors who worked with the volunteers.

RESULTS: About 60% of the volunteers were active and 40% were inactive three months prior to the study. There were no differences between the sites between the active and the inactive volunteers. The mean number of years served (3.4 years vs. 1.25 years) at the sites with many inactive volunteers was higher than those sites with fewer inactive volunteers. Among the different groups, about 39% of lay psychosocial counsellors were inactive and 31% of PE for sexually active adults were inactive compared to 27% for YAMS; and 18% of the PE for youth. Higher proportion of active volunteers (86%) compared to inactive volunteers (68%) attended religious functions

regularly. Compared to inactive volunteers, active volunteers were more likely to be involved with programs other than the COH III project; 48% vs. 19% (p=0.007). A greater proportion of active volunteers (68%) reported receiving supervisory visits and feedback compared to inactive volunteers (31%; p=0.001). Among inactive volunteers, the top reasons for inactivity were a lack of enablers or support from the project, such as not being given identity cards, transport and uniforms, not being treated with respect and being treated differently from permanent staff. Among the active volunteers the major factor for retention was the passion and desire to work, to learn, to help others and having had experience with an HIV relative in the family.

CONCLUSION: To retain volunteers in HIV programs there is a need to address issues of relationship, including recognition of their work, involving them in work that contributes to job satisfaction and growth, and developing synergies with other organizations that provide other forms of incentives

**Kamanga J, Ndubani P, Siziya S, et al. Effectiveness of HIV risk reduction interventions among female sex workers (FSWs) and long distance truck drivers (LDTD) targeted by the Corridors of Hope (COH) project along truck routes in Zambia, 2000-2009, presented at AIDS 2010, Vienna, Austria.**

BACKGROUND: The COH project has targeted FSWs and LDTDs with behavior change interventions to reduce transmission of HIV. Four series (2000, 2003, 2006 & 2009) of Behavioral Surveillance Surveys (BSS) were carried out along major truck routes; Chirundu and Livingstone, to assess success of interventions.

METHODS: The BSS is a repeated cross-sectional survey. Mapping was conducted to develop a two stage cluster sampling; location, FSWs and LDTDs were selected using time and location dimensions. A 'take-all' approach was used to recruit FSWs at selected locations. Similarly, a 'take-all' approach was used to recruit LDTDs at truck stops. The sample sizes for FSWs were 403, 577, 740 and 842, respectively in 2000, 2003, 2006 and 2009. The sample sizes for LDTDs were 569, 592, 908 and 1,157, respectively in 2000, 2003, 2006 and 2009. The chi-square test was used to examine linear trends in sexual behaviors over time.

RESULTS: Between 2000 and 2009, condom use among FSWs at “last sex with clients” increased from 49.6% to 81.1% (p< 0.001) and “consistent use during the last 30 days” increased from 17.7% to 46.0% (p< 0.001). Condom use at “last sex with non-paying partners” increased from 37.6% to 55.4 %( p< 0.001) and “consistent use last 12 months” increased from 10.9% to 28.3% (p< 0.001). Among LDTDs, between 2000 and 2009, the proportion who had sex with two or more regular girlfriends diminished from 20.9% to 5.7% (p< 0.001). Condom use at “last sex with a regular girlfriend” increased from 43% to 72.7% (p< 0.001), while “consistent condom use” increased from 8.3% to 60.5% (p< 0.001). The proportion of LDTDs who had sex with two or more FSWs

decreased from 22% to 15.2% (p< 0.001) and those who had sex with two or more casual partners decreased from 7.7% to 1.5% (p< 0.001).

CONCLUSIONS: There are positive behavior changes among FSWs and LDTDs. These risk-reducing behaviors must be sustained and further intensified using innovative prevention approaches.

**Fomundam H, Maranga A, Kamanga J, et al. Improving HIV treatment adherence through a public-private partnership in Zambia. *World Journal of AIDS*, 2014:4. Published online March 2014: http://www.Scirp.org/journal/wja**

BACKGROUND: Effective ART with low viral loads and absence of STIs significantly reduces chances of HIV transmission to sexual partners. ART is therefore a key pillar in HIV-prevention interventions. Appropriate care and support is however an essential component for optimum treatment outcome, patient safety and HIV prevention benefit of ART. The scale-up and increased uptake of ART services has increased the strain on the already overstretched human resource capacity in the public facilities. This has impacted the quality of care and contributed to patients lost to follow-up. Therefore task shifting through engaging private sector pharmacists is a strategy to augment limited human resources.

METHODOLOGY: In partnership with the Livingstone General Hospital (LGH) and four private pharmacists, COH III Project through Howard University is promoting quality HIV care by engaging private pharmacists in adherence counselling, treatment and drug therapy monitoring. The LGH ART pharmacist allocates consenting, stable ART clients to participating pharmacies based on patient preference and willingness to be referred. Patients are given a schedule of visits to allocated pharmacies. Pharmacists provide medication/adherence counselling and monitor side effects. Patients with medication/treatment issues are referred back to the ART clinic for review, and medication refill.

RESULTS: Between October 2012 and August 2013, 280 patients (166 females, 114 males) were enrolled and followed by the four private pharmacist. A total of 192 (69%) of the patients had visited the pharmacy at least once, 70 (25%) at least twice, and 13% at least three times. The 33 clients referred by pharmacists to LGH were related to adverse drug reactions, suspected treatment failure, pregnancy, and treatment monitoring. The intervention has contributed to reduced workload for the ART pharmacist; better communication of treatment challenges, timely identification and referral of patients with medication-related problems, and reduced travel distances and waiting times for patients. This has consequently resulted in improved adherence and better patient outcomes.

CONCLUSIONS: Private pharmacies present a major opportunity to improve quality of HIV prevention, care and treatment particularly in poor human resource capacity settings in sub-Saharan Africa. Appropriate legal and regulatory framework needs to however be developed to guide the process.

**Kamanga J, Nyangu S, Maluza A, et al. improving the referral system for HIV clients in the Livingstone and Kazungula districts of Zambia. Quality improvement stories. COH III Project, FHI 360. October 2012.**

The Corridors of Hope HIV/AIDS Prevention Initiative (COH III) is a five-year, USAID/ PEPFAR-funded project. The two main objectives of the project are: (1) to provide comprehensive HIV and AIDS prevention services, which include HIV testing and counseling (HTC); and (2) to strengthen the continuum of care, including antiretroviral treatment (ART) services, through referral. COH III primarily provides services via Wellness Centers and outreach activities, through which health care providers/counselors provide HTC, screening and treatment for sexually transmitted infections (STIs), and family planning (FP) counseling. Referrals for HIV-positive clients include an assessment of their immediate needs for HIV care and supportive services and the provision of information on where and how to access HIV services from health facilities that offer the continuum of care.

COH III staff determined that although all HIV-positive clients are referred by Wellness Centers, less than a quarter of them reach the referral sites. In order to increase the proportion of completed referrals, COH III launched a quality improvement (QI) project in December 2009 in two districts, Livingstone and Kazungula. A QI team was formed to ensure that at least 50 percent of clients who tested HIV positive at COH Wellness Centers and who were referred for HIV care reach the referral ART facility within two months.

Through gap analysis, the QI team identified issues that contribute to a poor continuum of care, and then generated ideas for possible improvements that were introduced in December 2009. These changes were studied in May 2011, by reviewing run charts of completed referral rates from January 2010 to March 2011. Run-chart analysis demonstrated that although both Wellness Centers reached the 50-percent target occasionally, neither reached the target of 50 percent of referred clients completing their referral visit on a consistent basis, and both showed wide variation in their results from one month to another.

