EVALUATION OF COMMUNITY-BASED PREVENTION CARE AND SUPPORT FOR PEOPLE LIVING WITH HIV IN CAMBODIA

FINAL REPORT

HIV Innovate and Evaluate Project

Contract AID-442-C-13-00001

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HIV INNOVATE AND EVALUATE PROJECT

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Acronyms

AIDS	Acquired Immunodeficiency Syndrome
ART	Antiretroviral Therapy
AUA	ARV Users Association
BFD	Buddhism for Development
CBO	Community-Based Organization
CBPCS	Community-Based Prevention, Care and Support
CBRT	Community Based Rapid HIV Test
CHBC	Community Home-Based Care
CMS	Case Management Supporter
CoPCT	Continuum of Prevention to Care and Treatment
CPN+	Cambodian People Living With HIV Network
CSO	Community Support Officer
CSV	Community Support Volunteer
EW	Entertainment Worker
FP	Family Planning
GFTAM	The Global Fund To Fight AIDS, Tuberculosis and Malaria
HIV	Human Immunodeficiency Virus
IACM	Integrated Active Case Management
IP	Implementing Partner
KHANA	Khmer HIV/AIDS NGO Alliance
KP	Key Population
MARP	Most At Risk Population
MMM	Mondul Mith Chouy Mith
MOH	Ministry of Health
MSM	Men Who Have Sex with Men
NCHADS	National Center for HIV/AIDS, Dermatology, and STDs
NECHR	National Ethics Committee for Health Research
NGO	Non-Government Organization
OD	Operational District
OI	Opportunistic Infection
OVC	Orphan and Vulnerable Children
PC	Partners in Compassion
PLHIV	People Living With HIV
PPN+	Provincial PLHIV Network
Pre-ART	Pre-Antiretroviral Therapy
PWID	People Who Inject Drugs
SAHACOM	Sustainable Action Against HIV and AIDS In Communities Project
SCC	Salvation Center Cambodia
SHG	Self Help Group
SOP	Standard Operating Procedure
SRH	Sexual Reproductive Health
STI	Sexually Transmitted Infection
TB	Tuberculosis
TG	Transgender
URC	University Research Co., LLC
USAID	US Agency for International Development
VCCT	Voluntary Confidential Counseling and Testing For HIV
VSL	Village Savings and Loan

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Executive Summary

Background

The prevalence of HIV among the general population aged 15–49 in Cambodia has been decreasing consistently over the past decade in response to an effective multifaceted national response. Since 1998, the Cambodia Ministry of Health's National Center for HIV/AIDS, Dermatology, and STDs (NCHADS) has scaled up nationwide care, psychosocial support, and HIV-related education for PLHIV. In 2015, the Community-Based Prevention, Care, and Support (CBPCS) model was introduced to replace the community-based HIV/AIDS care (CBHC) model while upholding the principles of cost-effectiveness, sustainability, and engagement of people living with HIV in a health sector approach under Boosted Integrated Active Case Management (B-IACM), a client-oriented approach to better respond to individual needs along the HIV service cascade.

CBPCS is implemented throughout Cambodia by numerous NGOs in partnership with the Ministry of Health (MoH), and involves staff from NGOs and the MoH. Under the new CBPCS model, there are two categories of PLHIV: "stable" patients that are considered at low risk for poor outcomes, and thus are to be provided with less support, and "greatest need" patients who are thought to be at higher risk of poor outcomes, and thus meriting more support. The criteria for "greatest need" status 1) PLHIV who have initiated ART in the previous 24 months, 2) newly identified reactive and/or diagnosed cases, 3) PLHIV who have low treatment adherence (including stable PLHIV who becomes non- adherent), 4) PLHIV identified as poor, 5) sero-discordant couples, 6) HIV-positive key populations, 7) HIV-positive pregnant women, 8) HIV-positive children and adolescents, and 9) HIV-exposed infants. The new model did away with self-help groups while promoting the use of village savings and loan groups to provide support for PLHIV. Greatest need patients would receive home visits, transportation reimbursements, and other benefits.

