Evaluation of the Partner Notification, Tracing and HIV Testing Program in Cambodia

FINAL REPORT

HIV Innovate and Evaluate Project

Contract AID-442-C-13-00001

13 October 2017

This study is made possible by the generous support of the American People through the United States Agency for International Development (USAID) The contents of this study are the sole responsibility of the HIV Innovate and Evaluate Project and do not necessarily reflect the views of USAID or the United States Government.

USAID FROM THE AMERICAN PEOPLE

PEPFAR

HIV INNOVATE AND EVALUATE PROJECT

Acknowledgements

This study is made possible by the generous support of the American People through the United States Agency for International Development (USAID). The contents of this study are the sole responsibility of the HIV Innovate and Evaluate Project and do not necessarily reflect the views of USAID or the United States Government.

We are indebted to the National Center for HIV/AIDS, Dermatology, and STDs of the Cambodian Ministry of Health, under whose auspices the Partner Notification Tracing and HIV Testing (PNTT) program operates. The completion of this study was made possible by the contributions of a number of people including: PASPs, CMCs, CMAs, CMS, VCCT counsellors, ART counsellors, AUAs; and USAID HIV Flagship project (KHANA and FHI360) other implementing partners, including Chhouk Sar 1 clinic, SCC, PSOD, BSDA, MHC, CWPD and Korsang.

We also would like to express our sincere gratitude to the Flagship (KHANA and FHI 360) management team for their coordination and support in contacting their implementation partners about this evaluation on PNTT at Siem Reap, Kampong Cham, Chhouk Sar 1 and Meanchey ART clinics. We also thank provincial and operational districts health departments and organizations where we conducted the study and all their staff members, as well as local authorities, community support volunteers, outreach workers, and all participants and their families, for their excellent contributions, collaboration, and support of the data collection. This study could not have been completed without their efforts.

Our national consultants, including field researchers, are at the heart of the study. We would like to express our appreciation to them for their responsible, reliable work.

Table of Contents

Acknowledgements i
Summary iv
Acronyms vi
1. **Introduction** 1
1.1 Background 1
1.2. PNTT Program Description 2
1.2.1. PNTT Objectives and Strategies 2
1.2.2. PNTT Structures and Activities 3
1.2.4. PNTT Implementation 5
2. Evaluation Rationale 6
3. Evaluation Objectives 6
4. Evaluation Questions 6
5. Evaluation Scope 6
6. Evaluation Design 6
7. Evaluation Methods 7
7.1. Study Population 7
7.2. Sample Size and Sampling Strategy 8
7.3. Evaluation Team 9
7.4. Data Collection 9
7.4.1. Data Collection Team and Field Work Management 9
7.4.2. Training for Data Collection 9
7.4.3. Instruments 10
7.5. Determination of Costs 10
7.5.1. Conceptualization and measurement of costs 10
7.5.3. Reference Period of Costing Data Collection 10
7.5.4. Sources of Costing Data 10
7.6. Data Management 10
7.7. Data Analysis 11
7.8. Quality Assurance 13
7.9. Stakeholder Engagement 13
8. Ethical Considerations 13
8.1. Confidentiality 13
8.2. Protocol compliance 13
9. Limitations 13
10. **Results** 15
10.1 PNTT Quantitative Findings 15

10.2 Qualitative Findings From in-depth Interview of Key Informants 17
10.2.1. Responses from PLHIV 17
10.2.2. Qualitative findings from in-depth interview of providers 18
10.2.3 PNTT implementation activities and roles of providers 20
11. Issues, Best Practices and Lessons Learnt 21
10.3. Cost Allocation 23
12. Discussion 26
13. References 28
14. Annex 29
Table 10. Partner Tracing by Location 29
Table 11. Characteristics of PLHIV participated in the evaluation 30
Table 12. Number of Providers participated in the evaluation 30
Table 13. Activities done by PASP in implementing PNTT 31
Table 14. Activities done by CMC in implementing PNTT 32
Table 15. Activities done by CMA in implementing PNTT 33
Table 16. Activities done by CMS in implementing PNTT 34
Table 17. Activities done by VCCT counsellors in implementing PNTT 35
Table 18. Activities done by ART counsellors in implementing PNTT 35
Table 19. Definition, Roles and Responsibilities of Providers 36
Form A 37
Form A1 38
Form A2 39
Form B 40
Table 20. Matrix for PNTT Costing Data Input 41

Summary

Background

Towards Cambodia's goal of eliminating new HIV infections, the National Center for HIV/AIDS Dermatology and STDs (NCHADS) has implemented the HIV Partner Notification, Tracing and Testing (PNTT) since 2014 as a key approach to trace and test partners of individuals diagnosed with HIV. The PNTT program has been scaled up to 14 ODs by the end of 2016 under the national program, with plans to scale up to all operational districts in Cambodia by the end of 2017. The USAID HIV Flagship Program (Flagship) has implemented PNTT in eight sites since 2014.

Rationale

PNTT is central to the Cambodia national HIV program's goal to achieve an end to new HIV infections by 2025, focusing on detecting new HIV cases through partner referral services that encourage HIV positive clients to disclose their status to their partners and bring their partners for counselling and testing. No systematic evaluation of PNTT under Flagship has yet been undertaken.

Objectives

The overall objective of this evaluation was to provide evidence on the performance of PNTT toward improvement of its implementation. The specific objectives were to:

1. Describe the implementation of Flagship PNTT project including activities, roles and responsibilities of involved persons, and processes;
2. Assess the effectiveness of the implementation of Flagship PNTT project based on HIV case yield and number of HIV partners tested compared to the national program PNTT services;
3. Identify gaps/challenges of the implementation of Flagship PNTT project; and
4. Cost-effectiveness of the implementation: cost per partner successfully tested and cost per HIV+ partner found.

Scope

This evaluation covered 4 Flagship-supported PNTT implementation sties: Siem Reap, Kampong Cham, and Chhouk Sar 1 and Meanchey ART clinics. The evaluation measured the programs' effectiveness and cost-effectiveness.

Methodology

Qualitative and quantitative methods were employed in this evaluation. Programmatic data were obtained from NCHADS and Flagship for the quantitative data analysis, while in-depth interviews with key informants and PLHIV were conducted to obtain qualitative data. Through discussions with USAID, NCHADS, and Flagship, 4 sites were purposively selected based on PNTT implementation and HIV disease burden from ART sites covered by Flagship.

A total of 55 respondents from Siem Reap, Kampong Cham, Phnom Penh (Meanchey ART clinic in Bassac OD and Chhouk Sar 1 in Phnom Penh) participated in the in-depth interviews, of which 27 were PLHIV (15 who allowed partner tracing and 12 who did not) and 28 were health providers. Health providers included PASPs, CMCs, CMAs, CMS, VCCT counsellors, ART counsellors, AUA staff, Case Managers, Program Managers, NGO staff and Clinic Managers who worked on various PNTT areas and were selected as key informants for this study to participate in the in-depth semi-structured interviews.

Findings

Overall, 19%, 30% and 34% of partners of new HIV cases were tested in Kampong Cham, Siem Reap and Chhouk Sar 1, respectively between 2014-2016. In Siem Reap, of 810 new index HIV cases, 241 (30%) partners were traced and tested for HIV, and 100% of them were HIV negative. In Kampong Cham, of 366 new index HIV cases, 68 (19%) partners were traced and tested. The HIV positive yields among partners in Kampong Cham and Chhouk Sar 1 were 7.4% and 7.5%, respectively (these data were not available for Siem Reap OD and Meanchey ART Clinic).

The B-IACM implementation roles and responsibilities and implementation activities were similar across study locations, and followed closely the approach outlined by NCHADS. Most providers understood the main objective of the PNTT. Overall, the implementation of PNTT across sites was similar and good, with 1) PNTT services regularly provided in the community, at health centers, at VCCT, and ART clinics, 2) a consistently good level of completion of the necessary forms (average completion rates 79%), and 3) client confidentiality being well-protected.

The main barriers for partner notification and HIV testing were: fear of divorce, fear of losing a partner, fear of financial loss, and fear of domestic violence. Motivating factors were the benefit gained in protecting the health and wellbeing of family, especially of children, as well as concern for partners' health, and to avoid the consequences of being too sick to work, thereby losing financial stability.

The total additional cost of PNTT in 2016 was $1,647 in Chhouk Sar 1, $2,974 in Siem Reap and $1,137 in Kampong Cham. The additional cost of PNTT per new HIV index case identified was nearly identical across sites, ranging from $9.40 to $10.33 per new HIV index case in each location. The additional cost of PNTT per partner tested was highest in Kampong Cham ($34), lowest in Siem Reap ($16), and was $27 in Chhouk Sar 1. The cost per newly diagnosed HIV positive partner in Kampong Cham was $1,137 and in Chhouk Sar 1 was $824.

Conclusion

PNTT has been shown to be effective in Siem Reap, Kampong Cham, and Chhouk Sar 1. For the most recent full year of data, Siem Reap appeared to perform best, with a 64% partner testing rate and the lowest cost per HIV test of partners, most likely because of the more intensive effort put forth by implementing staff. There remain challenges with data management, and an expressed need for additional training and guidelines in PNTT.

Acronyms

ACM	Active Case Management
AIDS	Acquired Immune Deficiency Syndrome
ART	Anti-Retroviral Therapy
AUA	ARV Users Association
B-CoC	Boosted Continuum of Care
B-CoPCT	Boosted Continuum of Prevention to Care and Treatment
B-IACM	Boosted Integrated Active Case Management
B-LR	Boosted Linked Response
CBPCS	Community Based Prevention Care and Support
CMA	Case Management Assistant
CMC	Case Management Coordinator
CMP	Case Management Provider
CMS	Case Management Supporter
CoE	Center of Excellence
CPICT	Community Peer Initiated Counselling and Testing
CSV	Community Service Volunteers
EW	Entertainment Worker
GFATM	Global Fund for AIDS, TB and Malaria
GoC	Group of Champions
HIV	Human Immunodeficiency Virus
HTC	HIV Testing and Counselling
KP	Key Population
MMM	Mondul Mith Chuoy Mith
MSM	Men who have Sex with Men
NAA	National AIDS Authority
NCHADS	National Center for HIV/AIDS, Dermatology and STI's
NECHR	National Ethics Committee for Health Research
NGO	Non-Governmental Organization
OD	Operational District
OW	Outreach Worker
PASP	Provincial AIDS Secretariat Program () Manager
PEPFAR	President's Emergency Plan for AIDS Relief
PHD	Provincial Health Department
PLHIV	Person/People who Living with HIV
PMTCT	Prevention of Mother to Child Transmission
PNTT	Partner Notification, Tracing and HIV Testing
PPN+	Provincial Network of People living with HIV
PWID	People Who Inject Drugs
RMAA	Rapid Monitoring and Analysis for Action
SOP	Standard Operating Procedure
STI	Sexually Transmitted Infection
TasP	Treatment as Prevention
TB	Tuberculosis
TG	Transgender Woman
UIS	Unique Identifier System
UNAIDS	United Nations Agency for HIV/AIDS
URC	University Research Co., LLC
USAID	United States Agency for International Development
VCCT	Voluntary and Confidential Counselling and Testing
WHO	World Health Organization

1. Introduction

1.1 Background

Global Context

It is estimated that of the 36 million people living with HIV (PLHIV) globally, 19 million (40%) are unaware of their HIV status (UNAIDS, 2016). To reach these undiagnosed PLHIV, more effective HIV testing strategies are required. These strategies need to increase coverage and improve effectiveness of HIV testing to achieve the UNAIDS goal of diagnosing 90% of PLHIV by 2020 (UNAIDS, 2014). One potential key strategy identified for enhancing effectiveness and coverage of HIV testing is the HIV partner notification approach (WHO, 2016). However, HIV positive individuals are often reluctant to disclose their status due to fear of separation from their partner, apprehension about possible divorce and because of stigma and discrimination (Fentene, 2013).

Partner Notification, Tracing and HIV Testing (PNTT) is a voluntary process where health workers or trained lay providers inquire about the sexual or drug injecting partners of individuals diagnosed with HIV. With the individuals' consent, voluntary HIV testing and counseling (HTC) is offered to these partners either through passive or active (assisted) PNTT approaches (WHO, 2016).

Passive partner referral approaches place the partner notification responsibility on the HIV positive client, while assisted or active HIV partner notification approaches leverage the provider to contact HIV exposed partners of HIV positive clients and assist clients' disclosure of HIV status to their partners in a safe manner. The 2016 *WHO Supplemental Guidelines for Partner Notification* recommends the use of the three types of assisted partner notification approaches: 1) provider referred, where provider contacts client's partner while maintaining client's confidentiality; 2) contract referred, where the client agrees to notify her/his partner within a timeline; if not, the provider contacts partner without disclosing client's identity; and 3) dual referred, where the provider assists the client both to notify partner of possible HIV exposure and to disclose the client's HIV positive status (WHO, 2016).

Assisted partner notification approaches have been shown to bring in partners of PLHIV for HTC (Fentene, 2013; WHO, 2016). For example, a demonstration study in the US showed that 98% of partners were successfully traced and tested for HIV through the dual partner notification approach, and 38% of partners were successfully traced and tested through the contract referral approach (Song, 2012). The HIV positive yield among partners successfully traced and tested ranges from 20% to 64% (Brown, 2011; Hogben, 2007). Based on these and many similar studies, in 2016 WHO provided a "strong recommendation" to incorporate assisted PNTT approaches as part of the routine HIV testing and counseling (HTC) services in order to reach exposed and undiagnosed partners of PLHIV (Brown, 2011; Hogben, 2007; Song, 2012; WHO, 2016b).

Well-trained PNTT counselors will effectively discuss partner notification services during HTC with HIV positive clients to encourage clients to disclose their HIV status. HTC and ART consolers who are trained are ten times more likely to introduce the subject of PNTT with clients than those counselors without partner notification and tracing counseling training (Fentene, 2013). While factors such as age, gender, socioeconomic status, access to services, place of testing, etc., affect patterns of disclosure, the quality of partner notification counselling and the competency of counselors to effectively communicate the importance of timely disclosure are needed for a successful PNTT, regardless of the referral approach used (Fentene, 2013; Bott, 2013).

The PNTT services are rooted in the patient's voluntary cooperation in providing names of sexual or drug injecting partners while ensuring the confidentiality of the patient's personal information when tracing partners. It entails protecting the absolute confidentiality of the entire notification process. Therefore, maintaining confidentiality of patients' information is essential for a successful HIV PNTT service. The

ethical issues relating to confidentiality and partner notification, within the context of HIV infection, are complex. The individual's right to confidentiality can be in conflict with the partner's right to be protected from medical risk. Consequently, the notion of "shared confidentiality" is important in PNTT services to protect patients' rights while protecting partners from known medical harm (Abraham, 2002). Shared confidentiality refers is when an HIV positive individual wishes to involve significant others, family members or relevant health care practitioners in the HIV testing and counselling process. Health care practitioners educate diagnosed clients on the importance of disclosure of their HIV status and encourage them to do so. Shared confidentiality with a partner or family members, trusted others, and healthcare providers is often highly beneficial to HIV-positive clients (WHO, 2016).

Cambodia Context

In Cambodia, more than two thirds of all new HIV infections in 2014 were estimated to occur among sexual partner relationships, and of those, about half were from spousal relationships (NAA, 2015). The need to trace spousal partners and provide HIV prevention services for discordant couples is key to reducing new infections in Cambodia (NCHADS, 2016b). PNTT has been implemented since 2014 in Cambodia to trace and provide HTC to partners of individuals living with HIV (NCHADS, 2016b). PNTT functions under the umbrella of the national HIV program strategy that is referred to as "Boosted Integrated Active Case Management" (B-IACM), and utilizes the "Identify and Reach" (IR) operationalizing mechanism to identify and reach PLHIV who do not know their HIV status and their partners (NCHADS, 2017). B-IACM emphasizes in the provision of individual-focused services and follow-up along the HIV cascade to effectively identify all undiagnosed cases and reduce lost to follow-up towards viral suppression. PNTT leverages the B-IACM platform to reach newly diagnosed HIV cases and serodiscordant couples at various entry points and along the HIV cascade. Flagship implemented PNTT in eight high HIV burden sites since 2014.