To better understand these differences, COH III staff members conducted telephone interviews and focus group discussions (FGDs) with clients who did not reach the referral sites and with PLHIV to identify the reasons for the low referral rate. Telephone interviews with 30 clients who did not complete their referral revealed the following reasons for not visiting a referral site: 1) they

were not interested in pursuing treatment (which could have been due to stigma or inaccurate beliefs about ART); 2) they were busy with work; and 3) they were out of town.

Three FGDs centered on why people might not go to the referral site after being given a referral. The FGD participants identified issues related to stigma as key factors for not seeking HIV clinical care services. According to participants, stigma leads to the preference for attending nongovernment or nonpublic service sites where clients have more anonymity. Furthermore, the participants identified a fear of spousal rejection or loss of their marriage if they revealed their HIV status. The issue of drug toxicity and fear of side effects were also identified as barriers. Lastly, FGD participants provided a host of recommendations to address the challenges they identified. Key suggestions included providing ART at Wellness Centers, collecting specimens for CD4 count enumeration among HIV-positive clients at Wellness Centers, and making ART referrals only to clients with CD4 test results.

In September 2011, COH III staff members organized a meeting to discuss the findings of the run-chart analysis, telephone interviews and FGDs. The QI team also reviewed how the QI monitoring system was being implemented. During this meeting, the team prioritized a set of additional changes to introduce, which were discussed with the district health teams. This second set of changes was then implemented.

In order to study the effects of the second set of changes, a wide stakeholder meeting took place in June 2012. During this meeting, COH staff together with health providers and district health officials conducted a review of the performance. The analysis confirmed that there was an improvement in the referral rate after the second cycle of changes at both sites, though considerable issues remained. Based on the run-chart analysis, the QI teams sustained and modified the changes identified through Cycle 2.

In addition to challenges related to access, a lack of client understanding of HIV and stigma, this QI project highlighted broader health system barriers. Issues that were beyond control of the Wellness Centers included long waiting times, limited laboratory services, lack of integrated HIV services, and lack of client follow-up at the ART centers and the government-run facilities. These contributed to less than optimal uptake of referrals for HIV care. Additionally, sites did not provide couples counseling and, in most cases, spouses came separately. Some areas are far away and in need of mobile outreach, but the district has been slow to facilitate this process.

Overall, the most important lesson learned was that it is difficult to achieve significant improvement in the quality of care if access to services is not addressed. Both teams applied QI methodology rigorously and were able to achieve some improvement. Many issues remained that go beyond the control of COH Wellness Centers. Moreover, a health system is limited in what it

can do to retain clients in the system when there are two steps in the process of care that are not provided in the same location.

The introduction and maintenance of QI activities was possible due to stakeholder buy-in, involvement and ownership. Regular QI meetings provided a platform for COH III staff to share the challenges they faced and ART center staff offer potential solutions. Regarding monitoring and documenting, we learned that while improving the reliability of measures during the improvement cycle helps make better decisions, changing improvement measures and the way indicators are collected might limit the interpretation of the run charts. Some issues and processes are selected over others for identifying changes, and it is not always clear how and why they were prioritized.

In summary, the consistent efforts and rigorous application of a QI model provided an opportunity for learning important lessons about reaching hard-to-reach populations in the health care system in Zambia. The QI project contributed to a slight improvement in the referral system that should be confirmed over a longer time period. An in-depth discussion should be held with USAID, Ministry of Health and COH III about the value of integrating two parallel systems of government-supported ART clinics and COH-supported Wellness Centers. Expansion of the services by the COH Wellness Center to include TB screening, FP counseling, CD4 testing and dispensing of ART can be part of a broader solution to reduce the number of missed referrals and lost clients and to improve the population's access to care. Additionally, the district health office should be engaged to address the issue of long queues at referral sites, including streamlining the appointment system. Clients should be given an option to choose where they want to receive ART. Lastly, expansion in services needs to be well thought out in terms of sustainability and therefore requires the strong support and involvement of the government and other stakeholders. It is important, in regard to ART, that there is an exit strategy for the project that would enable clients to continue receiving services without disruption or reduction in quality of care.

## B. Technical Guidance Documents

**Minimum Package of Services for Female Sex Workers in Zambia, 2014.** This package of guidelines was developed by COH III/FHI360 with support of the NAC and technical support from FHI 360's Bridge Project of India.

The National AIDS Strategic Framework (2014-2015) recognizes female sex workers as one of the key populations in the HIV response in Zambia. Current evidence shows that a female sex worker is over 10 times more likely to be infected with HIV and other STIs than other women in the general population. There are numerous reasons for this scenario, including engaging in unprotected sex for higher pay, an inability to negotiate for safer sex (such as the consistent use of

condoms), a lack of access to appropriate health services, social stigma, criminalization, sexual violence, drug and alcohol abuse — all of which increase their vulnerability. The clients of sex workers, mostly married men who may have other girlfriends, contribute to the transmission of HIV in both directions between sex workers and the general population. Thirty years since the first case of HIV was reported in Zambia, sex workers continue to face barriers to access quality HIV prevention and treatment services.

The MPSSW advocates for high-quality, comprehensive and integrated health services for sex workers. Since 2000, the Corridors of Hope project (implemented by FHI 360, with funding from USAID/PEPFAR) has targeted FSWs and their clients with HIV prevention services such as HIV testing and counselling, STI treatment services and behavior-change communication. Over the years, more services have been provided to FSWs, including family planning, screening for tuberculosis and malaria, and the formation of strong linkages with other implementing partners under the hospice of the district AIDS task forces. After several years and experience working with sex workers, although COH III developed this package for use with FSWs at the project sites, it can be implemented by any other organization involved in the provision of HIV prevention services to FSWs or other vulnerable groups and it can be used for community empowerment.

**Standard Operating Procedures for HIV/STI Prevention Program with Sex Workers in Zambia, 2014.** These SOPs were developed by COH with support of NAC and technical assistance from FHI 360 Bridge project in India.

In the forward to the Minimum Package of Services for Female Sex Worker in Zambia, it was stated that the National AIDS Strategic Framework of the National AIDS Council in Zambia recognizes female sex workers as a key population in the HIV response. The standard operation procedure is an important tool in standardizing the guidelines and operating procedures for implementing a harmonized multi-sectoral response against HIV among FSWs, hereinafter referred to as KP, in a consistent manner based on the best available evidence. While the development of customized solutions and approaches to address local challenges is crucial for effective programming, the standardization of definitions, norms and expected outputs is also necessary to provide the foundation for assuring a minimum accepted quality standards and serves as a guidepost to inform continuous quality improvement activities. The target users of these SOP are service providers, which includes any individual providing services to KP such as health care workers, peer educators/peer promoters, program staff and implementers, as well as policy makers. The target for SOP are organization that are involved in implementing or providing services to sex workers and their clients. The SOPs cover project management, behavioral interventions, biomedical Interventions, and structural interventions (that are necessary for quality services to improve the lives of FSWs in a significant way).

## C. Studies

### 1. Community radio programs

The COH III project conducted a study using community radio to effect social and behavioral change. The radio program project was designed as an intervention to: 1) increase the community's knowledge of HIV and AIDS; 2) change attitudes and beliefs about HIV and AIDS; and, 3) create intentions to change risky behaviors to reduce HIV infection.

Sites and listening groups

Five sites — Solwezi, Chipata, Livingstone, Chililabombwe and Nakonde — participated in the study. Nakonde and Livingstone produced two seasons of six radio programs, whereas Chipata, Chililabombwe and Solwezi each produced one season of five radio programs.

Each site had a designated listening group of people who were selected from the community. The listening groups consisted of adult males and females who were representative of their communities and also beneficiaries of COH III services. The target sample size at each site was 80 respondents, with varying numbers of group members attending each broadcast.

The majority of the participants in the listening groups were females (65%), and they were also less likely to drop out than males. Most participants were married, and more than 70% of the members were 20-to-40 years old. The dropout rate was highest among members in their 20s.