The aims of this evaluation were: 1) to describe adherence, loss to follow up, deaths, and enrollment in HEF of PLHIV ("greatest need" and "stable") receiving services under the new CBPCS model; 2) to describe the key challenges faced by, and opportunities presented to, Community Support Volunteers (CSV), Case Management Supporters (CMS), NGO staff, medical doctors providing ART to PLHIV and counselor under the new CBPCS model; and 3) to assess the cost-effectiveness of the new model of CBPCS.

Methods

This study utilized quantitative and qualitative methods. For the quantitative component, representative samples of stable and greatest need PLHIV as designated by the programs, CSV and CMS were interviewed using structured questionnaires to assess their experiences with the new model of the CHBC program. Cost allocation was employed, examining data from past financial records, budgets, invoices, inventories, contracts, and other sources, using standardized data collection instruments. The qualitative component included key informant interviews with NGO staff, medical doctors and counselors, using questionnaire guides.

Data were collected from 4 provinces (Kandal, Siem Reap, Pursat, and Battambang) and from 5 NGOs: KHANA, Cambodian People Living with HIV/AIDS Network (CPN+), Buddhism for Development (BFD), Partners in Compassion (PC), and Salvation Center Cambodia (SCC).

Findings

A total of 838 PLHIV were interviewed from Pursat, Battambang, Kandal, and Siem Reap. It was initially expected that approximately 30% of PLHIV would meet greatest need criteria, but this evaluation's randomly selected sample showed that 72% of PLHIV bore this designation. By self-report, 87 PLHIV that were designated as stable reported meeting criteria for being considered greatest need.

Greatest need and stable PLHIV Comparisons

Greatest need and stable PLHIV were similar with regard to most measures. For example, on average, PLHIV had known their status for about 9 years, the majority of PLHIV (88%) had clinic appointments every two months, the majority of PLHIV (96%) reported being on time for their last clinic visit, and few PLHIV (3.5%) reported missing any ARV medication in the past two months. 49% of all PLHIV reported having ID Poor Cards (56% of greatest need PLHIV and 32% of stable PLHIV).

While the national database was unable to provide information on ARV adherence and could not differentiate between greatest need and stable PLHIV, there was strong evidence across the geographic areas that enrolment of individuals that tested positive for HIV into care increased, and that the ratio of PLHIV receiving ART to those that were diagnosed with HIV also increased. Overall losses to follow-up increased modestly under the new CBPCS model (0.42% to 0.68%), though the overall rate of loss to follow-up remained low.

Transportation Support

Greatest need PLHIV had approximately half of their transportation costs reimbursed (US$2.7 spent vs. US$1.4 reimbursed), on average, per visit. More than 90% of PLHIV across locations reported that transportation support was important or very important, with approximately two thirds (65%) projecting that loss of this support would negatively affect their family financially. The analysis found that timely attendance to clinic visits was associated with not having missed transportation reimbursements ($p = 0.039$).

CSV Home Visits and Referrals

The vast majority of PLHIV (>90%) reported a high level of satisfaction with, and importance of, CSV home visits, with many PLHIV suggesting that CSV support could be improved by home visits being conducted more often. The vast majority of PLHIV (>90%) also reported high levels of satisfaction with, and importance of, referral services.

Group Education Sessions and VSL Groups

Only 20% of PLHIV participated in group education sessions in the past year. Overall satisfaction with group education sessions among PLHIV that attended them was high, with 98% saying they were satisfied or very satisfied with these sessions. Most PLHIV that did not participate in group education sessions gave the reason that they did not know about their existence (61%), and a sizeable proportion (38%) reported that group education sessions were not offered at the clinic they attended.

Village saving and loan participation was also low, with only about 16% of PLHIV having participated in the previous 12 months. About half of all PLHIV (50%) that did not participate in a VSL group said there was none in their local area, and approximately one third (37%) said that they were never informed about VSL groups. No statistically significant associations were found between VSL attendance and program outcomes.

Comparing CBPCS to Old Model of Support

PLHIV demonstrated a wide diversity of opinions when comparing the new CBPCS approach to the previous approach, though a larger proportion (36%) thought the old approach was better, compared to 22% thought that the new approach was better. The largest proportion of respondents (42%), however, said either there was no difference or that they didn't know which was better

CSV and CSM

101 healthcare providers were interviewed, including 67 CSV. The client load for CSV (average 43 PLHIV per CSV) was much higher than the proposed load of 10-15 PLHIV.