1.2. PNTT Program Description

1.2.1. PNTT Objectives and Strategies

According to the *Cambodia Guidance Note on Integrated Case Management and Partner Tracing and HIV Testing for Cambodia 3.0 Initiative*, PNTT aims to accelerate and maximize access to HTC and ART among those at highest risk and enable Treatment as Prevention (TasP) among discordant couples (NCHADS, 2013). The guidance note outlines the tracing of partners of PLHIV in a "snow-ball approach", where high risk and HIV-infected individuals refer their partners for HTC in an ongoing referral chain. Under the Cambodia 3.0 initiative to end new HIV infections by 2020, PNTT leverages the key strategies of: 1) targeting all sexual partners and drug injecting partners of PLHIV, 2) supporting timely disclosure to partners and access to HIV testing, 3) enforcing the concept of "shared confidentiality" in managing PLHIV and their partners, 4) adopting existing tools to operationalize and monitor partner tracing and testing, and 5) implementing the snow-ball approach using identified partners as entry points to bring in potentially exposed partners for testing (NCHADS, 2013).

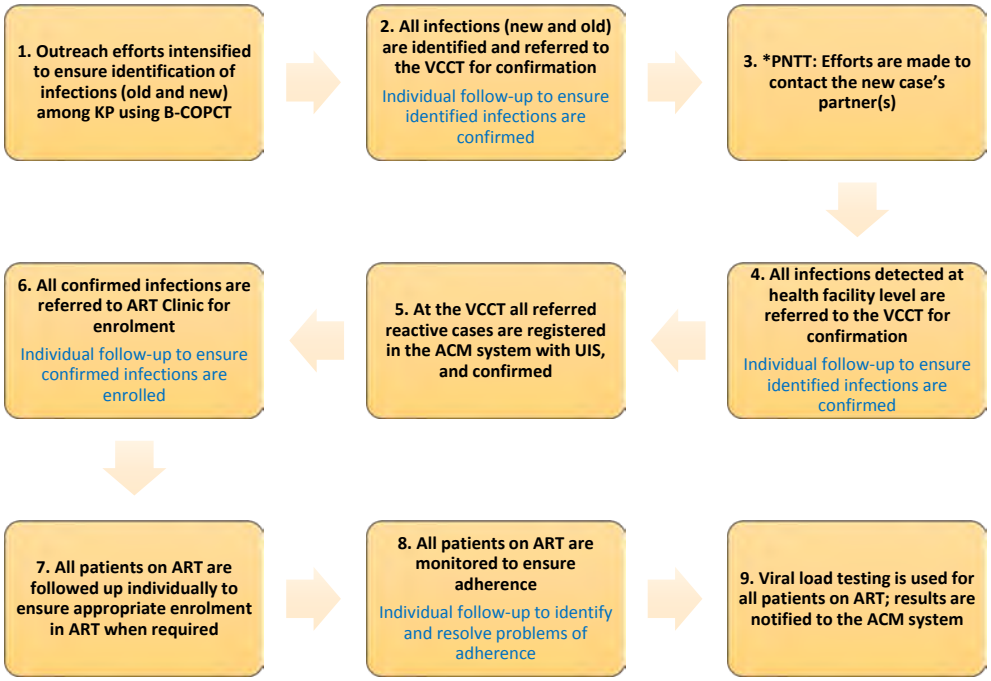
The ultimate objective of the PNTT program in Cambodia is to ensure early HIV case detection among the estimated 12,000 undiagnosed people living with HIV (NCHADS, 2016a). PNTT is a manifestation of the "Identify, Reach" strategy to identify all new infections and reaching them with HIV services and referral under the umbrella of the B-IACM strategy activity cascade as depicted in figure 1. B-IACM is the main strategy for the national HIV program where it provides individual focused HIV case management services along the HIV cascade with identify reach (IR) and intensify, retain (IR) mechanisms to implement B-IACM and PNTT (NCHADS, 2013).

Through the efforts in reaching partners of KP and high-risk general population (GP) such as serodiscordant couples, pregnant women, TB, STI, and OI co-infected patients, the Cambodia national HIV strategic plan identified various entry points to provide PNTT services. These entry points include: Health Provider Initiated HIV Testing & Counseling (HPITC), Community or Peer Initiated HIV Testing and

Counseling (C/PITC), Community Based Prevention, Care and Support (CBPCS) for targeted GP and, PLHIV already enrolled in HIV care that fall under the Boosted Continuum of Care (B-COC) approach (NCHADS, 2013). The PNTT program was implemented in Cambodia since 2014 and scaled up to 14 ODs by the end of 2016; its implementation activities and structure is described in detail in sections 1.2.2 and 1.2.3.below.

1.2.2. PNTT Structures and Activities

PNTT is nested in the B-IACM strategy that provides a comprehensive client-oriented support across the HIV cascade. PNTT plays a critical role in B-IACM, as depicted in figure 1.



**PNTT services are also offered at HCs, ART clinics and during outreach - multiple attempts are made to encourage clients to disclose their status and bring their partners for HTC*

Figure 1. Cascade of B-IACM activities, including PNTT

As depicted in figure 1, all potential transmission contacts of confirmed HIV cases (including spouses, sweethearts, regular customers of entertainment workers, and drug injecting partners) and high-risk GP such as pregnant women are offered partner notification counseling services at the time of diagnosis at voluntary and confidential counselling and testing (VCCT) centers, ART clinics, as well as at health center HTC locations. HIV positive clients are asked about the number of frequent sexual partners or drug injecting partners and their HIV status. If client volunteers and provide consent to provide partners' names and contact information, the contact information is obtained and the client is offered various partner notification methods to choose from while offering the assisted-partner notification approach with active participation of the counselor in the notification process.

Children and infants are traced and tested through infected adult cases identified through HTC of HIV positive pregnant women and mothers that come though family clinics, ANC, nutrition wards, reproductive health clinics, as well as TB and STI clinics. The "at-birth testing" policy was implemented in Cambodia in 2016 that allows newborns of an HIV positive mother to be tested for HIV in the labor ward upon delivery to reduce losses to follow up. PNTT works to ensure follow-up the mother-infant pair until the PCR test is confirmed based on the national testing algorithm for HIV-exposed infants.

In Cambodia, PLHIV are encouraged to disclose HIV status to their partners within one month of diagnosis. The PNTT services are designed to be voluntary, require clients' consent, and ensure

confidentiality at all times. To ensure early case detection and to alleviate the challenges associated with status disclosure to partners, the national program implemented four types of partner notification approaches (See Figure 2): 1) provider referral: provider contacts client's partner(s) while maintaining confidentiality of the client (does not disclose client's name or status); 2) client referral with disclosure: client contacts partner(s) and discloses status; 3) conditional referral: client agrees to contact partner(s) within a set period of time, but if unable to do so, the provider contacts the client's partner(s) while maintaining confidentiality of the client (the provider should not disclose the client's name or status); and client referral without disclosure where client promotes HIV testing to their partners without disclosing their own status by using a partner referral card.

Approaches 1 and 3 are assisted partner notification approaches where the health care worker actively participates in the notification of partners and assists the HIV positive client in disclosing status, while approaches 2 and 4 rely on the client to notify partners on their own. If partners are successfully traced and tested, PNTT provides additional services such as peer and couples counseling, counseling on disclosure and, couples conflict mitigation services while enforcing the principles of shared confidentiality with everyone involved in the partner tracing and HIV testing processes. For those diagnosed that fail to notify their partners, the ART counselor and case managers continue to encourage disclosure during ART visits.

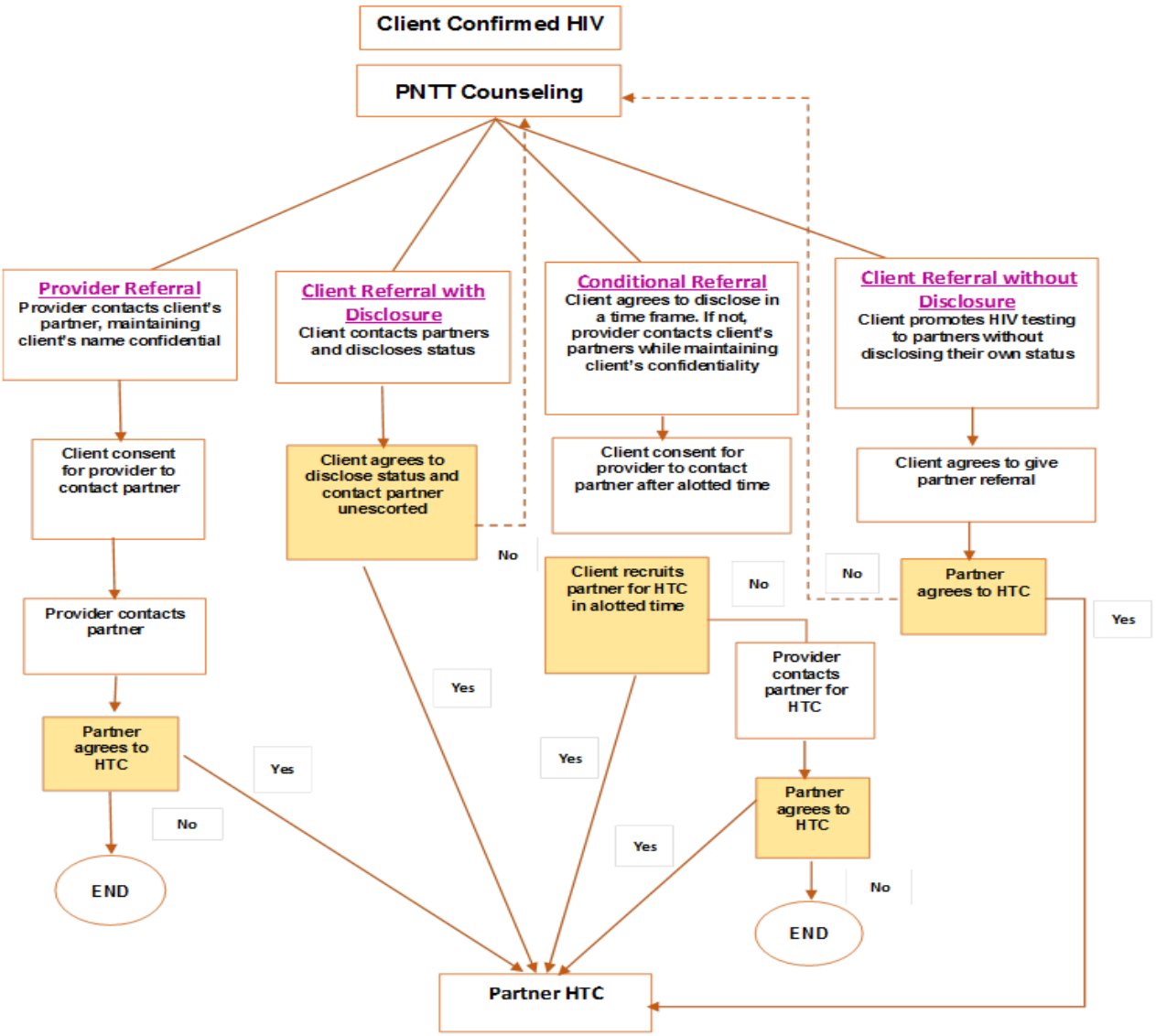


Figure 2. PNTT Referral Models Implementation. Source URC.

1.2.4. PNTT Implementation

NCHADS began implementation of PNTT in 2014. PNTT is offered in communities, at VCCT, and at ART clinics through VCCT/ART counsellors, NGO staff, outreach workers, Village Health Support Groups (VHSG) and Community Service Volunteers (VHS) all serving as Case Management Support (CMS) as guided by the NCHADS B-IACM strategy to find remaining HIV positive cases (NCHADS, 2017; NCHADS, 2015). In 2015 under the new case-based surveillance system (B-IACM) PNTT was scaled up to cover 14 high burden ODs at the end of 2016 with plans to scale up to all ODs in Cambodia.

In 2016, NCHADS evaluated the PNTT program in five operational districts (Siem Reap, Battambang, Kampong Cham, Preah Sihanouk and Social Health Clinic in Phnom Penh) with the objective of documenting epidemiological and programmatic data of HIV serodiscordant couples at pre ART/ART services; and to explore challenging factors in the implementation of PNTT. The evaluation reported that only 14% of partners were successfully traced and tested among spouses/partners with unknown HIV status, and about 55% of partners were successfully traced and tested among serodiscordant couples. The study also showed that 59% of children were successfully traced and tested among those with unknown HIV status (NCHADS 2016a).

The USAID HIV/AIDS Flagship Project (Flagship) implemented PNTT at 8 ART sites since 2014: 2 Provinces (Siem Reap and Kampong Cham), 4 Operational Districts (Posenchey, Bassac, Dang Kor and Chaktomuk) and 2 clinics (Chhouk Sar 1 and Chhouk Sar 2). PNTT under flagship differed from other implementations in the national program in the following ways: 1) a Case Management Assistant (CMA) from Flagship worked at OD level to assist the CMC implementing B-IACM, 2) Flagship provided TA two times per month to key staff involved in implementing B-IACM through coaching, meeting and training, 3) Flagship provided support to CMC to conduct supervision to referring health facilities, NGOs, and outreach programs and, 4) Flagship provided computers and office supplies to the ART clinics. The Flagship CMA staff placed at OD was primarily responsible for collecting and entering the B-IACM data in the B-IACM dashboard and analyze data to assess gaps and investigate lost to follow in the B-IACM cascade including tracing discordant couples and partners of newly diagnosed individuals.

Under the system, an existing government staff member in the OD was designated to this function in addition to the regular government-assigned duties which often leaves little time to invest in case-finding activities. Flagship-assigned CMA focused primarily on case finding activities and was a core group member of the Group of Champions (GoC) that oversaw the overall B-IACM activities through the HIV cascade. The CMA worked closely to assist the Case Management Coordinator (CMC) whose responsibility was to manage the B-IACM, and ensure that all the key players were working together to ensure that newly HIV cases are identified and each case was followed individually along the B-IACM cascade including PNTT to ultimately reduce lost to follow-up at each stage of the HIV cascade. The Flagship CMA was believed to play a key role at the OD level in tracing partners and in improving data use for case findings of discordant couples at PNTT Flagship sites. In addition, the provision of computers through the Flagship program at the six PNTT implementation sites was hoped to improve use of data to monitor activities along the B-IACM cascade as well as to follow new cases individually to ensure partner testing and provision of care and treatment services. Flagship-supported regular supervision visits carried out by the CMC to health facilities and communities to improve the PNTT programs at Flagship sites. Furthermore, the Flagship program provided training and technical assistance to key staff implementing PNTT to ensure program success.

2. Evaluation Rationale

No systematic evaluation of PNTT under Flagship has yet been undertaken. Evidence on the implementation of PNTT is critical to understanding its performance and to guide its future elaboration under the national program.

3. Evaluation Objectives

The overall objective of this evaluation was to provide evidence on the performance of PNTT toward improvement of its implementation. The specific objectives were to:

1. Describe the implementation of Flagship PNTT project including activities, roles and responsibilities of involved persons, and processes;
2. Assess the effectiveness of the implementation of Flagship PNTT project;
3. Identify gaps/challenges of the implementation of Flagship PNTT project; and
4. Estimate the cost of the implementation of PNTT.