For the most part, members of the listening groups selected topics of interest to them and made a commitment to attend those broadcasts. Members of the listening groups discussed the program (and their reactions) for an additional 30 to 60 minutes, so each listening event lasted for about 60 to 90 minutes.

Program content

Community volunteers (and 12 members of the BCSM teams) received training in basic radio production at each site. The community volunteers generated the radio stories and produced the programs that were aired. The volunteers selected and developed the topics based on their interactions with other members of the community.

The programs focused on alcohol abuse, gender-based violence, counseling and testing for HIV, harmful cultural practices, communication skills and self-esteem. The radio-broadcast teams selected the topics according to factors that appeared to drive HIV infections in their communities.

Feedback from the listening groups also helped the teams to plan future programs and topics. Members of the COH III staff helped the community members to raise awareness of HIV prevention and to maintain the quality of the scientific information in the programs.

The radio programs contained a combination of discussions, music, and interviews (with residents, community leaders, and "experts"). Each program was 30 minutes long and it was broadcast twice a week for five consecutive weeks in Nakonde and seven consecutive weeks in Solwezi and Chipata.

Assessments

We conducted pre- and post-test assessments of the listening groups' knowledge, attitudes and intended behaviors associated with HIV and AIDS. The aim was to document any short-term effects of the community radio programs.

The post-test assessments were administered three to four weeks after the last radio program aired in each district. Although some members dropped out before the post-test, the dropout rate did not exceed 20% of the samples.

A total of 75% of the respondents across the districts reported that they did not consume alcohol. Those who did consume alcohol in Chipata and Solwezi said that they had reduced their alcohol intake after exposure to the radio program. More than 75% were able to identify the risks of alcohol consumption and the link with HIV infection, especially after listening to the radio program. The respondents in Solwezi and Nakonde were significantly more willing to reduce alcohol consumption after exposure to the radio program compared to their responses before the program.

After the GBV program, more respondents knew what GBV was compared to the pretest assessment. This was particularly noteworthy in Nakonde (43% to 99%) and Solwezi (80% to 100%). In Solwezi and Chipata, most respondents agreed that gender-based violence was not justified under any circumstance at similar levels in the pre- and post-test, but in Nakonde there was an increase in agreement with that statement — from 42% to 96% — which demonstrated a tangible shift in attitude.

Although there were marked increases in the proportion of respondents in Solwezi and Nakonde who believed that GBV could be prevented, there was little change between the pre-test and post-test responses in Chipata. Moreover, although 41% of the respondents across all the sites reported that they would take action against GBV in the next 3 to 4 months, only 42% in Nakonde and less than 25% in Solwezi and Chipata had done so.

The radio programs on early marriage and sexual cleansing (which involves unprotected sex with a widow by a family member to remove the dead husband's spirit) were broadcast only in Solwezi and Chipata. In Solwezi, the correct age for marriage (determined at the pre- and post-test) was between 21 and 25 years old, with a greater proportion endorsing the correct range at the post-test. For Chipata, most members of the community believed that the correct age was 17 to 20 years old,

because they believed that girls matured earlier. In both districts, the majority of respondents believed early marriages could be prevented.

In Solwezi and Chipata, there was an increase from the pre- to the post-test in the belief that there are dangers associated with sexual cleansing—chief among them, HIV infection. A greater number of listeners in the post-test of both districts also agreed that sexual cleansing should not be practiced in their communities. The majority of respondents also reported that they would take action or had already taken action against sexual cleansing in their communities.

All of the other radio program topics were unique to their districts. For example, Solwezi's listening groups were exposed to programs on multiple concurrent partners (MCPs), modes of HIV transmission and sex work. There was little change from the pre- to post-test in the knowledge and attitudes of the listeners, but a greater proportion of the respondents gave correct descriptions of the phenomenon during the post-test (from 46% to 86%). Although more than 95% of the respondents before and after exposure to the MCP program strongly disagreed that MCPs were acceptable, they reported that having more than one sexual partner in their community was common.

The respondents in Solwezi showed several improvements after listening to the radio program, including their ability to list the modes of HIV transmission, knowing different ways that sex workers can protect themselves and their clients, and understanding the meaning of the term "prostitute" as "a person who has sex with a lot of people" or "a person who engages in sex to earn a living."

Radio programs on *Gwedu,* girl-child initiation, and polygamy were exclusively broadcast in Chipata. *Gwedu* is forced entry and sex with a woman who is alone at home. Girl-child initiation describes various rites and procedures that are undertaken when a girl reaches puberty. Some of these procedures include lessons that may place a girl at risk for HIV infection, such as pleasing a man in bed. Polygamy was correctly defined by most Chipata respondents. Confusion between polygamy and multiple concurrent partnerships decreased after exposure to the radio program. Only 28% of the respondents would commit to informing community members about the dangers of polygamy.

*Gwedu* was recognized as risky/dangerous during the pre-test (93%) and the post-test (94%). The Chipata respondents identified HIV/AIDS and the spread of STIs as the top two risks of *Gwedu*. Respondent opinions on whether *Gwedu* should be practiced in the community was mostly negative before and after the radio program. However, only about two-thirds who said it should not be practiced would be willing to take action against it. The same was found for girl-child initiation: Although most agreed that girls should be taught about respect, menstrual hygiene, and how to interact with a man (not how to please a man in bed), only a third were keen on taking

action against girl-child initiation. So, community members acknowledged that certain traditional practices are harmful, they are not fully committed to eliminating them.

Radio programs on positive living for people living with HIV/AIDS (PLWHA), good marriage and "property grabbing" were only broadcast in the Nakonde district. Property grabbing describes the practice of seizing property from a woman upon her husband's death, leaving her and her children vulnerable to poverty, HIV and other health risks. After the radio program, a greater proportion of the respondents (increasing from 61% to 83%) disagreed that property grabbing should be allowed in the community. About 79% reported that they will or had already taken action to prevent property grabbing in their community.

The program on positive living for PLWHA demonstrated changes in knowledge and attitudes towards PLWHAs. For example, there was a significant increase in the number of respondents who agreed that the only way to determine whether someone is HIV positive is with a test (from 70% to 80%). In the post-test, more respondents were able to list things that an HIV-positive person can do to live a strong and healthy life. And although 83% of respondents were willing to take care of a family member with HIV before the radio program, 100% were willing to do so after listening to the program. However, observations showed that certain misconceptions about detecting and living with HIV probably contribute to stigma and discrimination against PLWHA.

The good-marriage radio program focused on couples communication and the reduction of gender-based violence. After the radio program, listeners had a greater understanding of what constitutes a good marriage: love, understanding, respect, harmony, and good communication. Respondents were also able to identify a greater number of positive things one could do to improve a marriage after listening to the program.

In summary, the radio programs achieved the bulk of the objectives, especially with respect to increasing the listeners' knowledge of HIV and changing their attitudes and beliefs. Based on pre and post-test assessment of listening groups, the program was also successful with its efforts to create intentions to change risk behaviors associated with alcohol abuse, multiple concurrent sexual partners, property grabbing, and positive living for PLWHA. However, the programs had varying outcomes across the sites with respect to gender-based violence, early marriage, sexual cleansing and the practice of *gwedu*.

We developed several recommendations based on our experiences with the radio programs:

- Radio programs should be tailored according to the age, marital status, and education of the listeners.
- Radio programs and similar interventions should have greater depth and fewer topics. Listeners need more knowledge to take effective action. Also, a deeper exploration of the

topic might bridge the gap between the listeners' knowledge and attitudes and their willingness to change certain risky behaviors, such as traditional practices.