The majority of CSV and CMS believed that their efforts under CBPCS were helping PLHIV, and that their work was valued by PLHIV. The vast majority of CSV and CMS also reported being satisfied or very satisfied with their responsibilities under the new CBPCS model, but cited challenges in reaching the PLHIV under their care because of far distances, PLHIV migration, and lack of financial resources (e.g. money to buy fuel for home visits and to buy phone cards to communicate with PLHIV). 24 of the 67 CSV said they were very unsatisfied or unsatisfied with the incentive provided for compensation. CSV reported overall incomplete performance of key activities of CBPCS. None of the 4 locations showed a majority of CSV currently performing the majority of these 15 tasks.

Cost Analysis

Total program costs varied widely among the four implementers, as did the unit costs of providing services to PLHIV. Total program cost was highest for SCC, in large part because of significant management and Flagship TA costs. SCC had the highest unit cost among the four implementers at a cost per PLHIV per year of $100, while BFD had the lowest unit cost at $26 per PLHIV per year. The costs per client under CBPCS were all less than the cost per client under the previous CHBC model ($125).

Conclusion

The new CBPCS model provided an overall adequate level of service to PLHIV, with excellent adherence to ART and timeliness in attendance to clinic appointments evident among both greatest need and stable PLHIV, with no appreciable difference between the groups or between the NGOs implementing CPBCS, while having a significantly lower average annual cost per PLHIV than the previous model. Losses to follow-up and deaths remained low under the new model, despite the reductions in services to stable PLHIV. Approximately half (49%) of all PLHIV reported having ID Poor cards (56% of greatest need PLHIV and 32% of stable PLHIV), making them eligible for HEF.

CSV and CSM were motivated and felt their efforts were making a positive difference for PLHIV, but many felt their financial compensation should be more generous to cover the costs of their work. PLHIV highly valued and were highly satisfied with CSV home visits and referrals, and also highly valued the transportation reimbursements, which covered about half their transportation costs.

There were areas of suboptimal performance, including: 1) an unexpectedly high number of greatest need PLHIV which resulted in high caseloads for CSV and less availability of funds for PLHIV transportation reimbursements; 2) low availability and utilization of group education sessions (only 20% participation) and; and 3) low availability and utilization of VSL groups (only 16% participation).

Background

1. Program and Epidemiologic Context

Cambodia's success in the fight against HIV/AIDS is demonstrated by declining its national prevalence of HIV among the general population aged 15–49 from an estimated 1.7% in 1998 to 0.7% in 2012 (NCHADS, 2013; NCHADS, 2014a). This remarkable success has occurred in the context of strong national leadership, strong collaboration between the national program and key stakeholders, and effective program implementation. For example, in HIV care and treatment, since 2008 the national effort increased the total number of active patients on ART nationwide to 54,147 people living with HIV (PLHIV) in mid-2016 (NCHADS, 2016).

In 1998, the Cambodia Ministry of Health's National Center for HIV/AIDS, Dermatology, and STDs (NCHADS) rolled out a pilot project on community-based HIV/AIDS care (CBHC) in Phnom Penh. At the time, there was poor national capacity to manage the increasing demands for HIV/AIDS care, including a lack of access to ART and an insufficient ability to manage severe opportunistic infections (NCHADS, 2006). Since its introduction in 1998, community-based care has been scaled up nationwide to provide care, psychosocial support, and HIV-related education for PLHIV (NCHADS, 2009). Over the years, the approach has been continually updated to respond to the changing epidemic and to remain in line with the national HIV strategic and program direction (NCHADS, 2009).

In 2008, NCHADS expanded ART coverage and launched community home-based care (CHBC), which included the establishment of Mondul Mith Chouy Mith (MMM) groups at ART clinics and PLHIV self-help groups (SHGs) to provide non-biomedical support to PLHIV and provide opportunity for PLHIV to access ART, share experiences, support each other and decrease discrimination (NCHADS 2009). This updated model aimed to increase the use of health services by promoting the linkage between community and health facility services for PLHIV. Self-help groups and PLHIV volunteers were responsible for delivering supportive services, with coordination and technical support provided by nongovernmental organization (NGOs). Nonclinical support included impact mitigation, economic strengthening, livelihood support, and nutrition, reflecting the need for a holistic approach to PLHIV care and support.