4. Evaluation Questions

The following six evaluation questions guided the objectives and methodology of the evaluation:

1. What were the PNTT approaches/models implemented by the 4 Flagship selected sites: Siem Reap, Kampong Cham, Chhouk Sar 1 and Meanchey ART sites?
2. How were the processes of PNTT models implemented by Flagship at each of the 4 selected sites including the roles and responsibilities of key person involved in implementing PNTT? What went well and what needs to be improved?
3. How effective were the PNTT models implemented by Flagship, as measured by ratio of partners of newly diagnosed PLHIV tested for HIV divided by the number of newly diagnosed PLHIV?
4. What were the challenges faced in the implementation of PNTT in the Flagship project?
5. What suggestions might improve the implementation of PNTT in the Flagship project?
6. What were the costs of implementing PNTT, as measured by cost per individual tested for HIV and per HIV positive yield?

5. Evaluation Scope

The evaluation measured the effectiveness of PNTT program in the four Flagship sites: Siem Reap, Kampong Cham, Chhouk Sar I, and Meanchey ART clinic that was implemented since 2014. The cost effectiveness of the program was examined and outcome of the PNTT program was compared between the four Flagship sites.

6. Evaluation Design

A process evaluation design was employed to address the evaluation objectives, designed to be formative and also to provide analysis and information on effectiveness. The formative component described the processes of PNTT implementation and suggest improvements to program implementation.

The principles of empowerment evaluation were applied, involving technical experts from NCHADS in the entire process, including planning, protocol review, data collection, review of the analysis and validation. This approach was designed to best support NCHADS toward improvement of the national program.

Cost allocation was employed in order to estimate the cost per individual tested for HIV and cost per partner HIV positive under PNTT. Cost allocation is the process of identifying, aggregating, and assigning costs to activities. This study design was retrospective in nature, leveraging data from past financial

records, budgets, invoices, inventories, contracts, etc. Primary data was collected from staff of implementing organizations including at OD and PHD levels, using questionnaires when necessary.

7. Evaluation Methods

Quantitative
20% of the total of "Form A", "Form A1", "Form A2", and "Form B" (see Annex for Forms) were systematic randomly selected from each of the 4 locations. The selection steps were: 1) all patient files of PLHIV who were on ART and had partners at the selected sites were included for random selection, and 2) 20% of those forms were systematically randomly selected. The full program dataset provided by NCHADS and Chhouk Sar 1 were used as the basis for analysis of program effectiveness. Cost data were collected from the 4 locations.

For the qualitative component, in-depth interviews were held with PLHIV, including PLHIV that allowed tracing of their partners (n=16) and PLHIV that did not allow tracing of their partners (n=11), and with key informants (n=28)that included: PASP, CMC, CMA, CMS, VCCT counsellor, ART counsellor, AUA working at of Siem Reap and Kampong Cham Provincial Health Department and Phnom Penh Municipality Health Department; and USAID HIV Flagship project (KHANA and FHI360) other implementing partners, such as Chhouk Sar 1 clinic, SCC, PSOD, BSDA, MHC, CWPD and Korsang. These respondents were selected based on the sampling strategy described in section 7.2.

Qualitative

The Delphi method using expert reflection was employed in order that implementation activities, the process of implementation, and factors affecting the implementation can be systematically identified and suggestions for improvement be brought forth. Data gathering were triangulated to ensure reliability of the responses to the questions. This was undertaken through inquiries with implementers, stakeholders, and experts at the national level.

A purposive sampling technique was used to choose stakeholders and PLHIV (including PLHIV that allowed tracing of their partners PLHIV that did not) to participate in the process evaluation. The number of participants were not be limited, but was decided in the process of data collection and analysis. The process was finished when the principal investigator determined that sufficient data were obtained and triangulated and no new themes emerged. This process was applied to both data collection from key informants and PLHIV.

27 PLHIV were purposively selected from the three different sites to participate in the process evaluation: 15 PLHIV that allowed tracing of their partners and 12 PLHIV that did not allow tracing of their partners. PLHIV were selected for interviewing based on the following criteria (see Table 1): 1) age 18 years or older, 2) received care and support from implementing partners of Flagship, 3) received ART at selected ART selected sites, 4) PLHIV with partners, 5) PLHIV that had disclosed their status since 2014, 6) Khmer speaker, and 7) able to adequately grant informed consent.

In addition to the data from the interviews, relevant documents including the SOPs guiding BIACM-PNTT implementation was reviewed in order to get an overview of the implementation as a whole, and specifically to identify the existing information concerning implementation arrangements and corresponding strategies. The reports and other relevant documents were also sources of data to guide this process evaluation. Validation of some activities were also undertaken during the interactions with the program implementers, stakeholders, and PLHIV.

7.1. Study Population

This evaluation was committed to implementer ownership. Thus, inclusive involvement of all direct implementers at national and sub-national levels and stakeholders in the community was necessary to

ensure that suggested improvements were emerged and guided the practice as a result of inclusive interviews with key informant cadres (n=28): Case Management Coordinator (CMC), Case Management Assistant (CMA), Case Management Supporters (CMS), VCCT counselors, ART counsellor, PASP Manager, Case Manager (NGO staff), and members of the Group of Champions at provincial and national levels and participated in the Rapid Monitoring and Analysis for Action (RMAA) group, and ARV Users Association (AUA) and PLHIV (n=27)

7.2. Sample Size and Sampling Strategy

Through discussions with USAID, NCHADS, and Flagship, 4 ART sites were purposively selected from ART sites provided technical assistant by Flagship: Chhouk Sar 1, Meanchey, Siem Reap, and Kampong Cham Pre-ART/ART Clinic. The selection criteria were: 1) ART sites where have been started PNTT project in 2014; 2) high numbers of PLHIV living in those coverage areas, and 3) Pre ART/ART sites having higher numbers of PLHIV who allowed tracing of their partners.

Numbers of PLHIV participated in the evaluation

27 PLHIV were selected out of those, 12 of PLHIV were those who did not allow health providers to trace their partners and 15 were those PLHIV who allowed health providers to trace their partners as shown in table 1.

Table 1. List of PLHIV that participated in the study

	Siem Reap ART clinic	**Kampong Cham ART clinic**	**Meanchey ART clinic**	**Chhouk Sar 1**	**Total**
Clients that did not allow health providers to trace their partners	4	1	6	1	12
Clients that allowed health providers to trace their partners	6	5	4	0	15
Total	10	6	10	1	27

28 health providers were selected to participate in the study. Among those, 7 from Siem Reap, 9 from Kampong Cham, and 12 from Phnom Penh. For further details. See table 2.

Table 2. Numbers of providers that participated in the evaluation

Key Informants	**Siem Reap**	**Kampong Cham**				**Phnom Penh**					**Total**
	ART clinics	SCC	ART clinics	PSOD	BSDA	Meanchey ART clinics	Chhouk Sar 1	MHC	CWPD	Korsang	
CMC	1		1			1					3
CMA	1		1			1					3
CMS	1		1								2
VCCT counsellor	1		1			1	1				4
ART counsellor	1		1			1	1				4
PASP	1		1			1					3
AUA			1								1
Case Manager		1		1	1			1	1	1	6
Program Manager							1				1
Clinic Manager							1				1
Total	6	1	7	1	1	5	4	1	1	1	28

7.3. Evaluation Team

The Principal Investigator led the evaluation and provided overall supervision of field teams, and all other aspects of the evaluation. The evaluation team was composed of: Dr Leng Kuoy (Principal Investigator), Ms Oeng Sothary (Research Coordinator), Ms Chuy Sokmeng (Costing Team Leader), Ms Meas Symon (Field Researcher- Costing), Ms Vuth Sokun (Field Researcher), Ms Dieb Sreyroth (Field Researcher), and Ms Chheng Keoratha (Field Researcher).

7.4. Data Collection

7.4.1. Data Collection Team and Field Work Management

The survey team consisted of 4 field researchers: one researcher interviewed PLHIV, one researcher reviewed forms, and 2 researchers interviewed key informants. Written notes and voice recorders were used to record interviews.

During data collection, the NCHADS technical team played important roles to not only coordinate with key persons in different locations to ensure that data collection had been implemented as plan, but also supervision of data collection to ensure validity and reliability. The HIEP Administration and Finance Team collected financial information in coordination with NCHADS, NGO finance manager and other officers. Determination of costs were carried out to allocate costs to certain key activities. Data collection activity was led by the Principal Investigator and coordinated by a research project officer in collaboration with the technical team from NCHADS.

7.4.2. Training for Data Collection

The survey team was trained on how to collect data by using evaluation instruments. Those include: 1) tools to review “Form A”, “Form A1”, “Form A2”, and “Form B”; 2) tool to interview PLHIV; 3) tool to review and collect financial data, see annex table 21; and 4) qualitative tools to interview key stakeholders including how to take note and using tape recorder and the use of informed consent forms. All necessary tools were field tested and revised to ensure the tools’ functionality and accuracy.

7.4.3. Instruments

- 4 review forms (for “Form A”, “Form A1”, “Form A2”, and “Form B”), see annex
- Screening questionnaire for PLHIV to define their eligibility to participate in the evaluation;
- Questionnaire guide for PLHIV to be used for interview PLHIV;
- Questionnaire guide for providers; and
- A matrix for typical cost data input (See annex, table 21)

7.5. Determination of Costs

7.5.1. Conceptualization and measurement of costs

The costs included in this study were those borne by the supporting and coordinating staff from Flagship and its implementing partners, including recurrent, capital, direct, indirect, fixed, and variable costs. Based on this approach, the quantity (Q) of resources consumed by an activity were established and then multiplying this by the unit cost (UC) of the resource. The cost of the activity is therefore the sum of (Q x UC) for all the resources used. Measurement of other main costs include labor, transportation, and other costs.

7.5.3. Reference Period of Costing Data Collection

Financial data were collected from October 2015 through May 2017 to measure cost per new partner case identified.

7.5.4. Sources of Costing Data

PNTT program data and costing data were collected for the evaluation. PNTT program data were provided by Flagship, NCHADS and other relevant organizations and costing data were collected from Flagship and its implementing partners.

7.5.6. Process of Defining and Collecting Costing Data

In order to estimate accurate costs, the following approach was taken:

- **Step 1:** Collection of costing data was started in the finance or accounting office of Flagship. The cost allocation team leader contacted finance/accounting officers to identify to what extent the accounting system allows the costs to be shown separately from other costs and break down the cost to more specific components.
- **Step 2:** From organizational charts, staff directly and indirectly involved were identified. If any particular staff has shared working time with other projects/donors or other activities but not defined in the financial system, the researcher asked him/her to estimate proportion of time spent on each project/donor. This helped deciding which costs are directly related, and which are shared with others.
- **Step 3:** Identify all activities that constitute the implementation of the intervention. These activities were the activities it needs to cost. The costs corresponding to key activities and detailed activities were identified.
- **Step 4:** Identify resource inputs. Each activity has inputs such as staff time, transport, logistic supplies, etc. – for the implementation of the services. This was done by identifying inputs that are directly related to the intervention.
- **Step 6:** Data about the unit cost and quantity or volume consumed were collected for each resource input. When secondary data are not available (program financial records, receipts, invoices, payrolls, etc.), primary data collection were conducted.

7.6. Data Management

All transcripts were proofread to ensure accuracy and then were entered into a computer for analyzing data. Field notes, debriefing notes, and transcripts from in-depth interviews were maintained in a secured computer. The analysis was triangulated data from in-depth interviews with staff and PLHIV.

Data obtained from debriefing sessions with field researchers helped with cross-checking research findings with the respondents and enhance the validity and reliability of the results.

7.7. Data Analysis

Data derived from the above methods were grouped according to themes, particularly in terms of the key questions that are being posed. Trends and patterns pointing to the suggested improvements to the program were culled.

An inductive approach was applied for the analysis of qualitative data. Based on this approach, the textual data from qualitative inquiries were condensed into a brief summary format, developed a framework of the underlying process of the program implementation and suggested improvements to the implementation of PNTT from PLHIV, implementers and stakeholders.

As appropriate, quantitative data obtained from the program were cited to strengthen the observations/ findings derived from the qualitative data and illustrate the effectiveness of the program. Furthermore, the program dataset were analyzed using the statistical analysis program, STATA 14.

Resources used during the implementation of PNTT were estimated by reviewing administrative and financial records. Standard cost allocation was used to determine cost per a new HIV positive partners of index clients.

Table 3. Framework for data analysis

	Evaluation Question	Analysis Approach
a.	What were the PNTT approaches/models implemented by Flagship at each site?	• Describe and compare the PNTT approaches/models between Siem Reap, Kampong Cham, Chhouk Sar I and Meanchey Pre-ART/ART Clinic
b.	How were the processes of PNTT models implemented by Flagship at each site including the roles and responsibilities of key person involved in implementing PNTT? What went well and what needs to be improved?	• Describe and compare: o process of implementation of PNTT at 4 locations o Challenges faced in PNTT implementation o Suggestions to improve the process of the implementation of PNTT o The roles of CMC, CMA, CMP, CMS, VCCT counsellor, Pre-ART/ART counsellor, PASP Manager, AUA, PPN+ coordinator and CSV within PNTT implementation o Challenges faced in relation to their roles in the implementation of PNTT o Suggestions in relation of roles and responsibilities of key stakeholders to improve the implementation of PNTT o Main activities of PNTT program that went well o Main activities of PNTT program that should be kept without modification o Main activities of PNTT program that should be kept with modification o Completeness of filling the "Form A", "Form A1", "Form A2", and "Form B" o Challenges and suggestions in filling forms
c.	How effective was the PNTT models implemented by Flagship, as measured by ratio of partners of newly diagnosed PLHIV tested for HIV divided by the number of partners of newly diagnosed PLHIV?	• Percentage of partners successfully notified and traced among spouses/partners with unknown HIV status, • Percentage of partners successfully notified and traced among serodiscordant couples (spouses/partners).
d.	What were the costs of implementing PNTT, as measured by cost per individual tested for HIV?	• Unit cost analysis (Cost per finding a new HIV positive of partners of index clients), comparing across 4 sites.
e.	What were the challenges faced in the implementation of Flagship PNTT project?	• Stakeholder and PLHIV challenges faced in relation to the process of the implementation of PNTT • Stakeholder challenges faced in relation to their roles in the implementation of PNTT • PLHIV challenges in using PNTT services
f.	What suggestions might improve the implementation of Flagship PNTT project?	• Stakeholder suggestions to improve the process of the implementation of PNTT, including the roles and responsibilities of key stakeholders to improve the implementation of PNTT • Stakeholder suggestions to improve the service delivery and output of the services • PLHIV suggestions to improve PNTT services, including PLHIV rationales for allowing or not allowing tracing of their partners

7.8. Quality Assurance

To ensure that collected data are reliable and valid, the following measures were taken:

- Data were triangulated to ensure reliability of the responses to the questions. This was undertaken through several inquiries with implementers, stakeholders, and experts at the national level;
- "Form A", "Form A1", "Form A2", and "Form B" were systematic randomly selected;
- All necessary tools were field tested to ensure the tools' functionality and accuracy;
- Qualified field researchers were recruited and trained on data collection using evaluation tools; and
- Data collection activities were managed by technical staff of HIV Innovate and Evaluate Project and supervised by NCHADS's technical staff.

7.9. Stakeholder Engagement

To ensure that the evaluation provided valid and useful evidence for formulating the PNTT SOP and services within the national program, a broad range of stakeholders participated-- from the development of the concept note, evaluation protocol, data collection, through qualitative data validation.

Consultative meetings were organized with stakeholders, including technical staff from Flagship, USAID, a technical team from NCHADS and the NCHADS Director, to provide comment on the PNTT evaluation concept note. Based on these inputs, the concept note was finalized.