- Some programs should address the relationships between all of the topics and issues, including HIV, *Gwedu,* MCPs, early marriage, and so on.
- Programs should reinforce positive messages and debunk misconceptions that cause stigma and discrimination.

**2. Household economic assessment**

The household economic assessment (HEA) is an ongoing programmatic instrument for the ROADS economic-strengthening efforts that was adapted for Zambia's COH III project. The HEA tool includes 70 questions from the ROADS HEA questionnaire (employed in Asia), which was in turn developed from Save the Children's HEA and Demographic and Health Survey (DHS) items.

The 70 questions measure:

- Levels of food and water insecurity (including household meal frequency and diversity)
- Agricultural and non-farm income
- Productivity and access to key services
- Finance and saving behaviors
- Household asset levels (including asset utilization)
- Household access to food from self-owned fields (self-production), markets (purchase), relatives and friends (gift/loans), and humanitarian relief
- Opportunities and constraints to access assets

- The HEA activity specifically sought to answer the following questions:
  - What factors show a positive association with an increased number of assets?
  - What factors show a positive association with economic confidence?
  - What factors show a positive association with access to financial services?
  - What factors show a positive association with the ability to pay for access to health services?
  - What factors show a positive association with lower levels of household hunger?

The COH III project selected respondents for the HEA from lists of active GSLA members in seven Zambian districts: Chirundu, Kapiri Mposhi, Kazungula, Livingstone, Nakonde, Solwezi, and Chipata. Initially, 877 members were selected from these sites, but 93 members from Kazungula were later dropped as Livingstone was selected to represent the southern province and had a larger sample to draw from. The total HEA sample was 784 members from six districts.

Data collectors were trained over a two-day period and administered the 70-item, 45-minute questionnaire between July 6 and July 19, 2013. Concurrently with these interviews, 12 focus

group discussions (FGDs) were conducted — 2 in each of the 6 districts. The purpose of the FGDs was to obtain qualitative data to further explain and confirm findings from the HEA tool. The FGD participants were also purposively selected from GSLA membership and each discussion group had approximately 10 participants. The discussions took between 50 and 70 minutes.

Results – descriptive statistics

*Demographic*: Most respondents were female (86%), since they are the main target of COH III's economic strengthening component. More than 75% of the respondents were between 25 and 54 years old, with the largest proportion between 35 and 44 (31%) and the smallest group less than 24 years old (7%). Livingstone had the highest proportion of youths, whereas Solwezi had the highest proportion of those over 55 years old.

*Household*: A common household size was five to eight individuals, with a typical household comprised of six persons—two adults and four children. All households reported having at least one orphaned or adopted child. On average, there were two sleeping rooms per household; 54% had earthen floors and 46% had cement floors. Houses were built with bricks or cement blocks and about 65% had a metal roof and 26% a grass or thatch roof.

Firewood and charcoal were the most common forms of cooking; about 9% in Nakonde, Kapiri Mposhi and Chirundu cooked with electricity. About 67% of the households had access to a pit latrine. Where households did not have access to a toilet, the bush was used. Drinking water was obtained from a covered well by 43% of the respondents; 20% used surface water (rivers, ponds, dams), 18% had piped water, and 12% used open wells. Livingstone had the most access to piped water (32%), and Chipata had the most access to covered wells (71%).

*Health and economic status*: A large fraction of GSLA members reported having good (30%) or excellent (43%) health overall. Kapiri Mposhi had the largest proportion of respondents with poor health (11%).

Except for the members in Livingstone, the respondents reported having two or more dependents (children) for every income earner. In Livingstone, the ratio was 1.6 dependent for each earner. Thirty-one percent of the households depended on one source of income, 51% on two and 18% on three or more sources.

The most common sources of income were sale of crops or animals (59%), street vending (37%), and casual or daily work (23%). Dependents (children) were often considered earners because they engaged in some of these income-generating activities. Across all the sites, 22% of the respondents were in salaried employment, but farming was the main source of income. Many respondents reported that household expenditures consisted primarily of food (91%), education (56%), and

agricultural inputs (such as seed and fertilizer) (29%), clothing (18%), housing (11%) and medical care (6.9%).

Household assets were defined as anything that has functional utility in producing food or earning income, or can be sold to earn income for the household. Nakonde had the highest proportion of 12 or more household assets as determined by the Zambian DHS, followed closely by Solwezi. Chirundu had the highest proportion of respondents owning only 1 to 8 assets. The most common assets reported were hoes, mattresses/beds, mobile phones, machetes, bicycles, and shovels.

The HEA tool also asked respondents how they felt about their economic situation. The COH III project viewed a person's perception of their current economic situation as a motivating factor to take positive action towards increasing household income or consumption practices. About 54% of the respondents believed that their economic situation had improved over the past six months, whereas a little more than 20% believing that it had gotten worse or stayed the same. The highest proportion of positive responses came from Livingstone, where 69% reported that their economic situation had improved in the past six months.

More than half of the GSLA respondents (57%) reported food insecurity in the 12 months before the interview. The highest food insecurity was reported in Livingstone (68%) and Solwezi (61%) and the lowest in Chipata (44%). Food insecurity was reportedly greatest in December, January and February because of increased expenditures for farm inputs (prepare, plant, manage crops), school fees, and the Christmas and New Year's holidays. By the time crops were harvested in April, food insecurity subsided. As a result, the majority of respondents who reported experiencing food shortages said it lasted only about 1 to 3 months. The HEA tool used the FANTA[1] household hunger scale, which indicated that 80% of the respondents reported little to no hunger in the 4 weeks before the interview.

"Food diversity" was defined as the number of food groups consumed in the 24 hours before the interview. The responses were binned according to the number of food groups: 1 to 3, 4 to 6, and 7 to 11. The highest proportion of respondents who reported the consumption of 7 to 11 food groups was in Nakonde (35%), whereas the highest proportion of respondents who reported only 1 to 3 food groups was in Livingstone (42%). The food types consumed most often were cereals and grains (96%), vegetables (90%), sugar (54%), and meat and fish (53%).

*Use of GSLA and COH III services*: More than 97% of the respondents used GSLA financial services for savings and 89% used it for loans. About 98% of the respondents reported that they had access to financial services, which were used for production and consumption, such as the purchase of goods for sale (43%), school fees (33%), food consumption (29%), farming inputs

[1] FANTA = Food and Nutrition Technical Assistance: An FHI 360 program that develops innovative tools, training curricula and other resources to design and improve food security and nutrition programs.

(27%) and starting a new business (17%). Most respondents also carried GSLA's insurance, called the Social Fund, but its use was also below 100%.

The GSLAs also provided a platform for discussions that were guided by the Household Production Guide (HPG) — a tool developed by COH III to encourage peer-to-peer exchanges of ideas and skills on self-selected topics. The participation rate in the discussions among GSLA members was below 50%; the most discussed topics were agriculture (53%), business (49%), livestock (25%), and HIV and health (17%).

The GSLA members were also given "livelihoods" training to increase their levels of food and economic security — most commonly in small-plot horticulture, savings, poultry and livestock. In the HEA interview, however, the majority did not report the adoption of new agricultural or business practices following the COH III training.

Of all other COH III services offered to GSLA members, HIV testing and counseling was accessed the most (26%). Others such as community sensitization on HIV, STI testing and counseling, malaria screening, and family planning were accessed by less than 10% of the respondents. Less than 5% of the respondents accessed peer education on HIV, GBV sensitization, alcohol sensitization, drama, the Stepping Stones[2] group, the REFLECT[3] group, TB screening, male circumcision and STI treatments.