From 2009 through 2014, the Sustainable Action against HIV and AIDS in Communities Project (SAHACOM) Project supported an increasing number of PLHIV served by CHBC. As HIV prevalence has decreased in recent years, and with the end of the SAHACOM Project and the tapering of Global Fund and other external funding, overall resources for the Cambodian response to HIV have also been reduced. Consequently, a new model of CHBC has been established in line with NCHADS's 2015–2020 strategy, renamed Community-Based Prevention, Care, and Support (CBPCS). This new, streamlined approach is intended to uphold the principles of cost-effectiveness, sustainability, engagement of people living with HIV, gender sensitivity, and emphasis on a health-sector approach (NCHADS, 2014b).

2. SAHACOM

The 5-year SAHACOM Project was a new approach shifting away from direct NGO service delivery to NGO support for PLHIV, Community Support Volunteers (CSV) and Self Help Groups (SHGs) (USAID, 2014). KHANA worked with 26 implementing partners (IP) and community-based organizations (CBOs) to provide HIV care and support services to over 16,024 OVC and 8,423 PLHIV in 9 provinces (KHANA, 2013). The goal of SAHACOM was "improved health and quality of life of people in Cambodia by reducing the impact of HIV and AIDS, especially amongst the most vulnerable population groups." Three objectives of the project were designed to achieve this goal:

1. Improved coverage, quality and sustainability of comprehensive and integrated services for PLHIV (including most at risk persons [MARPs) and orphans and vulnerable children

(OVC),

2. Improved uptake of innovative and targeted HIV prevention interventions and services by MARPs, especially by those from currently under-served and neglected groups, and
3. Strengthened capacity and leadership of NGOs/CBOs and communities (especially those representing MARPs & PLHIV) leads to their meaningful participation in delivering quality and sustainable HIV prevention and care services within the national response. (KHANA, 2013)

Under SAHACOM, KHANA's IPs provided CHBC in Phnom Penh and eight provinces with the highest HIV prevalence rates in Cambodia. As a result of the implementation of the CHBC, 361 SHGs were supported to provide care and support to a total of 9,250 PLHIV and 10,139 OVC, or about 60% of the national CHBC coverage. Furthermore, with the new roles of CSV, a majority of PLHIV had participated in the SHGs. SAHACOM data showed that 89% of PLHIV in the project were retained on ART 12 months after initiation, comparing favorably with the national retention rate of 85% (KHANA, 2014).

In the context of reduced external funding for the Cambodian response to HIV, the next evolution of CBPCS model was streamlined with the aim of upholding the principles of cost- effectiveness, sustainability, and engagement of people living with HIV in a health sector approach (NCHADS, 2015b; KHANA, 2014)

3. The New CBPCS Model

Under the new CBPCS model, begun in January 2015, there are two categories of PLHIV: "stable"[1] patients that are considered at low risk for poor outcomes, and thus are to be provided with less support, and "greatest need" patients who are thought to be at higher risk of poor outcomes, and thus meriting more support. The criteria that confer "greatest need" status are (NCHADS, 2015b):

- PLHIV who have initiated ART in the previous 24 months,
- Newly identified reactive and/or diagnosed cases,
- PLHIV who have low treatment adherence (including stable PLHIV who becomes non- adherent),
- PLHIV identified as poor,
- Sero-discordant couples,
- HIV-positive key populations,
- HIV-positive pregnant women,
- HIV-positive children and adolescents, and
- HIV-exposed infants.

CBPCS services are part of Boosted Integrated Active Case Management (B-IACM), a client-oriented approach to better respond to individual needs along the HIV service cascade. B-IACM is a central pillar of the national HIV response under the coordination and responsibility of the OD Case Management Coordinator, unifying the Boosted Continuum of Care (Boosted CoC), Boosted Linked Response (Boosted LR) and Boosted Continuum of Prevention, Care and Treatment (Boosted CoPCT) networks. The aim of B-IACM is to reduce or eliminate loss to follow-up at each step of the HIV cascade, and to provide segmented support to the different subgroups of PLHIV, with an emphasis on those who meet the criteria for greatest need (NCHADS, 2015).