The NCHADS technical team played important roles to not only coordinate with key persons in different locations to ensure that data collection had been implemented as planned, but also in providing supervision of data collection to ensure validity and reliability. NCHADS' technical team provided PNTT data for analyzing new HIV cases, partners of new HIV cases tested and HIV status to partners of new HIV cases.

On 15 August 2017, 48 participants from government staff, NGOs staff, NCHADS' technical team and Director, KHANA, and FHI 360, participated in a consultative meeting to provide input and to validate the qualitative findings of this evaluation.

8. Ethical Considerations

8.1. Confidentiality

All study procedures were conducted in private. All study-related information was kept in a confidential manner. The study team did not record names or other personal identifiers on the study forms, questionnaires and results. After data collection, questionnaires, forms, and written notes were stored securely at URC. Only authorized persons from the study had access to the locked file cabinet or to password-protected electronic study files.

8.2. Protocol compliance

This study was executed in compliance with the approved protocol, with no exceptions

9. Limitations

Purposive sampling was used to select PLHIV from each location and the total number of PLHIV participated in the evaluation was only 27 PLHIV. Therefore, the findings may not be fully representative of all locations where PNTT was provided.

Most clients screened had already disclosed their status to their partners, therefore finding PLHIV who did not disclose status was challenging and hence fewer number of PLHIV who did not disclose their status were interviewed (11 vs. 16 PLHIV who disclosed their status). Indeed, the team was only able to

interview one PLHIV at Chhouk Sar 1 clinic, though the field researchers spent three days at Chhouk sar 1 clinic to recruit PLHIV who met the inclusion criteria of PLHIV who disclosed status after 2014

Financial data in implementation from the government were not available. The costing team collected financial data from USAID HIV Flagship, CDC, and Flagship partners. As a result, the study confined the costing analysis to PNTT supporting activities only for 2016. In addition, PNTT program for Meanchey ART clinic and semester 1-2017 program data for Kampong Cham were not available.

The study could not find the actual start date of the PNTT program because there was no official launch date. There was also lack of data from NCHADS on the following: 1) total number of partners of new HIV positive cases (all sites), 2) total number of partners of new HIV positive cases traced for (Bassac OD and Chhouk Sar 1), 3) number of partners of new HIV cases tested for HIV (Bassac OD), and 4) HTC results of partners of new HIV cases (Bassac OD).

10. Results

10.1 PNTT Quantitative Findings

Table 4 shows the number of new HIV cases from 2014 to semester 1, 2017 in Kampong Cham, Meanchey ART clinic, Siem Reap and Chhouk Sar 1. The largest number (810) of new HIV cases were reported in Siem Reap, followed by Chhouk Sar 1 (424), 366 in Kampong Cham and 177 in Meanchey ART clinic. A total of 1,717 new cases were reported between 2014 and S1-2017 in the four locations. These data were from the NCHADS dataset.

Table 4. Number of new HIV Cases

Year	*Kampong Cham	**Bassac OD (Meanchey ART clinic)	Siem Reap	Chhouk Sar 1	Total
2014	144		149		293
2015	101		227	165	493
2016	121	70	288	172	651
S1-2017		47	146	87	280
Total	366	117	810	424	1,717

** Data were not available in Kampong Cham for S1-2017*

***Bassac OD (Meanchey ART clinic) did not start providing VCCT services until 2016.*

Table 5 shows the partner notification cascade for Kampong Cham, Siem Reap and Chhouk Sar 1 locations between 2014 and S1-2017. In Siem Reap, of the 810 new HIV cases, 241 (30%) of partners were traced and out of those traced and tested, all were HIV negative. The numbers of partners traced and the number tested were identical in all three locations. No partner testing data were available for Meanchey ART clinic. In Kampong Cham, of the 366 new HIV cases, 68 (19%) were traced and tested and 7.4% were found positive. At 34%, Chhouk Sar 1 had the highest traced and tested ratio (146 of 424) and 7.5% of these partners were found positive. No data were available for children.

Table 5. PNTT Cascade

Indicators	Kampong Cham	Siem Reap	Chhouk Sar 1
Number of new HIV cases	366	810	424
Number of partners of new HIV cases tested for HIV (ratio of partners tested/new HIV cases)	68 (18.6%)	241 (29.8%)	146 (34.4%)
Result of partners of new HIV cases			
Negative (	63 (92.6%)	241 (100%)	135 (92.5%)
Positive	5 (7.4%)		11 (7.5%)

Figure 3 illustrates the ratio of partners traced and tested for HIV to new HIV cases each year from 2014 to semester 1-2017 in Kampong Cham, Siem Reap and Chhouk Sar 1. No data were available for 2014 at Chhouk Sar 1, or for semester 1, 2017 in Kampong Cham. There was a great deal of variability across locations and across years. The highest proportion (64%) of partners were traced and tested in Siem Reap in 2016, compared to 27% in Kampong Cham and 35% at Chhouk Sar 1 the same year.

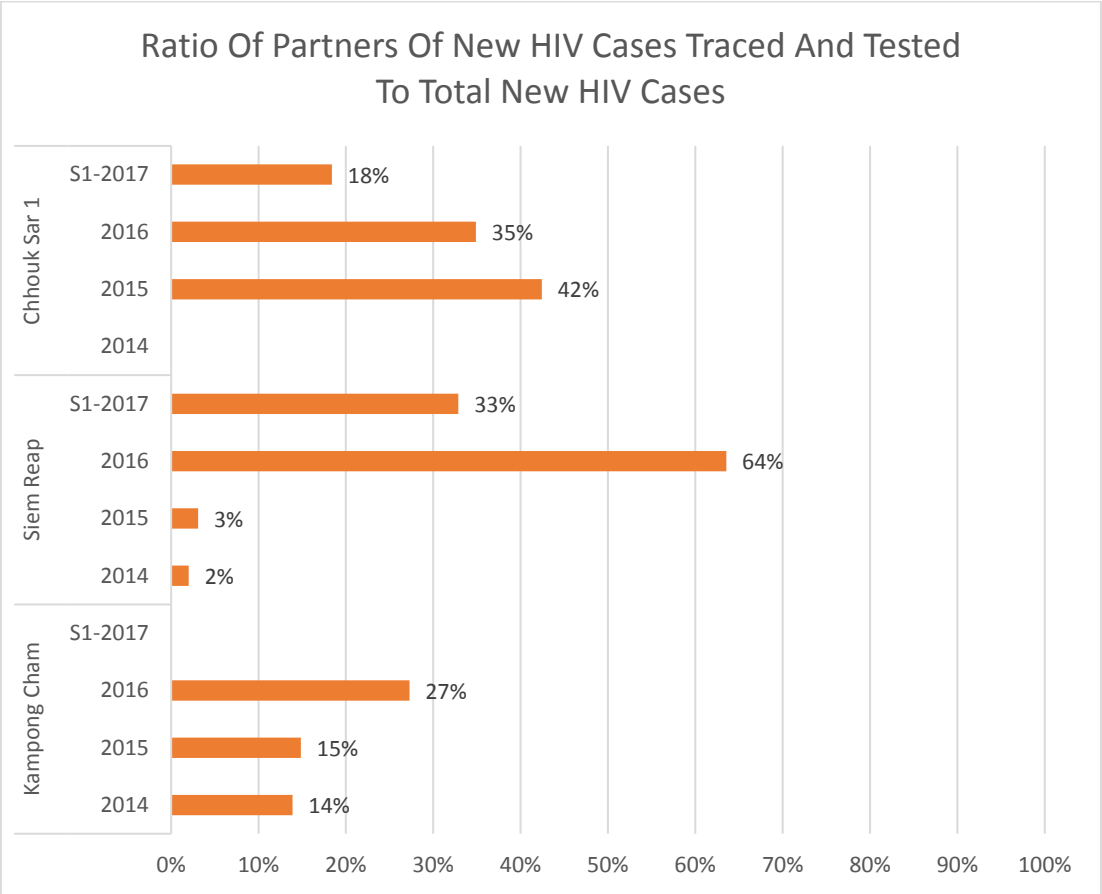


Figure 3. Proportion of Partners traced and tested for HIV

Table 6 shows the mean completion rates of Forms A, A1, A2 and B in Siem Reap, Kampong Cham, Meanchey Pre-ART/ART Clinics and Chhouk Sar 1 (see annex for Forms). The completion rates of the different forms ranged between 74% and 86%, and across sites the average completion rate ranged between 77% and 88%. Chhouk Sar 1 had the highest form completion rates.

Table 6. Mean Completion of Form A, A1, A2 and B

Forms	Status	Siem Reap	Kampong Cham	Meanchey pre-ART/ART clinics	Chhouk Sar 1	Total
Form A	Incomplete	74%	72%	69%	81%	74%
Form A1	Incomplete	81%	85%	91%	91%	86%
Form A2	Incomplete	72%	86%	91%	87%	82%
Form B	Incomplete	81%	67%	64%	93%	76%
Average	Incomplete	77%	77%	79%	88%	79%

10.2 Qualitative Findings From in-depth Interview of Key Informants

10.2.1. Responses from PLHIV

Characteristics of study participants

Of the total 27 PLHIV interviewed in Siem Reap, Kampong Cham, and Phnom Penh (Chhouk Sar 1 and Meanchey ART clinics), 17 were male and 10 were female. The mean age of PLHIV interviewed was 39. The majority of the participants (74%) were married, and 59% had a primary school education or less. Among the 27 PLHIV interviewed, the overall mean duration of time knowing their HIV status was 5 years and the mean duration of time on ART was 4.7 years. See annex table 12 for details.

Reasons for participation in PNTT among PLHIV

PLHIV participation in PNTT was voluntary, and PLHIV's decisions to either participate or not participate fell into the categories described below.

Key motivations for participation in PNTT

1. Avoiding economic problems from losing their partner's income, and to ensure care for children which would be threatened by loss of the head of the family to untreated HIV. For example, one female PLHIV from Meanchey stated "*If my husband got a serious illness caused by HIV, my family would have no income, consequently, my children would drop school. I dream to see that my children have good jobs*"
2. Fear of transmitting HIV to their family. As one PLHIV stated, *"I was counselled to bring my wife to have HIV testing. And provider also counselled me that If she is HIV positive, she will received ART on time and if she is HIV negative, I will use prevention measure to prevent my wife from getting HIV"*
3. Protect their partner's health (if HIV positive) through early diagnosis and early ART initiation. A male PLHIV from Siem Reap stated *"I am PLHIV, so, I would like to wife to have HIV test to know whether or not she got HIV. If she is HIV positive, she will get early treatment."* A similar statement was made by a PLHIV in Kampong Cham: *"I am afraid that my wife and children would get HIV infection from me. If they are HIV positive, we all will have ART together then, we all will live longer to take care my children."* Another respondent stated, *"If my husband got HIV, he can received ART. I want my husband healthy".*

4. Encouragement and counselling from staff was also commonly cited motivation to participate in PNTT. According to a PLHIV in Kampong Cham: *"health center staff counselled my wife to persuade me to do HIV test, as the result, I got reactive test too."*

Key motivations for not participating in PNTT

1. Fear of abandonment by partner. Illustrative of this sentiment was the statement of one female PLHIV from Siem Reap: "*My family, currently, is a happy family, I am afraid that my husband will abandon me as my previous husbands."* A similar sentiment was expressed by a male PLHIV in Meanchey who was *"afraid that my wife could not accept the information, then we would be divorced."* While not commonly referenced by PLHIV, the fear of partner committing suicide was clearly stated by one male PLHIV in Siem Reap.
2. Fear of domestic violence. A female PLHIV from Siem Reap stated *"I am afraid that my husband would have domestic violence."*
3. Fear of loss of family/self-honor and fear of discrimination. One female PLHIV stated that she was "*afraid that my neighbors will assume that I got HIV positive because I have many husbands, leading to discrimination."* Another female PLHIV feared that *"my husband and my neighbors would discriminate me".* A male PLHIV feared that "*my honor would be affected and my children would be discriminated by others*"

PLHIV suggestions to improve partner notification services

PLHIV participants provided several suggestions regarding PNTT services, as indicated below.

1. Health providers should continue to provide counselling and encourage index clients to bring their partners for HIV testing.
2. Discordant couple referrals to VCCT should be done twice per year.
3. Ensuring that transportation support to access VCCT and ART services is consistent.
4. Keeping confidentiality of PLHIV.
5. Identifying best approaches to persuade partners for HTC while avoiding domestic violence, divorce, and abuse.
6. Working to gain the trust of index clients should be given more focus when counselling clients for a successful PNTT.
7. PNTT education in the community and via mass media.

10.2.2. Qualitative findings from in-depth interview of providers

A total of 28 providers in Siem Reap, Kampong Cham and in Phnom Penh (Chhouk Sar 1 and Meanchey ART clinics) participated in the in-depth interviews, including representation from the following cadres: CMC, CMA, CMS, VCCT counsellor, ART counsellor, PASP, AUA, Case Manager, Programme Manager, and Clinic Manager. See annex table 13 for details.

Providers' responses on where index HIV testing services occurred

Providers in Siem Reap, Meanchey ARV clinic, Chhouk Sar Clinic 1 and Kampong Cham locations reported the locations where PNTT occurred and described the process of HIV testing and linkages. These activities in the community, at health centers, at VCCT, and at ART clinics are detailed in the annex table 11.

Perception of providers on the objective of PNTT

Most providers correctly reported that the main objective of the PNTT is to respond to the national strategy 90-90-90 and to reduce new HIV transmission. As eloquently stated by one PASP, the goal of PNTT was to "*detect HIV infected patients who don't know their HIV status to avoid spreading their HIV virus to other people. If we would detect all of them, we would reach 90.90.90-it is good so that all HIV patients get treatment to prevent new infection. If they don't know they have HIV and they are not informed, they are risk of spreading their HIV to other people [and] we cannot eradicate the new infection."*

Providers' perceptions on the main barriers for HIV partner notification

Providers' perceptions on the barriers to partner testing were similar to those raised by PLHIV. The key reasons for PLHIV not participating fell into the categories described below.

1. Fear of abandonment by partner. Illustrative of this sentiment was the statement of one VCCT counselor: *"To me, the reasons for not disclosing to their partner: they are afraid of losing their partners as they don't trust them anymore. If they are mistress, they will no longer be supported financially".* A case manager echoed concerns from PLHIV that one male client stated "*that it would be difficult for him to tell his wife as she could be depressed and commit suicide"*
2. Fear of domestic violence. A CMC stated *"sometimes their husbands hit their wife and have quarrel most of the time after they know."*
3. Fear of loss of family/self-honor and fear of discrimination.
4. Socioeconomic disparities. Two case managers disclosed that for PLHIV that have high class partners may also be reluctant, stating "*most patients who have high ranking officers or rich people as partners don't agree to bring their partners"* , and "*we say they are the girls/women belong to rich old men who provide financial support; so their partners are high ranking officers and rich, they cannot ask their partners to come for testing*"

Provider's perceptions on confidentiality in PNTT

All of the interviewed providers believed that confidentiality of PLHIV was highly protected because: 1) a VCCT code has been used instead of client's name, 2) providers will not tell others about HIV status of their clients, 3) nobody could access client's information except providers who are involved in providing VCCT, OI and ART services, and 4) counseling is done in private. Providers in Siem Reap, Meanchey, Chhouk Sar Clinic 1, and Kampong Cham stated that they always explained to PLHIV that their HIV status will be kept in confidence, and if confidentiality was broken, PLHIV have the right to file a lawsuit against the breaching individual. One VCCT counsellor went further, remarking on the importance of the trust relationship with clients, stating, "*If we don't keep their confidentiality, our patients will no longer trust us".*

Referral Approaches

Table 7 shows the PNTT referral approaches used by providers in Siem Reap, Kampong Cham, and Phnom Penh (Meanchey ART Clinic, and in Chhouk Sar 1). Overall, the most commonly reported type of PNTT referral modality was the client referral with disclosure (25), followed by conditional referral (17), client referral without disclosure (15), and provider referral (10).