Results — inferential statistics

We performed bivariate and multivariate analyses to identify the associations between household factors and outcome variables (level of household hunger, increased number of assets, economic confidence/perception of economic future, access to financial services/livelihoods training, and the ability to pay for health services). These analyses indicated that:

- Households with lower levels of assets were significantly more likely to experience hunger in the previous four weeks.
- Experience of hunger in the previous four weeks was not significantly associated with the size of household.
- Higher levels of assets were significantly associated with a higher number of income earners in the household and higher levels of dietary diversity.
- Feeling neutral or confident about one's economic future was significantly associated with a stable income, a positive change in income during the six months before the interview, a higher number of household assets, and an improved food situation in the past six months.

[2] Technique or method used to solve identified problems in a stepwise fashion.

[3] REFLECT = Regenerated Freirean Literacy through Empowering Community Technique: An approach to learning and social change through discussion with others, participating in life-changing decision making while improving one's ability to communicate.

- There were no significant associations between one's perception of an economic future and the adoption of new agricultural practices.
- There were no significant associations between access to livelihoods training and outcome variables.
- There were no significant associations between the ability to pay for health services and outcome variables.

We did find some interesting associations with household income (in contrast to "assets"). For example, higher levels of household income were significantly associated with having more income earners in the household. However, there were no significant associations between a) household income and the number of new business practices adopted in the past six months, b) whether the household had received any COH III livelihoods training in the past six months, and c) engagement in household food production. Additionally, when women controlled household income, the resources were often used for productive purposes or for consumption for all member of the household, rather than less-productive purposes, such as consumption of alcohol. Households with larger numbers of dependents tended to have more assets because more dependents could be engaged in productive actions or income-earning activities.

Conclusions

Overall, the HEA data revealed that households that were more resilient had a) more than one income earner, b) nine or more household assets (productive and long-term), and c) more diverse sources of income. The GSLA members often did not take advantage of other COH III services, and after the livelihoods training, only a small proportion adopted what they had learned to improve their economic situation.

Recommendations

Based on our collective results, we recommend the following actions:

- Future programs should determine which households are truly vulnerable before any economic strengthening interventions are conducted. Programs should conduct randomized controlled trials with non-participating populations to identify potential impacts (because the GSLA assessment population was only moderately vulnerable).
- Future programs could continue economic strengthening through GSLAs, but then encourage GSLA independence and sustainability through linkages with market-based financial services and the Ministry of Health. The program should also link GSLA members to promoters and suppliers of innovative technologies who could introduce commercial opportunities to the rural market.
- Stronger linkages should be made between any future GSLAs and other program services (because only 32% of the respondents reported that they received services from COH III other than GSLA).

- Future programs should strengthen the peer-to-peer component of exchanging information and skills through the Household Production Guide (HPG) platform to maximize the implementation of local best practices. Field support should also revise the current HPG curricula to increase the uptake of productive behaviors, such as the adoption of new agricultural and business practices.
- Livelihoods training should carefully select GSLA beneficiaries to make sure they are best suited for support or to apply newly acquired skills and knowledge.

**3. Estimates of FSW population size**

Background

Geographical mapping and population size estimates (PSEs) are needed for effective HIV prevention interventions and to identify locations where FSWs have a higher risk of acquiring or transmitting HIV/STIs. The results can be used to improve policies, program planning and management, to develop a sampling framework for studies (such as the BBS) and to measure trends in HIV behavioral variables. Also, a well-designed PSE of FSWs at the COH project sites had never been conducted.

Methods

All established "hotspots" for FSWs were mapped at the 10 COH sites with the help of peer promoters and key informants. All spots were stratified into bars/taverns, nightclubs, brothels, guest houses and lodges/hotels. Three different methods were used for the PSEs.

| Table 1: Combined FSW Population Size at Different Venues | | | | | | |
|---|---|---|---|---|---|---|
| Venue | **Bar/ Tavern** | **Night club** | **Brothel** | **Guest House** | **Lodge/Hotel** | **Total** |
| Population size | **618** | **175** | **212** | **165** | **79** | **1,249** |

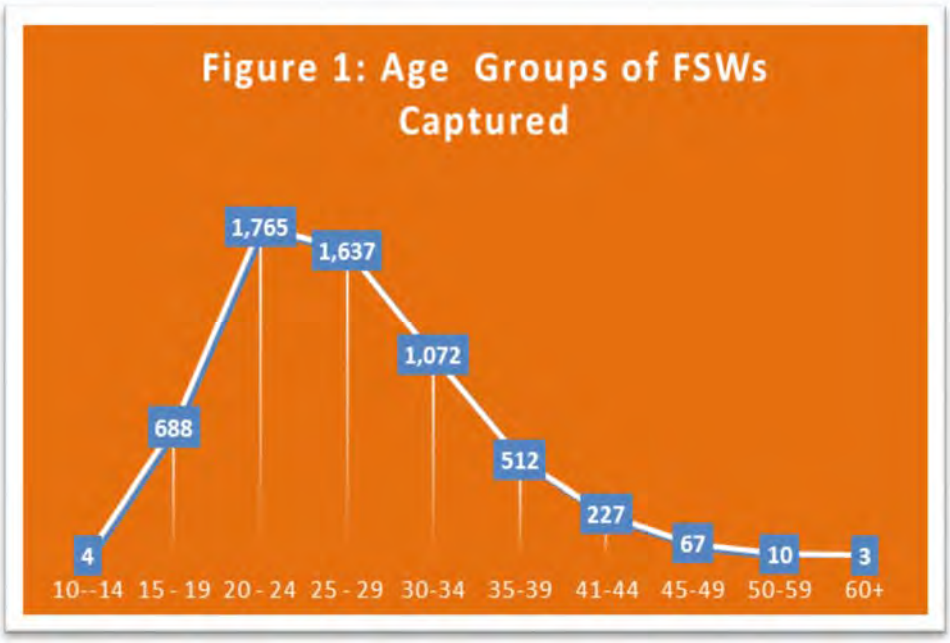
- Key informant interviews were used (after obtaining written consent) to estimate the size of the FSW population at each of the entertainment hotspots (bars and nightclubs).
- Census and enumeration methods were used at all of the places where FSWs lived or slept (usually brothels).
- The capture-recapture (CRC) method was used at all established entertainment hotspots.
- The data were entered and analyzed in Epi Info Version 7.0

Results

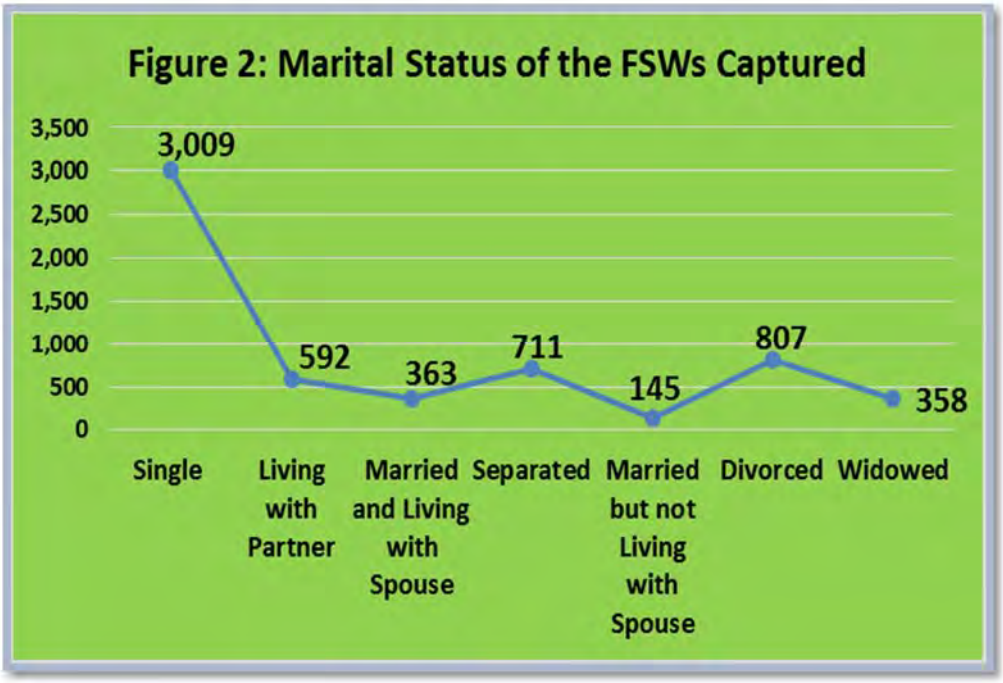
*Background Characteristics:*

During the CRC exercise, 64% (5,985) of the FSWs captured were interviewed to obtain background characteristics.