NGO partner staff work closely with relevant Ministry of Health (MOH) staff at the ART clinic to provide care and support to PLHIV. These include operational district (OD) case management coordinators and assistants and CSV. At ART clinics, greatest need PLHIV receive three-in-one clinic services: ART,

[1] According to the WHO, stable patients are defined as those receiving ART for at least 1 year with no adverse drug reactions requiring regular monitoring, no current illnesses or pregnancy, a good understanding of lifelong adherence, and evidence of treatment success (two consecutive undetectable viral load measures or rising CD4 counts or CD4 counts above 200 cells/mm3 and an objective adherence measure) (Waldrop 2016).

counseling (group or individual), and transportation reimbursement.

Under the CBPCS model, NCHADS defined key roles and responsibilities for CSO, CSV, Cambodian People Living with HIV Network (CPN+) staff/ARV Users Association (AUA) teams, village savings and loan (VSL) groups, and Case Management Supporters (CMS) (NCHADS, 2015a).

Community Support Officers (CSO)

Community Support Officers (CSO) play important roles in:

- Recruiting PLHIV and KP who are HIV-positive to work as CSV;
- Providing technical support, mentorship and capacity building to CSV and Provincial PLHIV Network (PPN+), as needed;
- Operating and strengthening structures and systems at the facility and community level

Community Support Volunteers (CSV)

CSV are PLHIV who work to support other PLHIV at home and in the community. Under the new CBPCS model, they receive a monthly incentive of US$50, including a stipend of $40, $5 for transportation and $5 for communication. CSV are key advocates for PLHIV within the health system, providing education, counseling, referrals, and transportation reimbursements. CSV work closely with NGO CPN+ /AUA staff based at the ART clinic to provide care and support services to greatest need PLHIV with other members of their households, at the community level. NCHADS described the CSV roles and responsibilities:

- The package of services provided by CSVs includes:
  - ✓ Follow-up of PLHIV with greatest need, including conducting home visits, to provide on-going counseling and education, maximize retention in the care cascade and to ensure that clients adhere to ART adherence, and regular testing for CD4 and/or viral load.
  - ✓ Active referral to relevant health and non-health services, including pre- ART/ART, SRH/FP, PMTCT, VCCT, STI, TB.
- The case load for each CSV is projected to be 15 clients in urban areas and 10 clients in rural areas. In settings where there is high burden, peers will be appropriately assigned to work with specific communities. For instance, an EW peer CSV will be recruited to work with HIV-positive members of EWs.
- CSVs report to and are supervised/coordinated by an NGO officer in the short-term, and the CPN+ Staff/AUA teams at the ART clinic in the medium-to-long term.
- CSVs receive a monthly incentive of $50.

CPN+ staff and ARV Users Association (AUA)

CPN+ Staff/AUA teams work with CSV to provide monthly group counselling or group education session for not only greatest need PLHIV, but also stable PLHIV at the ART clinic. Content of counselling and education sessions (individual or group) conducted by CPN+ Staff/AUA teams includes: 1) health education on self-care, home care, health promotion, nutrition and prevention of HIV transmission; 2) support and counselling for treatment adherence and positive prevention; 3) spiritual support including prayer and meditation with monks; and 4) referrals to appropriate health and non-health services, including for PMTCT, SRH/FP, TB, CD4 and VL monitoring, social and financial support, etc. (NCHADS, 2015b).

The following are the roles and responsibilities of CPN+ Staff/AUA teams, as defined by NCHADS (NCHADS, 2015b):

- CPN+ Staff/AUA teams based at each ART clinic will provide the following services to each PLHIV that visits the clinic:
  - ✓ Triage

- ✓ Patient file management and record keeping
- ✓ Medical appointment management
- ✓ Tracking of clients who are lost to follow-up
- ✓ Provide counseling on treatment adherence, positive prevention, SRH/FP, TB, STI and psychosocial support.
- ✓ Client referral to internal and external health and non-health services

- CPN+ Staff/AUA teams provide individual (ad-hoc) and facilitate group (monthly) counseling and education sessions at the ART clinic for all PLHIV.
- CPN+ Staff/AUA teams will report to and be supervised by the nurse counselor CMP at the ART clinic.