Table 7. Referral approaches done by providers in three different locations

Referral Approaches	Siem Reap	Kampong Cham	Phnom Penh	Total
Provider Referral	5	2	3	10
Client Referral With Disclosure	6	7	12	25
Conditional Referral	6	5	6	17
Client Referral Without Disclosure	5	5	5	15

10.2.3 PNTT implementation activities and roles of providers

Description of the providers listed below and their detailed roles as outlined by NCHADS is described in annex, table 20.

PASP

The PASP in Siem Reap performed more activities (17 of 18 activities), when compared to Kampong Cham (5 of 21 activities), and Meanchey (7 of 21 activities). In Siem Reap, the PASP collected data from the CMA and analyzed the data, provided technical support to sites through supervision, coordinated and mobilize resources and managed the PNTT program in all ODs implementing the program. The PASP in the three sites set up the GoC and facilitated the quarterly GoC meetings. While the PASP in Siem Reap and Kampong Cham managed the HIV program data including PNTT, the PASP in MHD did not perform this activity. See annex table 14 for details.

CMC

The CMCs in Siem Reap and Meanchey performed more activities (15 of 21 activities) than the CMC in Kampong Cham (9 of 21 activities). The CMC in Siem Reap engaged in the planning of PNTT program activities, this activity was not performed by the CMCs at Kampong Cham and Meanchey. The CMCs in the three sites were involved in monitoring the progress of PNTT program, in strengthening the mechanisms of the PNTT implementation and in PNTT data management. The CMCs in Siem Reap and Meanchey engaged in facilitating the PNTT program and encouraged staff to implement the PNTT staff more effectively, while the CMC in Kampong Cham was not involved in these activities. See annex table 15 for details.

CMA

The CMAs performed a large variety of activities, most comprehensively in Kampong Cham (23 of 30 activities), and less so in Siem Reap (15 of 30 activities), and Meanchey (21 of 30 activities). The CMAs in the three locations were the contact persons when a reactive case was identified at the health centers or in the communities. The CMAs worked with the NGOs and health centers to ensure that reactive cases received confirmation tests.

The CMAs in Siem Reap and Kampong Cham were involved in activities such as counselling HIV pregnant women to bring their partner for VCCT and the CMA in Kampong Cham accompanied all infant born to HIV-positive mothers to CPR.

The CMAs located in the three locations performed PNTT data entry activities into the B-IACM dashboard and into the NCHADS database. They also participated in the weekly GoC meetings while only the CMA at Meanchey participated in the monthly and quarterly GoC meetings. See annex table 16 for details.

CMS
The CMSs also performed a large variety of activities, most comprehensively in Siem Reap (17 of 26 activities), and less so in Kampong Cham (13 of 26 activities), and much less so in Meanchey (7 of 26 activities). The CMS located in the three sites engaged in counselling index clients on psychological support, in tracing index clients 'partners for VCCT, if index client allowed and, in asking index clients who are on ART about their recent partners. The CMA in Siem Reap performed many more activities such as review of PLHIV who missed ART appointment, facilitate for a new-born to receive PCR test and facilitate transportation support for PLHIV who came to ARV clinics, compared to CMS located in Kampong Cham and Meanchey. See annex table 17 for details.

VCCT counsellors
The VCCT counsellors activities were most comprehensively performed in Siem Reap and Meanchey (10 of 16 activities) compared to Kampong Cham (8 of 16 activities). The VCCT counsellors located in the three sites were involved in providing confirmatory test to reactive clients, in recording needed information into VCCT register and in entering client information into counselling register book. The counsellors also provided post-test counselling on how to prevent HIV transmission to partners and others and counselled index clients to bring their partners for HIV testing. See annex table 18 for details.

ART counsellors
The ART counsellors activities were most comprehensively performed in Kampong Cham and Meanchey (each 6 of 15 activities) compared to Siem Reap (4 of 16 activities). The ART counsellors located in the three sites were involved in providing counselling to new PLHIV case on how to take ARV drug. The ART counsellors in Siem Reap and Kampong Cham accompany clients to CMS to register for ART. The ART counsellors in Kampong Cham and Meanchey were involved in examining missed ART appointment and in tracing PLHIV partners, the ART counsellors in Siem Reap did not perform these activities. See annex table 19 for details.

11. Issues, Best Practices and Lessons Learnt

Providers mentioned a variety of approaches they believed would strengthen the PNTT services and lessons learnt from the PNTT implementation, as described below.

1. **Counselling content**
   - Focusing on how partner notification benefits the wellbeing of index clients' partners and their family was an effective approach to get partners tested for HIV.
   - Ensuring PLHIV's trust in the health facility services, especially assuring clients that their status is kept confidential was a fruitful approach to engage index clients in PNTT.
   - Educating PLHIV on HIV transmission and the benefits of early HIV testing and ART was reported to ease the partner notification process.
2. **Counselors' skill**
   - The quality of PNTT counselling requires good natured counsellors and effective collaboration with stakeholders, yet counsellors often have limited PNTT counselling skills and training.
   - Training is needed in PNTT counselling and in persuasive methods
3. **Data**
   - Presentation of VCCT and ART service data in graph forms (dashboard) was helpful in showing the contribution of VCCT and ART counsellors in PNTT and this encouraged the counsellors to perform better.
   - Other than the GoC members, most health care providers and counsellors did not understand the HIV cascade clearly.
   - It is challenging to track partners of those who are on ART since the PNTT data and the ART database are not linked.
   - It was difficult to get PNTT/PMTCT and Pre-ART data from Kantha Bopha hospital in Siem Reap

- The Excel tool to collect PNTT data does not yet cover the detail data needed to properly monitor implementation
- There was a perceived lack of human resources to manage PNTT data

4. **Human Resources and training**
   - All relevant implementers do not really understand the approaches to implement PNTT
   - Request for PNTT guidance documents: SOPs or curriculum from NCHADS on how to successfully work with PLHIV who do not disclose their HIV status to their partners.
   - GoC at OD level not running well because CMC has many responsibilities and ART team members did not participate regularly
   - Provide incentives to staff involved in PNTT implementation
   - Increase the number of counsellors, since there are few currently
   - The national HIV program should share best experiences and knowledge on successful PNTT strategies and approaches with counsellors to ensure quality PNTT counselling services.
5. **Other issues**
   - The referral of reactive clients from HC to VCCT for HIV confirmation test does not work very well because many clients don't have money to pay for transportation and don't know where the VCCT is.
   - Provide transportation support to index clients and partners to come for HTC
   - The strong support from, and collaboration with, NGOs working on CBPCS and key population (KP) in the community was essential for the PNTT program
   - It is challenging to trace partners of hidden and migrant PLHIV

10.3. Cost Allocation

As described in table 8 and figure 4, the additional cost of PNTT support for the year 2016 (the only year for which complete financial and program data were available) was highest for Siem Reap ($2,974), and lower for Meanchey ($1,924), Chhouk Sar 1 ($1,647), and for Kampong Cham ($1,137). [1]

Table 8. Total cost of PNTT under Flagship, 2016

Indicators	Siem Reap	Kampong Cham	Meanchey	Chhouk Sar 1
Technical Assistance from Flagship (US$)	$1,700	$624	$1,090	$971
Administrative Support from Flagship (US$)	$1,124	$418	$726	$648
Other (US$)	$150	$95	$108	$28
Total	$2,974	$1,137	$1,924	$1,647

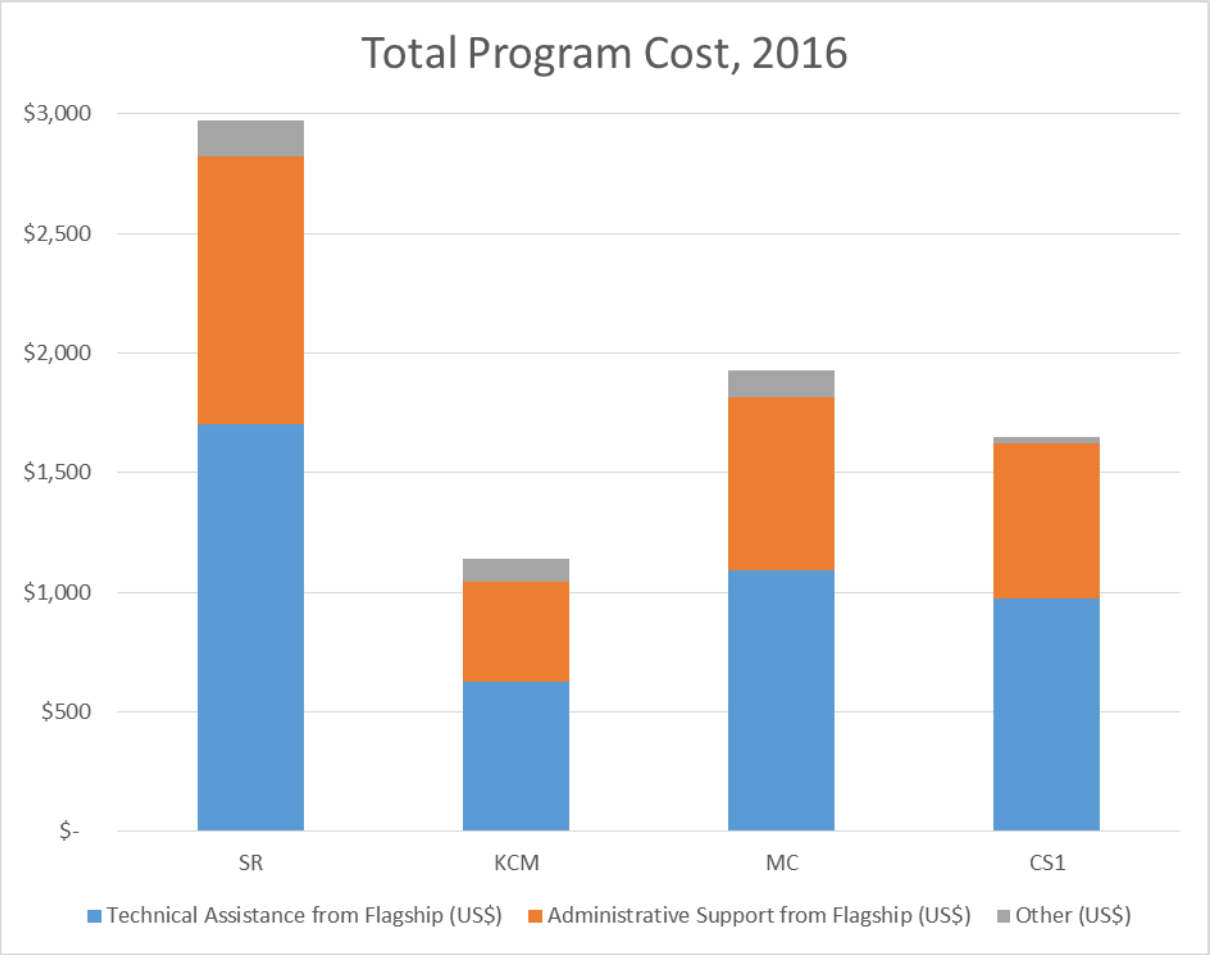


Figure 4. Cost of PNTT for each organization supported by USAID HIV Flagship

[1] The figures presented here are the additional costs borne by NGOs to support implementation, as financial data from the government for PNTT implementation were not available.

Figure 5 shows that the proportional allocated costs were similar across sites in 2016. The cost of TA from Flagship ranged from 55-59%, and the cost of administrative support ranged from 37-39% of total costs.

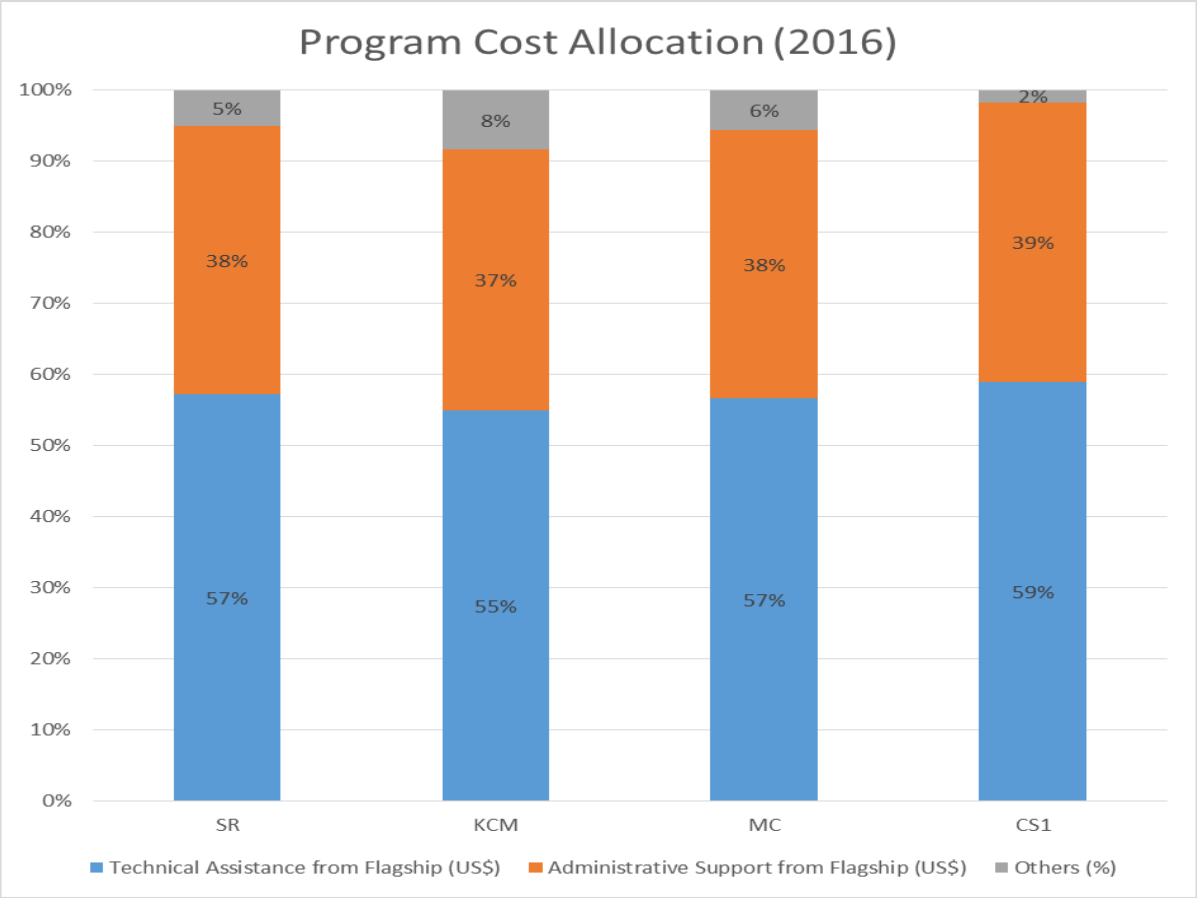


Figure 5. Cost allocation of PNTT service of each organization supported by USAID HIV Flagship

Figure 6 and table 9 show that the additional cost of PNTT per new HIV case was nearly identical across sites, ranging from $9.40 to $10.33 per new HIV case in each location. The additional cost of PNTT per partner tested was highest in Kampong Cham ($34) and lowest in Siem Reap ($16). Because of the low numbers of new HIV cases identified among partners tested, the cost per new HIV partner case identified was high, $1,137 in Kampong Cham and $824 in Chhouk Sar 1. In Siem Reap, all partners of index client who were tested for HIV were negative, so the unit cost could not be calculated. If the cost of TA from Flagship are excluded, the additional cost of PNTT per partner tested drops to $6.96, $15.54, and $11.27 in Siem Reap, Kampong Cham, and Chhouk Sar 1, respectively.