- Age: 12 to 67 years old
- The mean age for sex work is 22 years; the median age is 26 years.
- Most FSWs are young:
  - About 41% are 10 to 24 years old;
  - Less than 2% are above the age of 45 years.



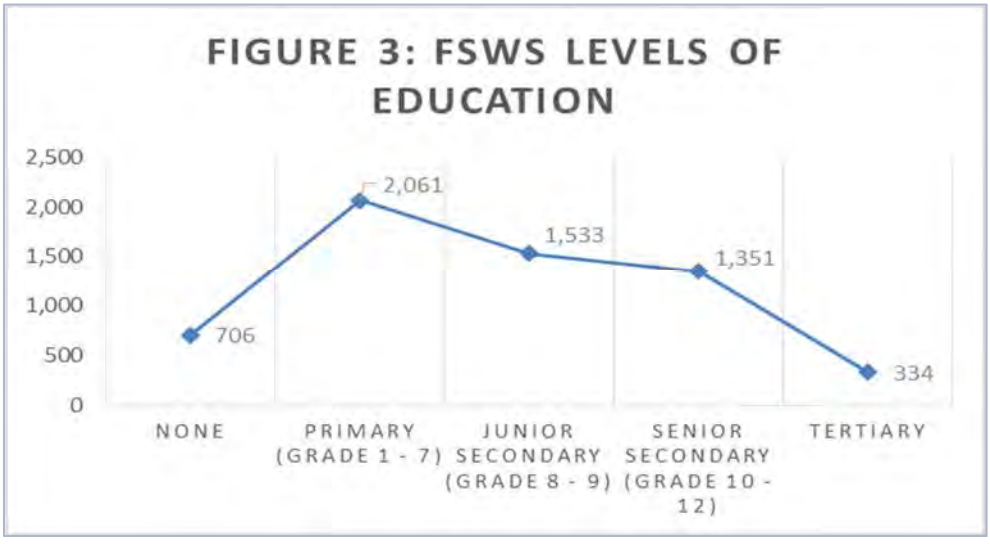
Marital Status:




Most FSWs are unmarried and live alone:

- 50% are single
- 14% are divorced
- 12% are separated
- 6% are widows
- 10% live with a partner,
- 2% are married but do not live with their spouses
- 6% are married and live with their spouses

Level of Education:



- 72% of the FSWs have less than 9 years of education, and of these:
  - 12% have no formal education
  - 34% have less than 7 years of education
  - 26% attended junior secondary school
- 22% attended senior secondary school
- 6% have more than 12 years of education

Population Size Estimation:

Table 2: Population Size Estimates Based on Three Methods

| Project District | **Key Informants Interviews** | | **Census (Brothels)** | | **Capture Recapture Method** |
|---|---|---|---|---|---|
| | **Lower Plausible** | **Upper Plausible** | **Lower Plausible** | **Upper Plausible** | |
| Chililabombwe | 350 | 1,113 | 425 | 638 | 881 |
| Chipata | 491 | 938 | 537 | 729 | 1,584 |
| Chirundu | 521 | 1,206 | 317 | 447 | 468 |
| Kapiri Mposhi | 311 | 748 | 151 | 262 | 629 |
| Katete | 240 | 461 | 210 | 236 | 370 |
| Kazungula | 257 | 730 | 173 | 233 | 285 |
| Livingstone | 927 | 2,040 | 384 | 531 | 2,227 |
| Nakonde | 543 | 999 | 364 | 496 | 1,303 |
| Sesheke | 127 | 362 | 75 | 116 | 586 |
| Solwezi | 969 | 2,150 | 350 | 498 | 1,015 |
| TOTAL | **4,736** | **10,747** | **2,986** | **4,186** | **9,348** |

The total number of FSWs was estimated to be about **9,348** (95% CI = 9,260 to 9,436).

Prevalence of FSWs:

Table 3: Adult Urban Female Population (15 - 49 years old) and Prevalence of FSWs

| Project District | **Adult Urban Females (number)** | **FSWs Prevalence (percent)** |
|---|---|---|
| Chililabombwe | 19,846 | 4.4 |
| Chipata | 29,689 | 5.3 |
| Chirundu | 3,666 | 12.8 |
| Kapiri Mposhi | 10,957 | 5.7 |

| | | |
|---|---|---|
| Katete | 5,399 | 6.9 |
| Kazungula | 688 | 41.4 |
| Livingstone | 36,623 | 6.1 |
| Nakonde | 10,330 | 12.6 |
| Sesheke | 4,392 | 13.3 |
| Solwezi | 23,592 | 4.3 |

The average prevalence of FSWs in the adult urban female population (15 to 49 years old) at the COH III sites was 6.4%. The project estimates that there were between 9,100 and 9,500 FSWs (15 to 49 years old) in the 10 COH III project sites.

## 4. Integrated Bio-Behavioral Surveillance Survey (IBBSS)

### 1.0 INTRODUCTION

Zambia has one of the highest HIV burdens in Sub-Saharan Africa with HIV prevalence in adult population (women and men aged 15-49 years) estimated at 13 percent. However, HIV prevalence is higher among females at 15 percent than males at 11 percent. Heterosexual contact is the predominant mode of HIV transmission in Zambia and Female Sex Workers (FSWs) play a significant role in the HIV/AIDS epidemic.

To monitor and assess the progress of the prevention interventions provided to female sex workers and their male clients mainly the long distance truck drivers, repeated rounds of cross-sectional behavioral and STI prevalence surveys (Behavioral and Biologic Surveillance Survey - BBSS) have been conducted: The following have been previous rounds of surveys:

- 2000: FSW (both behavioral and biologic) and LDTD (only behavioral)
- 2003: FSW (both behavioral and biologic) and LDTD, uniformed personnel and minibus drivers (only behavioral)
- 2005: FSW, LDTD, behavioral only, bus drivers and uniformed personnel.
- 2006: FSW and LDTDs behavioral only
- 2009 FSW and LDTDS behavioral only

FHI 360's Corridors of Hope (COH III) project (September 2009-October 2015) with funding from USAID/PEPFAR implemented a comprehensive HIV prevention strategy in 10 border and transit selected districts in Zambia to reduce sexual transmission of HIV among most at risk populations including FSWs and their clients residing in or passing through border towns. The strategies included HIV testing and counselling, behavior change through outreach and peer education, improved management of STIs, social marketing of condoms and family planning. The integrated Bio-Behavioral Survey (IBBS) among FSWs and Behavioral Surveillance Survey

(BSS) among LDTDs was carried out to measure the outcomes of these prevention interventions efforts among FSWs and LDTDs.

**OBJECTIVES**

The primary objective of the study was to measure and examine the outcomes of existing prevention interventions through a cross-sectional assessment change in sexual risk behaviors among FSWs and LDTDs and assess prevalence of HIV and other STIs among FSWs.