Village Savings and Loan (VSL) Groups

Under the new model, village savings and loan (VSL) groups replace the former role of SHGs. VSL groups are expected to be self-sufficient and self-sustaining, requiring only limited technical support and mentorship from specialized NGOs during the initial establishment period. VSL groups are formed by community members (non-PLHIV and PLHIV) to cooperatively save money through VSL groups by regularly depositing small monetary amounts (around 10,000 riel per month) into a savings account. Members also contribute 500 riel each into another savings pot to be accessed during emergencies only. In addition, VSL groups will work closely with MMM facilitators at ART clinics to provide additional HIV-related support, such as treatment literacy, positive prevention, and sexual/reproductive health and family-planning services. This linkage will be particularly important for stable PLHIV patients who are not being served by CSV. At sites with low HIV burden or less number of greatest need PLHIV, PLHIV may be linked to ART directly through VSL groups.

Case Management Supporters (CMS)

Case Management Supporters (CMS) are responsible for (NCHADS, 2015a):

- Referring all new HIV cases detected at health facility level (including health centres, family health clinics and hospital wards) to the VCCT for confirmation;
- Following up to ensure identified infection are confirmed;
- Referring all confirmed infections to the ART for enrolment to ensure that all of them are enrolled;
- Following up all patients on Pre-ART to ensure their appropriate enrolment in ART when required; and
- Monitoring and following up all patients on ART to ensure their adherence and to identify and resolve problems of adherence.

4. The New CBPCS Model Implementation

Following the initial limited rollout of the new model beginning in January 2015, in April-September 2015, KHANA and its IPs began implementation of the new CBPCS model. The initial implementation model was evaluated in Kandal Province, implemented by CPN+ and in Pursat Province, implemented by Partners in Compassion, with interviews of 569 PLHIV, 19 CSV, 7 CSO and others in 2015 (HIEP, 2015). This analysis took place about two months after CBPCS started. Key findings from this evaluation include the following:

- The proportion of PLHIV categorized as greatest need was significantly higher (61%) than the 30% initially projected by KHANA and NCHADS;
- It was likely that an additional 34 (or 15%) stable PLHIV should have been categorized as greatest need, given that they met at least one of the five criteria measured;
- 97% of all PLHIV were on time for their last appointment, with similar proportions of greatest need and stable PLHIV reporting this;
- There was a very high level of satisfaction with home visits, with 90% of greatest need PLHIV

reporting being "satisfied or very satisfied." In addition, 95% of greatest need PLHIV reported that home visits were "important or very important." Indeed, fully half of greatest need PLHIV felt that the home visits service was so suitable, they had no suggestions on how to improve it. There was also a very high level of satisfaction with referrals, with 90% of greatest need PLHIV reporting being "satisfied or very satisfied" and 90% reporting that referrals were "important or very important";

- Approximately two-thirds of PLHIV had never participated in a VSL program. The most common reason given by PLHIV for not participating was that none existed in their local area; another important reason, cited by 18% of greatest need PLHIV in Pursat, was that they had never been informed about the existence of such programs. Indeed, the VSL program reportedly did not exist at all in Kandal;
- Overall, PLHIV had high levels of satisfaction with CBPCS services, especially home visit, counselling, group education at ART clinic and ART service;
- Approximately one-third of PLHIV receiving services at Pursat Clinic and Chey Chum Neas said the wait before receiving ARVs was too long;
- A number of CSO and CSV reported that some stable PLHIV were disgruntled at the withdrawal of financial support for transportation, which made them less open to engaging with CSO and CSV, thus compromising the ability to provide support;
- About one in seven greatest need PLHIV suggested that CSV should receive a more substantial compensation for their work; and
- Many CSV and CSO noted that though their geographic coverage areas had been significantly increased under the CBPCS model, but their resources for transportation had not increased.

5. Implementers

CBPCS is implemented throughout Cambodia by numerous NGOs in partnership with the MoH. In agreement with NCHADS (see methodology section), this evaluation will focus on the programs elaborated by the NGOs KHANA, CPN+, BFD, PC and SCC. These NGOs are described in the text below.

a. KHANA

KHANA is the largest national NGO providing HIV prevention, care, and support services in Cambodia. Initially established in 1996, KHANA launched a pilot project to support eight local NGOs to implement community HIV prevention and care projects. As the HIV epidemic changed, KHANA's main goals are: 1) improving integrated HIV programming; 2) improving community health outcomes in relation to sexual and reproductive health, maternal and child health, and tuberculosis; 3) supporting secure livelihoods; 4) strengthening management capacity and technical excellence in community HIV, health and development responses (KHANA, 2016a).