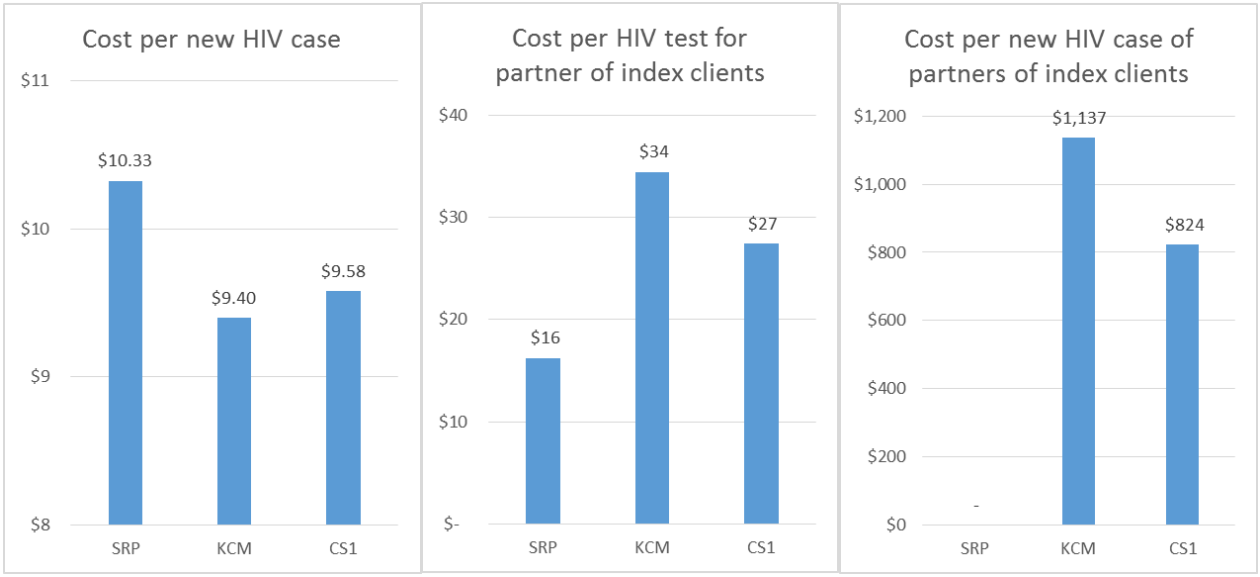


Figure 6. Unit costs

Table 9. Unit costs of PNTT under Flagship, 2016

Indicators	Siem Reap	Kampong Cham	Chhouk Sar 1
Number of new HIV cases	288	121	172
Number of partners of Index clients tested for HIV	183	33	60
Partners tested (%)	64%	27%	35%
HIV cases of partners of Index clients	-	1	2
HIV+ yield (%)	N/A	3.03%	3.33%
Total cost in 2016	$2,974	$1,137	$1,647
Cost of HIV test per partner of index clients	$16.25	$34.46	$27.45
Cost per new partner HIV case	N/A	$1,137	$824

12. Discussion

This evaluation analyzed data from the national database at four sites across Cambodia (in Kampong Cham, Siem Reap and Phnom Penh (Chhuok Sar Clinic 1 and Meanchey ART Clinic) that were supported by the USAID HIV Flagship Project, and collected qualitative data from PLHIV and PNTT implementation staff. The evaluation focused on examining PNTT program performance as well as comparative cost and cost-effectiveness. The economic analysis was limited to the additional costs borne by Flagship in supporting PNTT since government financial data for PNTT were not available, and there were limitations in the available PNTT data for Meanchey ART clinic and for semester 1, 2017 in Kampong Cham.

The wide variation in the number of the new index HIV cases across sites (range 117 - 810 new cases) reflected the relative HIV burdens of the respective geographic areas, but there was also variation across sites with regard to program performance, as reflected in the rates of partners of new HIV cases traced and tested. Overall, the average partner testing rate across the sites was 28%, and was as low as 19% in Kampong Cham and as high as 34% at Chhouk Sar Clinic 1 (the rate was 30% in Siem Reap).

There was also notable variation across the years on partner testing rates. For example, in Siem Reap in 2014, in the early implementation of PNTT, only 2% of new cases' partners were traced and tested, but across sites this figure was as high as 64% in 2016. Using 2016 as a point of reference, the rate of partners traced and tested was 47%, which is similar to what has been reported in other developing countries (49%), and also similar to the 55% rate of partners tested that was reported by NCHADS in 2016 (NCHADS 2016a). The rate of partners traced and tested has been found to be much higher in developed countries (79%) (WHO, 2004).

The HIV positive case yield rate among the partners who were tested in Siem Reap was 0%, which may reflect problems in the data set, but given the low HIV prevalence nationally, it is possible that this was the result of variation across geographic areas. The HIV positive case yield rate among the partners who were tested in Kampong Cham (7.4%) and Chhouk Sar 1 (7.5%), was tenfold higher than the national average (0.7%), consistent with the HIV positive rate among seen partners tested in locations in Africa (Brown, 2011; Henley, 2013).

The "self-referral with disclosure" approach was reported to be the most common PNTT approach by staff in the study locations. Studies shows inconsistent results in the effective referral approach methods. Assisted referral approaches have shown to yield more successful partner tracing and testing when compared to the self-referred or passive referral method (WHO, 2016; Brown, 2011; Rutstien, 2013). However, other studies show insignificant differences in the average numbers of partners traced and tested regardless of the three partner-notification method used (provider, patient, and contract referral) (Hogben, 2007). In this evaluation of PNTT in Cambodia, even though the "self-referral with disclosure" partner notification method was the commonest modality, all four approaches were implemented in various degrees in the study locations thus and attribution of differential outcomes by referral modality was not possible.

At $2,974, the total additional PNTT program cost for the year 2016 was highest in Siem Reap, which was also the location with the largest number of new HIV cases (810) with a 64% partner tracing rate. The cost per HIV test for partners of index clients was lowest for Siem Reap at $16, and the cost was highest in Kampong Cham, at $34, with a 27% partner tracing rate. The higher performance in Siem Reap compared to other locations may be attributable to the greater level of effort exerted by providers. For example, among all PASPs, CMCs, CMSs and VCCT counselors surveyed, those at Siem Reap performed the most comprehensive set of activities.

Patient forms captured index patient and partner information, providing data for monitoring of PNTT services and other HIV program activities. The overall form completion rate was high (79%), demonstrating this as a relatively strong component of the PNTT process. However, because these

patient data are kept in hard copy, it was infeasible to use for analysis routinely, posing a challenge to effectively managing PNTT services.

Overall, the implementation of PNTT across sites was similar and good, with 1) PNTT services regularly provided in the community, at health centers, at VCCT, and ART clinics, 2) a consistently good level of completion of the necessary forms (average completion rates 79%), and 3) client confidentiality being well-protected. The roles and responsibilities varied with regard to the tasks performed by the different staff cadres, but most staff reported largely playing the roles expected. ART counsellors, however, reported performing a minority of the expected tasks, while all the other cadres performed a majority of expected tasks. Generally, the cadres in Siem Reap reported doing the most comprehensive set of tasks, and those in Meanchey and Kampong Cham performed the least comprehensive set of tasks which, as noted above, may be reflected in the higher PNTT performance seen in Siem Reap. Furthermore, in Siem Reap, community and facility-based NGOs played key roles in referring reactive cases and serodiscordant couples to VCCT for confirmatory test by accompanying clients or by providing transportation support.

Key issues emerging from the qualitative interviews with providers and PLHIV include that: 1) counselling skills are important; 2) additional resources (human, incentives for staff, and client transportation) may add value, 3) additional training (including clarification of roles and responsibilities) and sharing best practices on PNTT would be of benefit, 3) stigma remains an important barrier for disclosure of HIV status and PNTT, and 4) that PNTT data management could be improved.

Conclusion

Ultimately, PNTT has been shown to be effective in Siem Reap, Kampong Cham, and Chhouk Sar 1. For the most recent full year of data, Siem Reap appeared to perform best (64% partner testing rate). Siem Reap was also the most cost-effective site, most likely because of the more intensive effort put forth by implementing staff. There remain challenges with data management, stigma, and an expressed need for additional training and guidelines in PNTT.

13. References

Abraham. (2002). Confidentiality, partner notification and HIV infection. *Indian Journal of Medical Ethics, 10*(1).

Brown. (2011). HIV partner notification is effective and feasible in sub-Saharan Africa: Opportunities for HIV treatment and prevention. *J Acquir Immune Defic Syndr. , 56*(5), 437–442.

Fentene. (2013). Acceptance of referral for partners by clients testing positive for human immunodeficiency virus. *HIV AIDS (Auckl), 5*, 19–28.

Henley. (2013). Scale-up and case-finding effectiveness of an HIV partner services program in Cameroon: an innovative HIV prevention intervention for developing countries. *Sex Transm Dis. ;, 40*(12).

Hogben. (2007). The Effectiveness of HIV Partner Counseling and Referral Services in Increasing Identification of HIV-Positive Individuals: A Systematic Review. *American Journal of Preventive Medicine-Supplement, , 33*(2), S89-S100

NAA. (2015). The National AIDS Authority: Cambodia Country Progress Report Monitoring Progress Towards the 2011 UN Political Declaration on HIV and AIDS Reporting Period: January - December 2014 (Vol. 2017).

NCHADS (Producer). (2015). Standard Operating Procedures for Operatinalizing Boosted Integrated Active Case Mangement- Partner Notification, Tracing and HIV Testing (B-IACM/PNTT) Approch at OD Level in Camboida- Final Draft December 2015.

NCHADS. (2016a). Consolidated Operational Framework on Community Action Approch to Implement B-IACM Towards Achiving 90-90-90 in Cambodia. September 2016. National Center fro HIV/AIDS, Dermatorlogy and STD (NCHADS).

NCHADS. (2016b). Strategic Plan for HIV/AIDS & STD Prevention and Control in the Health Sector 2016-2020 (HSSP-HIV). FINAL DRAFT. October 2016

National Centre for HIV/AIDS, Dermatology & STD. (NCHADS).

NCHADS. (2017). Standard Operational Procedures on Boosted-Integrated Active Case Management (B-IACM)-March 2017.

Rutstien. (2013). Cost-effectiveness of provider-based HIV partner notification in urban Malawi. *Health Policy and Planning 29*(10), 115–126.

Song. (2012). Partner Referral by HIV-Infected Persons to Partner Counseling and Referral Services (PCRS) - Results from a Demonstration Project. *The Open AIDS Journl. , 6*, 8-15.

UNAIDS. (2014). 90-90-90 An ambitious treatment target to help end the AIDS epidemic.

UNAIDS. (2016). PREVENTION GAP REPORT.

USAID. (2017). KEY POPULATIONS: TARGETED APPROACHES TOWARD AN AIDS-FREE GENERATION.

Wamuti. (2015). Assisted partner notification services to augment HIV testing and linkage to care in Kenya: study protocol for a cluster randomized trial. *Implimentaion Science, 10*(23).

WHO. (2004). HIV Status Disclosure to Sexual Partners: Rates, Barriers and Outcomes for Women. http://apps.who.int/iris/bitstream/10665/42717/2/9241590734_summary.pdf

WHO. (2016). SUPPLEMENT GUIDELINES ON DECEMBER 2016 HIV TESTING SERVICES HIV SELF-TESTING AND PARTNER NOTIFICATION SUPPLEMENT TO CONSOLIDATED GUIDELINES ON HIV TESTING SERVICES. Retrieved 11July, 2017, from http://apps.who.int/iris/bitstream/10665/251655/1/9789241549868-eng.pdf?ua=1

14. Annex

Table 10. Partner Tracing by Location

Location	PNTT activity
Community	Providers reported that PNTT was implemented in the community by NGOs implementing the community based prevention care and support (CBPCS) and NGOs working with key population (KP) implementing finger prick testing. As stated by one CMC "*PNTT can be done in community and health center when seeing reactive, our HTC officer always convince them to bring their partners to be tested for HIV."* An NGO staff Case Manager stated "*If clients got reactive determine test, our staff will counsel them to bring their partners for HIV testing".* NGOs also reported that to encourage partners of hidden PLHIV, serodiscordant couples and partners of persons who are at risk, Community Support Officers (CSO) conduct community education surrounding the target populations' houses and invite targeted partners to join the education session. Further, NGO staff reportedly referred discordant couples to VCCT every six months and contacted partners of index clients to access VCCT, if index clients allowed. The providers mentioned that PNTT was also provided at hot spots such as parks, hair dressing salons, swimming pools, spas and family clinics.
Health Centers	Providers in Siem Reap, Meanchey, Chhouk Sar Clinic 1 and Kampong Cham confirmed that if there were reactive cases at health centers, health center staff provided counselling and encouraged them to persuade and bring their partner for HIV testing, as exemplified by one CMC, who stated "*PNTT can be done in ….. Health Centre when seeing reactive, our HTC officer always convince them to bring their partners to be tested for HIV."*
VCCT	The interviewed VCCT counsellors in Siem Reap, Meanchey, Chhouk Sar Clinic 1 and Kampong Cham reported that all HIV positive cases have been counselled and were encouraged to bring their partners for HIV testing, as exemplified by one VCCT counsellor, who stated "*We provide counselling to new positive HIV cases on HIV transmission, the importance of doing VCCT and receiving ART, then, we encourage them to bring their partners for VCCT."*
ART Clinic	ART counsellors in Siem Reap, Meanchey, Chhouk Sar Clinic 1, and Kampong Cham reported providing counselling services and encouraging clients to bring their partners to VCCT when clients come to received Pre-ART and ART services. As stated by one ART counsellor *"[we] Ask new and old clients receiving ART, how many children have you got and have you got sexual partners. Then encourage them to bring their partners for HIV testing."*

Table 11. Characteristics of PLHIV participated in the evaluation

	Siem Reap		Kampong Cham		Phnom Penh		Total	
	n	%	n	%	n	%	n	%
Sex								
Female	7	70%	1	17%	2	18%	10	37%
Male	3	30%	5	83%	9	82%	17	63%
Total	10	100%	6	100%	11	100%	27	100%
Marital status								
Never married	0	0%	1	17%	0	0%	1	4%
Married	8	80%	4	67%	8	73%	20	74%
Cohabiting (Not married but living with partner)	2	20%	1	16%	3	27%	6	22%
Total	10	100%	6	100%	11	100%	27	100%
Level of education								
Never attended school	6	60%	0	0%	0	0%	6	22%
Primary school	3	30%	4	67%	3	27%	10	37%
Junior high school	1	10%	1	17%	4	36%	6	22%
High school	0	.0%	1	17%	2	18%	3	11%
University	0	.0%	0	0%	2	18%	2	7%
Total	10	100%	6	100%	11	100%	27	100%
Mean age	40		34		40		39	
Mean duration of time knowing HIV status (in years)	8.80		1.00		3.90		5.07	
Mean Duration of time on ART (in years)	8.30		0.83		3.45		4.67	

Table 12. Number of Providers participated in the evaluation

Provinces	Sites	CMC	CMA	CMS	VCCT counsellor	ART counsellor	PASP	AUA	Case Manager	Program Manager	Clinic Manager	Total
Siem Reap	Siem Reap ART clinics	1	1	1	1	1	1					6
	SCC								1			1
Kampong Cham	KMC ART clinics	1	1	1	1	1	1	1				9
	PSOD								1			
	BSDA								1			
Phnom Penh	Meanchey ART clinics	1	1		1	1	1					5
	Chhouk Sar 1				1	1				1	1	4
	MHC								1			1
	CWPD								1			1
	Korsang								1			1
		3	3	2	4	4	3	1	6	1	1	28