**STUDY DESIGN**

Using a cross-sectional survey design, the BBSS among FSWs—now referred to as Integrated Bio-Behavioral Surveillance Survey (IBBSS) and BSS among LDTDs—was carried out in five districts of Zambia namely Ndola, Solwezi, Chirundu, Kapiri Mposhi and Livingstone/Kazungula,. The population covered were FSWs and LDTDs aged 18 years and above. However, FSWs aged below 18 years were recruited if they self-confessed to be sex workers. Behavioral data was obtained by face-to-face interview with consenting participant FSWs and LDTD using a structured questionnaire. Blood and self-collected vaginal swabs were collected and tested at site and at TDRC for HIV, syphilis and *Trichomonas vaginalis*, *Neisseria gonorrhea* and *Chlamydia trachomatis* infections. Data collection was conducted for a period of four weeks between 18$^{th}$ August and 19$^{th}$ September 2015. The survey protocol and data collection instruments were approved by the TDRC Ethics committee and the FHI 360 Protection of Human Subjects Committee (PHSC).

**SURVEY END POINTS**

Primary endpoints/outcomes for FSWs were change in sexual risk behaviors such as proportion of FSWs using condoms at last sex encounter and consistent condom use with different types of clients; proportion ever tested and known their HIV status; and, prevalence of HIV and other STIs (*T. pallidum* (syphilis), *N. gonorrhea* infection (gonorrhea) *C. trachomatis* (chlamydia infection) and *T. vaginalis* infection. Among LDTDs the survey endpoints were proportion with more than one sexual partner and condom use with different sexual partners; proportion ever tested and know their HIV status.

Secondary Endpoints/Outcomes: Proportion of FSWs and MLDTDs reached through COH III services; HIV incidence estimates; proportion of confirmed HIV positives among FSWs whose infection is recent by subjecting HIV test results to an Incidence test to identify recent infection.

## 2.0 METHOD

### A. Target Groups and Sites

The target for the IBSS were FSWs and BSS was LDTDs. The study was carried out in Ndola, Solwezi, Kapiri Mposhi, Chirundu, and Livingstone/Kazungula, A mapping exercise was conducted prior to data collection to determine the exact location where the FSWs and LDTD could be found and estimate size of the population.

### B. Sample Sizes

The sample size was calculated with primary objective of measuring changes in selected behavioral indicators over time. These indicators were measured as proportions. For each target group, there were assumptions on the key indicator, an initial or baseline value of the key indicator, magnitude of change required to be detected, level of significance/precision, power to observe change if it occurred and the assumed design effect. The percentage of the population of interest that was eligible for consideration for indicator was estimated

Overview of Survey Sites and Target Sample Sizes for FSWs and LDTDs

| # | Site | Province | Target Sample Size for FSWs | Target Sample Size for MLDTDs |
|---|---|---|---|---|
| 1 | Chirundu | Southern | 94 | 504 |
| 2 | Kapiri Mposhi | Central | 220 | 252 |
| 3 | Livingstone | Southern | 264 | 336 |
| 4 | Ndola | Copperbelt | 262 | 140 |
| 5 | Solwezi | North-Western | 210 | 168 |
| | **Total** | | **1050** | **1400** |

### C. Sample Design

A cluster-based design was used to sample each target group. Mapping was done to identify cluster units, such as night clubs, bars and truck stops, for each of these target groups. The survey used time-location approach[4] to recruit the FSWs and the LDTDs into the survey. All time-location clusters were listed, and the number of individuals was noted for each cluster, where available. Clusters were then randomly selected from the list, and members of each selected cluster were interviewed until the target sample size was reached for that group (FSW were recruited between 20.00hrs and 23.00hrs, those refusing or preferring interview in the morning were followed). All target group 'take- all" members were asked to participate in the survey due to the limited number of persons in the target groups in the sites.

### D. Data Collection

The BSS questionnaire averaged 35-45 minutes and included questions on demographic

[4] Behavioral Surveillance Surveys, Guidelines for Repeated Behavioral Surveys in Population at Risk of HIV, published by FHI 2000.

information, perceptions of peer behaviour, STI treatment-seeking behaviour, number and types of sex partners, condom use, and exposure to COH interventions. All questionnaires were pre-tested. The 2015 behavioural component and biologic BSS was based on the same semi-structured behavioural questionnaires of previous years with additions of a few new questions such as those addressing stigma.

Trained staff in data collection administered the questionnaire to consenting participants at their place of work at night clubs, bars and truck stops. Following completion of the behavioural questionnaire, FSWs were referred to and consented separately for the STI biologic component, which included collection of blood specimens for HIV and syphilis (rapid and confirmatory tests), self-administered swabs for gonorrhoea, chlamydia (using PCR technique) and trichomonas's (using *In-Pouch* cultures). They were then given appointment to report in the morning at designated health centre for post-test counselling and results at a designated government ART facility. Those who tested HIV positive were handed over to the ART clinic and those with syphilis or other STIs were referred for treatment. The completed questionnaires for FSWS and LDTDs and biologic results were transported from the field to Tropical Diseases Research Centre (TDRC) for data entry. At TDRC laboratory HIV incidence test was done using Lag Avidity assay to assess newly acquired HIV infection. HIV test using rapid screening and confirmatory test, qualitative syphilis test and In-Pouch cultures were examined at the sites. All specimens were taken to TDRC for re-testing and confirmation.

D. DATA PROCESSING AND ANALYSIS

Epi Info 6 and SPSS software were used for data entry and analysis, respectively. The biological data was later merged and linked with the behavioral data at TDRC. Descriptive statistics for key behavioral and socio-demographic characteristics were calculated using frequencies, means and medians for each site and for the total sample. Chi-square tests were used to compare proportions between sites and variables. In addition, multivariate and logistic regression analysis was used to determine the magnitude of associations (odds ratio, 95% confidence interval) between variables of interest, controlling for sexual behaviors and socio-demographic characteristics. A result yielding a p-value less than 5 percent was considered statistically significant.

## 3.0 RESULTS

SOCIO-DEMOGRAPHIC CHARACTERISTICS

## 3.0 FEMALE SEX WORKERS

Data was collected from 1,189 FSW and 1,113 (94%) were tested for HIV and syphilis.

**Age:** The overall median age for FSWs was 26years, 41% fell in age group 14-24 while 42% were in age group 25-34 years. The age distribution differed by HIV status. The FSWs who were HIV positive where older than those with HIV negative; median 28 years vs 23 years ($p<0.001$).

**Education:** The median number of years completed in school was 9 years, 62% attained secondary education while 0.5% reported higher than secondary education.

**Alcohol**: About 43% of FSWs reported daily alcohol consumption.

**Sexual partners**: About 47% of FSWs reported having had 5 or more different sex partners with nearly 9 % reporting 10-14 sex partners in last 7 days.

**Condom use at last sexual intercourse:** About 44% FSWs used a condom with a non-paying partner, 78% used a condom with a paying client. About 82% said that they suggested condom use to their partners during last sex. About 94% had heard about female condom and 22% have ever used it.

**STDs**: About 19% and 18% of FSWs reported history of genital discharge and genital sores respectively in the last 12 months. About 94% said they cannot have sex with a partner who indicates had an STD.

**HIV test**: about 95% of FSWs reported having ever taken an HIV test, 68% tested within the past year and 98% received test results. About 97% have heard of antiretroviral therapy (ART).

**Perceptions, Knowledge and Stigmatizing attitudes**: About 35% did not think the chances of acquiring HIV was great. About 23% thought that a person can get HIV from mosquito bite, 16% thought a person cannot be protected by abstaining from sexual intercourse, 18% said a person cannot be protected by having one uninfected sex partner while 83% felt if a family member of the family became ill with HIV, they would want it to remain a secret.

**COH III project:** About 75%of FSWs had heard of the COHIII project and 45% had received STDs services several times from the project.