Table 13. Activities done by PASP in implementing PNTT

Activities	Siem Reap	Kampong Cham	MHD
Set up group of champion (GOC)	✓	✓	
Facilitate quarterly group of champion meeting (GOC)	✓	✓	✓
Participate in RMAA weekly meeting	✓		✓
Participate in monthly GOC meeting	✓		✓
Collect PNTT data from Case Management Assistant (CMA)	✓		
Analyze data collected by Case Management Assistant (CMA)	✓		
Manage HIV program data including PNTT	✓	✓	
Manage PNTT program in all OD implementing PNTT	✓		✓
Coordinate the implementation of PNTT program in each site	✓		✓
Manage reactive cased with NGOs and HC in operational district	✓		
Monitor progress of implementation of PNTT program	✓		✓
Provide technical support to sites through supervision	✓		
Monitor PLHIV who missed appointment and virus load and review new HIV case by case whether or not they received ART, if not why? Then take action to ensure that all new HIV cases received	✓		
Provide orientation on new guidance to each site, if needed	✓		
Mobilize resources	✓		
Ad-hoc Meeting with other NGO	✓		✓
Coordinating and facilitating with owners of entertainment establishment to allow NGO partner to work with KP in the establishment		✓	
Prepare quarterly report for NCHADS	✓	✓	

Table 14. Activities done by CMC in implementing PNTT

Activities	Siem Reap ART clinic	Kampong Cham ART clinic	Meanchey ART clinic
Assist PASP in Setting up GOC team	✓		
Facilitate PNTT program	✓		✓
Guide GOC core group and CMP on the implementation of B-IACM and PNTT based on the NCHADS 's SOP		✓	✓
Planning PNTT program activities	✓		
Monitor progress of PNTT program	✓	✓	✓
Encouraging staff to implement PNTT program more effectively	✓		✓
Assist PASP in monitoring progress of implementation of PNTT program	✓	✓	
Strengthening the mechanism of implementation of PNTT program	✓	✓	✓
Encourage Health Center to trace their partners when finding reactive cases			✓
Encourage VCCT counselor to trace partners (their children and their sexual partners) of index clients			✓
Encourage ART counselor to trace partners (their children and their sexual partners) of index clients			✓
Encourage involved person to refer and follow up reactive to ensure that they received confirmatory cases			✓
Managing PNTT data	✓	✓	✓
Add more variable to database provided by NCHADS. This would allow implementer to manage B-IACM and PNTT effectively	✓		
Collect and send B-IACM and PNTT data to NCHADS and Municipality Health Department			✓
Analyze PNTT program data	✓		
Present output of PNTT program's implementation to staff	✓		
Collaborate with NGO partners to implement PNTT program	✓	✓	✓
Participate in weekly GOC meeting	✓	✓	✓
Participate in monthly GOC meeting	✓	✓	✓
Address the challenges to the implementation of PNTT program	✓	✓	✓

Table 15. Activities done by CMA in implementing PNTT

Activities	Siem Reap ART clinic	Kampong Cham ART clinic	Meanchey ART clinic
Informed by Health Center and NGOs staff about new reactive cases	✓	✓	✓
Make appointment with VCCT official to ensure that he is at VCCT clinic			✓
Waiting reactive clients at VCCT to ensure that they received confirmed test	✓	✓	✓
Follow up to ensure reactive cased received confirmatory test	✓	✓	✓
Provide counselling to client on how to prevent from HIV transmission and encourage index clients to persuade their partners for HIV testing		✓	✓
Provided counselling to pregnant women to get early HIV test leading to receive ART service		✓	✓
Talk with index clients about their partners			✓
Always trace index partners although they report that they are widower or widow	✓	✓	✓
Encourage index clients to persuade their partners to VCCT			✓
Counsel HIV pregnant women to bring their partner for VCCT	✓	✓	✓
Accompany clients to meet CMS to receive pre-ART/ART counselling on the importance of receiving ART and CBPCS project	✓	✓	✓
Follow up to ensure PLHIV adhere to ART	✓	✓	
Follow up clients, especially HIV positive pregnant women to ensure that they adhere to ART services	✓	✓	
Follow up and contact PLHIV who missed ART appointment	✓	✓	
Follow up HIV positive pregnant women on: 1) where they received delivery services; 2) Whether or not their babies have been registered at Komar Angkor; 3) Whether or not their Husbands know their HIV status.	✓	✓	
Trace partners and children of index clients by collaborate with 21 health centers		✓	
Provide orientation training to all health center on reactive cases that enable CMA or CMC to ensure that they received confirmation test		✓	
Monitor to ensure that all infant born to HIV-positive mothers get nevirapine medication		✓	
Accompany all infant born to HIV-positive mothers to CPR testing and recording the result of CPR test		✓	
Work with NGO partners ensure that new reactive clients received confirmation testing	✓	✓	✓
Record new HIV cases into register	✓	✓	✓
Facilitate to ensure that Health Centres have enough determine test			✓
Facilitate to ensure that maternity ward has enough determine test, ARV drug for HIV positive mothers and exposed infants			✓
Collect PMTCT, HTC, VCCT, TB, and OI/ART data			✓
Enter PNTT into excel form and database	✓	✓	✓
Enter PNTT data into excel form provided by NCHADS	✓	✓	✓
Send quarterly report to USAID Flagship			✓
Participated in weekly meeting every Friday with PASP, CMC, VCCT and ART counsellor, ...	✓	✓	✓
Participated in GOC monthly meeting			✓
Participated in quarterly meeting			✓
Manage office supply			✓

Table 16. Activities done by CMS in implementing PNTT

Activities	Siem Reap ART clinic	Kampong Cham ART clinic	Meanchey ART clinic
Counsel index clients on: • Consistently condom use with their partners. • Psychological support • ART adherence, especially for serodiscordant couples • HIV transmission and prevention	✓	✓	✓
Trace index clients 'partners for VCCT, if index client allowed	✓	✓	✓
Provide index clients the tips to talk to their partners	✓		✓
Always ask index clients about their recent partners, while they are receiving ART services	✓	✓	✓
Provide Pre-ART code, later on ART code of PLHIV to CMA	✓		
Facilitate new HIV cases to receive OI treatment	✓	✓	
Facilitate old and new PLHIV to receive ART.	✓	✓	
Review and record PLHIV who missed ART appointment every evening, then inform those to NGOs for follow up	✓		
Facilitate hospitalized PLHIV holding ID poor card to get free of charge service	✓		
Facilitate infant born to an HIV-positive mother to CPR test at Komar Angkor Hospital	✓		
Facilitate greatest need PLHIV holding ID poor card to get transportation support from HEF, while they come for ART service	✓		
Participate in the GOG weekly meeting	✓	✓	
Contact and inform NGO partners about new HIV cases who just registered into their CBPCS team	✓		
Prepare related documents for OI clients	✓		
Record PLHIV's contact number and address for communicating with them as needed.	✓		
Record the name of CSV who accompanied clients to access health services	✓		
Facilitate PLHIV holding ID poor card to access to health care service with free of charge	✓		
Work with NGO partners, HC, and other wards within hospital to catch up new reactive/new HIV cases		✓	✓
Follow up pregnant women and exposed infant		✓	✓
Follow up serodiscordant couple		✓	
Prepare document for transferring PLHIV to receive ART in other ART clinic and follow up to ensure that they received ART at that clinic		✓	
Fill form "A2"		✓	
Enter new HIV cases into excel form	✓	✓	✓
Facilitate the process of transferring PLHIV to receive ART at other ART clinic		✓	

Table 17. Activities done by VCCT counsellors in implementing PNTT

Activities	**Siem Reap ART clinic**	**Kampong Cham ART clinic**	**Meanchey ART clinic**
Provide finger prick testing to clients		✓	
Provide confirmatory test to reactive clients	✓	✓	✓
Fill result of HIV testing into HIV result card	✓	✓	✓
Record HIV test result into HIV test card, put in into envelop, then give it to client and bring them ART counsellor	✓	✓	✓
Record needed information into VCCT register	✓	✓	✓
Register client information into counselling register book	✓	✓	✓
Record information into for A, A1, A2 and form B	✓		
Provide post counselling to new HIV cases on: 1) HIV transmission, 2) how to prevent HIV transmission to their partners and others 3) prevention mother to child transmission, 4) advantages of HIV testing for their partners 5) the benefit of receiving early ART	✓	✓	✓
Assist index clients to screen for higher risk partners	✓		✓
Counsel index clients to bring their partners for HIV testing.	✓	✓	✓
Prepare and send monthly report to laboratory official	✓		✓
Prepare quarterly report on VCCT			✓

Table 18. Activities done by ART counsellors in implementing PNTT

Activities	Siem Reap ART clinic	Kampong Cham ART clinic	Meanchey ART clinic
Provide counselling to new PLHIV case on: 1) Consequences of undisclosed their HIV status to their partners; 2) Advantages of receiving ART services; 3) How to take ARV drug 4) ARV side effect 5) Encourage them to bring their partners for VCCT; 6) Ask them about their health status.	✓	✓	✓
Accompany clients to CMS for registration	✓	✓	
Filling form A, A1 and A2	✓		✓
Record OI code into PLHIV booklet	✓		
Record PLHIV information into master book provided by NCHADS			✓
Take vital sign from PLHIV including temperature, blood pressure, …)		✓	
Count ARV drug		✓	
Examine whether or not they missed ART appointment		✓	✓
Trace PLHIV partners		✓	✓
Enter PNTT data into excel form and hard copy			✓

Table 19. Definition, Roles and Responsibilities of Providers

Designation	Roles and Responsibilities
Provincial AIDS Secretariat Program (PASP) Manager	Responsible for overall functioning and oversight of B-IACM. In the Urban OD model, convenes the Group of Champions, directly supervises the CMC, and takes responsibility for B-IACM at provincial level. In the Rural OD model supervises the CMC and Group of Champions in each OD in the province. In Phnom Penh the PASP Manager coordinates the B-IACM work in the Phnom Penh ODs and is responsible for the RMAA
Group of Champions (GoC),	All activities in a geographic area are supervised by the GoC, which is a core group of immediately responsible people who manage and oversee B-IACM directly
Case Management Coordinator (CMC)	Primary responsibility is to manage the B-IACM, and ensure that all the key players are working together. The CMC is a senior member of the OD/PHD team.
Case Management Assistant (CMA)	Primarily responsible for collecting and entering the B-IACM data in the system, and preparing the charts, graphs and reports. Under the streamlined system an existing government staff in the OD will be designated to this function
Case Management Provider (CMP)	Play the key roles of identifying and referring cases within the public health service system. CMP are usually government staff working at different levels in the health care system; but they may also be NGO staff working in NGO health facilities and programmes
Case Management Supporter (CMS)	Responsible for following up new cases where there is delay in new cases reaching different points in the system (e.g. accepting testing, going for confirmatory testing at VCCT, referral to Pre-ART/ART clinic, adherence, home-based care support, etc.). CMS are government or NGO/CBO staff working within B-COPCT, B-COC, B-LR, CBPCS projects
NGO/CBO Outreach Worker, PLHIV Peer Facilitator, and Community Service Volunteers (CVS)	Function as CMP when they identify and refer new cases and as CMS, when they follow-up new cases (both in B-COPCT and in B-COC/LR and CBPCS).
NGO staff	Supervise and coordinate the work of the CMS with other CMP, and work with the CMC and CMA to ensure that follow-up for 'loss' (lost cases) takes place. They are key members of the Group of Champions.

Form A

(Adult Initial Visit Form)

Clinic ID number: ☐☐☐☐☐ | Date first visit: ___ / ___ / ___

○ Patients lost then return | Previous Clinic ID number: ☐☐☐☐☐

(Name) | (Date of birth) / / | (Age) | ○ (Female) ○ (Male)

Education: ☐ None ☐ Primary ☐ Secondary ☐ University | Read? ☐ No ☐ Yes | Write? ☐ No ☐ Yes

Referred from: ☐ Self referral ☐ CBPCS/NGO ☐ (VCCT)

☐ (PMTCT) ☐ (TB Program) | Target Group ☐☐☐☐☐

☐ Other (Details about the facility) | UIC Number: ☐☐☐☐☐☐☐☐☐

Date of positive confirmatory HIV test: / / | VCCT Site Name: | VCCT Code: ☐☐☐☐☐☐ | VCCT client code: ☐☐☐☐☐☐

Official Transfer in? ☐ No ☐ Yes From .... | Children Clinic ID: P ☐☐☐☐☐☐

Date started ART in National Program: / / | ART number: ☐☐☐☐☐☐☐☐☐

Signature of register | Name

(TB Past Medical History and Treatment)

☐ Yes ☐ No ☐ Unknown

Type of TB			Date onset of sickness	TB treatment:		Date of treatment ..../....../......	
☐ (PTB)	☐ BK + ☐ BK -	☐ (EPTB)	/ /	☐ Cat 1	☐ Cat 2	☐ Cat 3	☐ Unknown

Treatment outcome: ☐ Unknown ☐ Cured ☐ Failure ☐ Treatment completed ☐ Defaulted ☐ Ongoing ☐ Date of Complete Treatment _____/______/

(Other Past Medical History)

HIV related illness	Date onset	Other not HIV related illness
	/ /	
	/ /	
	/ /	
	/ /	

Form A1

ទម្រង់សំរាប់ធ្វើបច្ចុប្បន្នភាពព័ត៌មានរបស់អ្នកជំងឺ (Adult Updated Information Form) ក១

លេខកូដអ្នកជំងឺ Clinic ID number							

ថ្ងៃខែឆ្នាំ ធ្វើបច្ចុប្បន្នភាពព័ត៌មានអ្នកជំងឺ / /

ឈ្មោះ (Name) ថ្ងៃ ខែ ឆ្នាំកំណើត (Date of birth) / / អាយុ ឆ្នាំ ☐ ស្រី (Female) ☐ ប្រុស (Male)

ស្ថានភាពគ្រួសារ (Marital status) ☐ នៅលីវ Single ☐ រៀបការ Married ☐ លែងលះ Divorced ☐ មេម៉ាយ/ពោះម៉ាយ Widow(er) | **មុខរបរ** Occupation

អាសយដ្ឋាន: (Address) ក្រុមទី Group ផ្លូវលេខ Street ភូមិ Village ឃុំ/សង្កាត់ Commun
ស្រុក/ខណ្ឌ District ខេត្ត/ក្រុង Province លេខទូរស័ព្ទ Phone numbe

ឈ្មោះអ្នកទំនាក់ទំនងទី១ Name of contact person 1 អាសយដ្ឋាន: Address: លេខទូរស័ព្ទ Phone number

ឈ្មោះអ្នកទំនាក់ទំនងទី២ Name of contact person 2 អាសយដ្ឋាន: Address: លេខទូរស័ព្ទ Phone number

ទទួលការគាំទ្របច្ចុប្បន្នដោយ: Current Support by ☐ ការថែទាំតាមផ្ទះ និងសហគមន៍ ដៃគូអង្គការក្រៅរដ្ឋាភិបាល (CBPCS/NGO) ឈ្មោះ និងទីតាំងរបស់ក្រុមថែទាំតាមផ្ទះ: (Name and location of CBPCS team): ____________

ព័ត៌មានអំពីការប្រព្រឹត្តប្រឈមមុខរបស់អ្នកជំងឺ (Patient Risk Behaviours)

ផឹកស្រា: Daily alcohol ☐ បច្ចុប្បន្ន Now ☐ ឈប់ Stop ☐ គ្មាន None | **ជក់បារី:** Tobacco ☐ បច្ចុប្បន្ន Now ☐ ឈប់ Stop ☐ គ្មាន None | **ចាក់គ្រឿងញៀន** IDU ☐ បច្ចុប្បន្ន Now ☐ ឈប់ Stop ☐ គ្មាន None

យ៉ាម៉ាគ្រឿងញៀន: Yama ☐ បច្ចុប្បន្ន Now ☐ ឈប់ Stop ☐ គ្មាន None ផ្សេងទៀត (បញ្ជាក់): Other specify: ....