**HIV and Syphilis Prevalence and HIV incidence**

**HIV Prevalence:** 1, 113 representing 94% who completed behavioral questionnaire were tested and counselled for HIV using standard national algorithms and had a syphilis test. The samples that tested HIV positive were subjected to incidence test using the LAG Avidity assay to established infections acquired within 130 – 140 days.

Overall HIV prevalence was 56.4% among FSWs ranging from 46% among FSWs tested in Livingstone to 73% tested in Chirundu. HIV positives were older than HIV negative, 28 years vs 23 years ($p<0.001$). There were more HIV positive FSWs who reported taking alcohol on daily basis than HIV negative FSWs, 45% vs 40% ($p<0.001$). FSWs with history of genital discharge had a high HIV prevalence than HIV negative, 23% vs 12% ($p<0.001$). Similarly the prevalence of HIV was higher in FSWs with previous history of genital ulcer than those without history, 24% vs 13% ($P<0.001$).
Recent HIV infection based on Lag Avidity assay: 51.4% had long term HIV infection, 3.2% had infection suggestive of elite controller or being on ART, 1.6% were found to have recent infection.

**Syphilis Prevalence**: The overall syphilis prevalence was 21%, ranging from 18% in Chirundu and Livingstone to 29.9% in Ndola. Syphilis infection was higher among FSWs with primary education than with secondary, 25% vs 20% ($p<0.001$). Syphilis positive FSWs were older than syphilis negative FSWs, 30% vs 10%, ($p<0.001$),

**Trichomonas vaginalis Prevalence**: The prevalence of trichomonas vaginalis among FSWs was 9% with a range from 7% to 10%. The prevalence was highest among FSW in Chirunu (15%) and lowest in Solwezi (4%).

### 3. 2 LONG DISTANCE TRUCK DRIVERS

**Data was collected from 1406 LDTD (Chirundu 503, Chililabombwe/Solwezi 284, Kapiri Mposhi 155, Livingstone/Kazungula 289, Ndola 175).**

**Social Demographic Characteristics:** The mean age of LDTDs was 38 years, 59% were below 40 years. The mean years in school was 10.7 years, 85% had secondary or higher education level.

**Country and Time**: Almost a third (31%) of truckers interviewed had Zimbabwe as country of origin. Nearly a third (30%) were at border for 3 or more days, 76% had been away for a month continuously in past 12 months. Over a third (35%) had made over 6 trips crossing borders in the past 3 months while 48% said last time were at border they had stayed for 2 or more days.

**Behavior**: About 15% consumed alcohol daily in last 4 weeks. About 33% had 3 or more female sexual partners in the last 12 months including wives. About 30% had sex with at least one girl friend while 9% had sex with 2 or more girlfriends last 12 months. About 23% had sex with 2 or more FSWs in last 12 months while 8% had at least one sex partner. About 6% said they had sex with 1 or more casual sex partner who were not a girl friend or FSW.

**Condom use at last sex**: About 7% used condom with wife, 63% with a living in partner, 63% with girlfriend/Regular sex partner, 86% used condom at last sex with FSW, 77% used condom with a non-regular (casual) partner. 70% of drivers had at least one condom, 44% had more than 4 condoms at time of interview.

**Reasons for not using condom**: The top 6 reasons were; 37% said they did not find it necessary, 29% did not think partner would have a disease, 22% said a condom was not available, 19% felt condom would reduce pleasure and 19% said they did not think of it at time of sex while 13% said partner objected .

**Female condom**: About 86% have heard about a female condom, 11% had ever used it, 55% knew where to get a female condom with 62% preferring pharmacies as most comfortable place where to buy a female condom while 18% felt bars, guest houses as most comfortable places to get or buy a female condom.

**STDs:** About 97% have heard of diseases passed through sexual intercourse, 67% know genital discharge, 33% know burning pain, 58% know genital sores and 30% know swelling in the groin as symptoms and signs of STDs in men. About 25% know abdominal pain, 43% genital discharge, 23% foul smelling, 19% burning pain, 38% genital ulcers, 16% groin swelling and 22% genital itching as symptoms of STDs in women.

About 13% of drivers had history of genital discharge, 8% of genital ulcer and 16% of either genital discharge and or genital ulcer in last 12 months.

**HIV:** Almost all (99%) have head of HIV and 75% know someone with HIV or AIDS. Incomplete knowledge still exists; about 11% think you can get HIV from mosquito bites, 14% from sharing meals. Only 61% thought infection could be transmitted from mother to baby, 75% said through breast feeding and 95% that you can get infected through sharing of an infected needle.

There was also incomplete knowledge on other prevention variables and stigmatizing attitude; 12% did not think you get protected by being faithful to one uninfected partner and 11% by abstaining. About 39% felt that if a family member is infected it should remain a secret.

About 84% of truck drivers have ever tested for HIV and 87% of them within last 2 years and almost all (99%) received their HIV results and counselling.

**Circumcision and COH project:** About 39% of the male drivers were circumcised and 26% have ever talked to staff of the Corridors of Hope III project.

## 4.0 CONCLUSION AND RECOMMENDATION

1. Women are entering sex trade and get out of school system early. This appear to be true given that 40% of FSWs are aged below 25 and the median for education is 9$^{th}$ grade. They get infected early with HIV and other STIs and this become apparent as they grow older in the sex work profession. Syphilis prevalence was higher among those with primary education compared to those with secondary level of education while HIV prevalence was higher among older FSWs. The more years spent in school would help reduce risk behavior. Deliberate policy is needed to retain the young girls in school and provide them with lifesaving skills.

2. Daily alcohol consumption at 43% is high among FSWs. Alcohol use has a high correlation with increased risky sexual behavior. The policy makers and Program managers must begin to take into consideration strategies of reducing substance use among the target groups.

3. Condom use among FSWs is low with non-paying partners. These are usually seen as permanent or trusted sex partners. Just about 56% who had sex with non-paying partner said used condom at last sex. Even with paying partner over 20% of them did not use condom at last sex. Similarly condom use among truck drivers with girlfriends considered as regular sex partners is low. Only 63% used condom at last sex with regular partners. Programs involved with prevention of sexually transmitted infection in these target groups need to explore innovative ways and address reasons for non-use of condom such as availability, desired pleasure, risk perceptions and negotiation skills.

4. A large proportion LDTD are married but continue to have multiple sexual partners that include FSW and regular and non-regular sex partners and have sex without protection or using a condom. Only 63% used condom at last sex with a girlfriend, only 81% used with a known FSWs and only 7% used condom with a wife. In this situation, the wives of these men are being exposed to high-risk behaviors even when they themselves do not engage in it. It is therefore imperative that HIV prevention programs stress the promotion of faithfulness and fidelity with their spouses or regular partners.

5. Nearly all of the FSW surveyed had heard of a condom, but complete and comprehensive knowledge of prevention among FSW and LDTD is lacking especially among FSW. Interventions must therefore go beyond “raising awareness” and use innovative and interactive behavior change communication that is effective in developing the knowledge and skill sets necessary for vulnerable people to analyze situations, HIV risk and to remove myths.

6. Despite encouraging findings from recent ZDHS 2013/14 of a drop in HIV prevalence in general population by one percent from 14.3% to 13.3%, the prevalence among FSW

remain very high. One in two FSWs is infected (56%) and new infections are occurring. Given that most of FSWs have tested and know there HIV status, it is possible that most of them are on life saving drugs, ART which is improving their lives and sustaining the prevalence levels. It is therefore important to accelerate test and treat strategy given that ARV are a prevention.

7. The overall reported prevalence of STIs is very high among FSW and LDTDS. The prevalence of syphilis just like HIV is more than 3 times the national figures. Given that STIs facilitate transmission and acquisition of HIV efforts aimed at controlling transmission of traditional STIs and creation of enabling environment to reduce stigma and improve access are needed.