ឥរិយាបថប្រឈមមុខ: Risk behaviours: ☐ បុរសស្រឡាញ់បុរស (MSM) ☐ អ្នកប្ដូរភេទ Transgender ☐ ស្ត្រីបំរើសេវាកំសាន្ត (EW) ☐ អ្នកចាក់គ្រឿងញៀន PWID ☐ អ្នកប្រើប្រាស់គ្រឿងញៀន PWUD ☐ ផ្សេងៗ (បញ្ជាក់) Other (specify) ....

ហត្ថលេខាអ្នកប្រមូលព័ត៌មាន Signature of register | ឈ្មោះ Name

ថ្ងៃខែឆ្នាំ ធ្វើបច្ចុប្បន្នភាពព័ត៌មានអ្នកជំងឺ / /

ស្ថានភាពគ្រួសារ (Marital status) ☐ នៅលីវ Single ☐ រៀបការ Married ☐ លែងលះ Divorced ☐ មេម៉ាយ/ពោះម៉ាយ Widow(er) | **មុខរបរ** Occupation

អាសយដ្ឋាន: (Address) ក្រុមទី Group ផ្លូវលេខ Street ភូមិ Village ឃុំ/សង្កាត់ Commun
ស្រុក/ខណ្ឌ District ខេត្ត/ក្រុង Province លេខទូរស័ព្ទ Phone numbe

ឈ្មោះអ្នកទំនាក់ទំនងទី១ Name of contact person 1 អាសយដ្ឋាន: Address: លេខទូរស័ព្ទ Phone number

ឈ្មោះអ្នកទំនាក់ទំនងទី២ Name of contact person 2 អាសយដ្ឋាន: Address: លេខទូរស័ព្ទ Phone number

ទទួលការគាំទ្របច្ចុប្បន្នដោយ: Current Support by ☐ ការថែទាំតាមផ្ទះ និងសហគមន៍ ដៃគូអង្គការក្រៅរដ្ឋាភិបាល (CBPCS/NGO) ឈ្មោះ និងទីតាំងរបស់ក្រុមថែទាំតាមផ្ទះ: (Name and location of CBPCS team): ____________

ព័ត៌មានអំពីការប្រព្រឹត្តប្រឈមមុខរបស់អ្នកជំងឺ (Patient Risk Behaviours)

ផឹកស្រា: Daily alcohol ☐ បច្ចុប្បន្ន Now ☐ ឈប់ Stop ☐ គ្មាន None | **ជក់បារី:** Tobacco ☐ បច្ចុប្បន្ន Now ☐ ឈប់ Stop ☐ គ្មាន None | **ចាក់គ្រឿងញៀន** IDU ☐ បច្ចុប្បន្ន Now ☐ ឈប់ Stop ☐ គ្មាន None

យ៉ាម៉ាគ្រឿងញៀន: Yama ☐ បច្ចុប្បន្ន Now ☐ ឈប់ Stop ☐ គ្មាន None ផ្សេងទៀត (បញ្ជាក់): Other specify: ....

ឥរិយាបថប្រឈមមុខ: Risk behaviours: ☐ បុរសស្រឡាញ់បុរស (MSM) ☐ អ្នកប្ដូរភេទ Transgender ☐ ស្ត្រីបំរើសេវាកំសាន្ត (EW) ☐ អ្នកចាក់គ្រឿងញៀន PWID ☐ អ្នកប្រើប្រាស់គ្រឿងញៀន PWUD ☐ ផ្សេងៗ (បញ្ជាក់) Other (specify) ....

ហត្ថលេខាអ្នកប្រមូលព័ត៌មាន Signature of register | ឈ្មោះ Name

Form A2

(PNTT Initial Assessment Form)	ក២
Clinic ID number	Date of visit / /
ឈ្មោះ (Name) ថ្ងៃ ខែ ឆ្នាំកំណើត (Date of birth) / / អាយុ ឆ្នាំ	☐ ស្រី (Female) ☐ ប្រុស (Male)

(Family Information)

Spouse/ partner, child	អាយុ Age	ស្ថានភាព HIV (HIV status) (+)	(-)	មិនដឹង Unknown	Date of last HIV Test	(Family: dead-Alive ?) រស់ Alive	ស្លាប់ Dead	មិនដឹង Unknown	ARV (Receiving ARV) បាទ Yes	ទេ No	មិនដឹង Unknown	pre-ART & ART (Name of pre-ART & ART Clinic)

(PNTT Initial Assessment)

First PNTT counselling date (DD/MM/YYYY)   /   /

PNTT Deferred due to : ☐ Risk of domestic violence ☐ Other reason (specify) ....

Type of partner: ☐ Sexual partner ☐ Sharing needle partner   Duration of relationship: .... Year / .... month / .... week

(Partner Name)   ថ្ងៃ ខែ ឆ្នាំកំណើត (Date of birth)   /   /   អាយុ   ឆ្នាំ   ☐ ស្រី (Female) ☐ ប្រុស (Male)

Risk behaviours: ☐ (MSM) ☐ Transgender ☐ (EW) ☐ PWID ☐ PWUD ☐ Other (specify) ....

PNTT Mode: ☐ Client Referral ☐ Conditional Referral ☐ Provider

(Result of PNTT Follow-ups)

Notified by: ☐ Client ☐ Counsellor ☐ Other (specify) .... ថ្ងៃ ខែ ឆ្នាំ ..../ ..../ 201... (DD/MM/YYYY)

Traced by: ☐ Client ☐ Counsellor ☐ Other (specify) .... ថ្ងៃ ខែ ឆ្នាំ ..../ ..../ 201... (DD/MM/YYYY)

(Follow up Test)

Partner's visits	Test date	Place	Result
លើកទី ១	.... / .... / 201....	☐ VCCT (VCCT name):	☐ Positive ☐ Negative
លើកទី ២	.... / .... / 201....	☐ VCCT (VCCT name):	☐ Positive ☐ Negative
លើកទី ៣	.... / .... / 201....	☐ VCCT (VCCT name):	☐ Positive ☐ Negative
លើកទី ៤	.... / .... / 201....	☐ VCCT (VCCT name):	☐ Positive ☐ Negative

(PNTT patient acceptance and adverse effects)

☐ (PNTT Patient acceptance) ☐ (Reported Domestic Violence) ☐ (Reported Discomfort)

☐ (Reported other averse effects) ....

Signature of register	(Name)

Form B

[illegible] (Adult Patient Visit Form)

[illegible] ______

Clinic ID number | ART number (ART number)

Date of visit ___ / ___ / 201__ ○ Early ○ Scheduled ○ Late

Name ______ Age ______ ○ Male ○ Female ○ Not pregnant ○ Pregnancy Status: ○ ○ [illegible] : ___/___/ 201__

Weight ___ Height ___ Temperature ___ Pulse ___ Resp rate ___ Blood pressure ___

Counselling about: □ STI Prevention □ ART Adherence □ Birth spacing □ TB Infection Control □ Partner status □ Condoms use | Number of condoms given: ______

HIV Prevention: □ Birth spacing Specify: ______ ○ Condoms use 100% ○ Unprotected sex ○ No sex

Current Medical History

Detail

[illegible]

[illegible] :

- [illegible] (Cough, anytime of any duration?) ○ (Yes) ○ (No)
- [illegible] (Fever, anytime of any duration?) ○ (Yes) ○ (No)
- [illegible] (Weight lost) ○ (Yes) ○ (No)
- [illegible] (Two weeks or more of drenching night sweats?) ○ (Yes) ○ (No)

Hospitalised since last visit? ○ No ○ Yes Number of days: .... Causes of hospitalisation ....

(Adherence Assessment): ARV [illegible] ○ No ○ Yes [illegible] (How many times) ______

Examination

Detail

[illegible] HIV related illnesses ([illegible] WHO Stage)

Stage 1				Stage 4			
Asymptomatic				HIV wasting sydrome			
Persistent Generalised Lymphadenopathy				Lymphoma			
Stage 2				Pneumocystis jiroved pneumonia			
[illegible] LOW <10%				Recurrent servere bacterial pneumonia			
Recurrent respiratory tract infections (sinusitis, tonsillitis, otitis media, pharyngitis)				Extrapulmonary tuberculosis			
Herpes zoster				Oesophageal candidiasis of trachea, bronchi or lungs			
Angular cheilitis				Atypical disseminated leishmaniasis			
Seborrhoeic dermatitis				Central nevous system toxoplasmosis			
Recurrent oral unclearations				Disseminated non-tuberculous mycobacteriosis infection			
Papular pruritic eruptions				Kaposi sarcoma			
Fungal nail infections				HIV encephalopathy			
Stage 3				Symptomatic HIV-associated nephropathy			
[illegible] Unexplained LOW >10% body weight				Chronic herpes simplex infection (orolabial, genital or anorectal of more than 1 month's duration or visceral)			
[illegible] Unexplained chronic diarrhoea > 1mth				Disseminated mycosis			
[illegible] Unexplained fever > 1mth				Chronic isosporiasis			
Oral candidiasis				Invasive cervical carcinoma			
Pulmonary TB				Recurrent septicaemia (including nontyphoidal Salmonella)			
Oral hairy leukoplakia				Cytomegalovirus disease (retinitis or infection of other organs, excluding liver, spleen and lymph nodes)			
Servere bacterial infections				Extrapulmonary cryptococcosis including meningitis			
Acute necrotizing ulcerative stomatitis, gingivitis or periodontitis				Chronic cryptosporidiosis			
Unexplained anaemia (below 8g/dl, neutropenia (below 0.5×10^9/l) and / or chronic thrombocytopenia (below 50×10^9/l)				Progressive multifocal leukoencephalopathy			

Matrix for Typical Cost Data Input

Table 20. Matrix for PNTT Costing Data Input

Evaluation of Partner Notification Tracing and Testing (PNTT)
Cost Allocation Component
Matrix for Cost Data Input

No		Cost Category	Cost Category	2015 - 2016																			
				Dec-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17
I		Nigerian Project																					
1		Program staff (salary, benefit, and insurance)																					
2		Non-program staff (salary, benefit, and insurance)																					
3		Transportation																					
4		Communication																					
5		Meeting																					
6		Training/workshop for implementing partners																					
7		Monitoring & evaluation (including field visits)																					
8		Others(Total Overhead)																					
II		Global Fund - IHAFA																					
1		Program staff (salary, benefit, and insurance)																					
2		Non-program staff (salary, benefit, and insurance)																					
3		Transportation																					
4		Communication																					
5		Meeting (including DSA)																					
6		Training/workshop for implementing partners																					
7		Monitoring & evaluation (including field visits)																					
8		Others(Total Overhead)																					
III		Implementing Partners																					
1.1.1		Central Office																					
A		Program Management/Support (salary, benefit, and insurance)																					
A-1		Executive Director																					
A-2		Program Manager/Branch Manager		-																			
A-3		Project Coordinator/Officer		-																			
A-4		M&E																					
B		Administration																					
B-1		*Non-program staff (salary, benefit, and insurance)*																					
B-2		Admin staff		-																			
B-3		Finance staff		-																			
B-4		Guard		-																			
B-5		Others (specify)																					
2		*Office Expenses*																					
2-1		Utilities (Electricity, water, sanitation)		-																			
2-2		Office supplies (copy, printing, paper, ink, maintenance)		-																			
2-3		Office rental		-																			
2-4		Repair and maintenance		-																			
2-5		Others (specify)																					
2-6		*Capital Costs*																					
2-7		Vehicle																					
2-8		Computer																					
2-9		Furniture																					
2-10		Equipment																					
2-11		Motorcycles																					
2-12		Others (specify)																					
C		Capacity Development (workshop & training)																					
C-1		Management/supporting staff																					
C-2		Non-program staff																					
D		Meeting (including DSA)		-																			
E		Transportation		-																			
F		Communication																					
G		Supervision to project sites		-																			
1.1.2		Provincial Office																					
A		Outreach staff																					
A.1		Incentive for Community Support Volunteer (CSV) or CACM																					
A.2		CMA		-																			
A.3		Fuel for CSV/CACM																					
A.4		Phone Card for CSV/CACM																					
A.5		Transportation for CACM																					
A.6		Salary for Case Management Supporter (CMS)																					
A.7		Others (specify)																					
B		Program Management/Support																					
B.1		Project Coordinator/Officer																					
B.2		CSO		-																			
B.3		Field staff/Team Leader																					
B.4		Community Support Officer		-																			
B.5		Guard																					
C		Administration																					
1		*Non-program staff*																					
1.1		Admin staff																					
1.2		Finance staff																					
1.3		Communication (internet)																					
2.1		Phone Card for PC and CSO																					
1.4		Fuel for CSO (to follow up)		-																			
1.5		Transporation		-																			
3.1		Others (specify)																					
2		*Office Expenses*																					
2-1		Utilities (Electricity, water, & sanitation)		-																			
2-2		Office supplies (copy, printing, paper, ink, & maintenance)																					
2-3		Office rental		-																			
2-4		Repair and maintenance		-																			
2-5		Printing																					
3		*Capital Costs*																					
3-1		Vehicle																					
3-2		Computer																					
3-3		Furniture																					
3-4		Equipment																					
3-5		Motorcycles																					
3-6		Others (specify)																					
4		Implementation Activities																					
4-1		Refer PLHIV to SHR/FP/PMTCT/ANC	CD																				
4-2		Support positive pregnant women during delivery																					
4-3		Referral mother & exposed infan	Prevention																				
4-4		Refer to VCCT-GP		-																			
4-5		Refer sero-discordant couples to HTC every 6 month	CD	-																			
4-6		Refer suspected population to STI screening and treatment	Prevention																				
4-7		Refer greatest need PLHIVs to get Pre-ART/ART service	Treatment																				
4-8		Refer new HIV positive PW to get Pre-ART/ART service	Treatment																				
4-9		Refe PLHIV to access Pre-ART/ART	Treatment																				
4-10		Refer PLHIVs to CD4 count	Adherence																				
4-11		Refer PLHIVs to Virus Load Test	Adherence																				
4-12		Refer PLHIV to RH/FP services including counseling																					
4-13		Refer PLHIV to TB screening and treatment		-																			
4-14		Refer PLHIV to STI services including counseling																					
4-15		Transport and Refreshment for conduct community education on STI/TB/PW with HC	Prevention																				
4-16		Transport and Refreshment for conduct Establish Community meeting with Sero-discordance Partners	Prevention																				
4-17		Transport, Refreshment, & Material for SHG meeting with adolescent on Postive Prevention SRH/FP, STI	Prevention																				
4-18		Transport, Refreshment, Material for meeting with community leader to discuss benefit of early HIV detection and treatment	CD																				
4-19		Transportation reactive client to HTC for confirmed test	CD																				
4-20		Transportation, Refreshment for Provide group counseling and finger prick testing	CD																				
4-21		Refreshment & Material on Conduct regular meeting (Group Education/Counseling) for PLHIV at Pre-ART/ART	Treatment/Adherence																				
4-22		Refreshment for Quarterly staff meeting	Cross Cuting																				
4-23		Supervision and monitoring visit of HC to project sites	CD																				
4-24		Supervision and monitoring visit of OD to project sites	CD/Treatment																				
4-25		Transport & Refreshment for conduct training on M&E to staff	Cross Cuting																				
4-26		Transport & Refreshment for conduct training on M&E to CACM	CD/Treatment/Adherence																				
4-27		Transportation, Refreshment and Lunch conduct training on M&E to staff and CACM	CD/Treatment/Adherence																				
4-28		Transport, Refreshment, Material for Conduct regular meeting with clients and service provider	Adherence																				
4-29		Transportation,Refreshment & Material for conduct group education to PLHIV, partners about gender based violence																					