Under the new CBPCS model, KHANA currently works with 9 implementing partners, by providing funding and training to build skills and strengthen organizational and financial management through regular technical support visits, training, workshops, and exchange visits. With the financial and technical support from KHANA under the new model of CBPCS, the 9 KHANA IPs provide care and support to 16,013 PLHIV including 10,925 greatest need PLHIV in 14 provinces, including: Banteay Meanchey, Battambang, Kampong Cham, Tboung Khmum, Kampong Chhnang, Kampong Speu, Kampot, Kandal, Kratie, Phnom Penh, Pursat, Siem Reap, Stoeung Treng, and Takeo (KHANA, 2016b).

b. Cambodian People Living with HIV/AIDS Network

Established in 2001, CPN+ is a national network that works to improve the health and well-being of PLHIV, MARPs, and households affected by HIV and AIDS. It also promotes HIV-sensitive economic development and social protection through (1) increasing access to high-quality, cost-effective, and comprehensive health and psychosocial support services for PLHIV, MARPs, and their families; (2) strengthening HIV-

sensitive economic support and social protection for PLHIV, MARPs, and their families; (3) representing PLHIV and MARPs and advocating for the rights of people and households affected by HIV in Cambodia; (4) strengthening the CPN+ network to be a strong skill and leadership organization; and (5) building the long-term sustainability of the network (CPN+ Website).

Under the new CBPCS model, CPN+ has received GF funding and technical support through NCHADS to implement CBPCS in 16 ODs of within Kandal, Svay Rieng, Rattanakiri, Modulkiri, Prey Veng, Kampong Thom, Preah Sihanouk, Preah Vihear, Koh Kong, and Phnom Penh, from 1 October 2015 to 31 December 2017. CPN+ operates 14 MMM sites to assist ART service providers. In addition, CPN+ supports 91 CSV providing care and support services to greatest need PLHIV to ensure that they adhere to ART and to handle some issues related like stigma and discrimination environment and assist to identify and find aids to support poor PLHIVs in day-to-day basis. CPN+ provided care and support to 5,887 PLHIV by the end of the second trimester in 2016 (CPN+, 2016).

c. Buddhism for Development (BFD)

Buddhism for Development (BFD) is an NGO that provides services, support, advice, and training to Cambodians to participate in the sustainable socio-economic development of their own communities. It started working on HIV/AIDS prevention in 1994 and Home-Based Care Project in 2002. From 2009-2014, the number of adult PLHIV that received care and support from BFD increased from 861 to 1,058. With financial and technical support from KHANA under the Global Fund grant, BFD started implementing new Community Based Prevention, Care and Support in Battambang province in 2015.

d. Partners in Compassion (PC)

Established in 2001, PC's main goal is to serve the needs of Cambodia's most vulnerable people by providing educational, healthcare, and psychological support to raise the standard of life while lowering the level of dependency in those who seek its services. It does this by promoting prevention, care, and support, including healthcare support, welfare, living conditions, freedom, education, and vocational training for various target groups, especially PLHIV and OVC who face problems and lack the ability and resources to help themselves. Under the new CBPCS model, PC has received technical and financial support from KHANA to implement care and support to PLHIV in Pursat.

e. Salvation Center Cambodia (SCC)

SCC was established as a local non-profit Non-government Organization in 1994. It uses a pagoda- and community-based approach to address the challenges, needs and problems of poor households, including orphan and vulnerable children, PLHIV, drug users, and others at high risk. SCC started working on HIV in 1994, and has made a significant contribution to HIV prevention and AIDS care, and improvement in the living conditions of its beneficiaries. With financial and technical support from Flagship, SCC started implementing the new CBPCS model in Siem Reap Province in 2015.

Table 1 shows the CBPCS activities reported by the 4 implementing NGOs. Of the 32 activities, SCC reported performing 31, PC 18 activities, CPN+ 18 activities, and BFD 11 activities.

Table 1: NGOS and CBPCS service delivery models

Activities	NGO			
	BFD	SCC	PC	CPN+
Conduct community ACM monthly meeting	X	X		
Conduct home visit to PLHIV house		X		X
Conduct meeting with service providers	X	X		X
Conduct quarterly meeting		X	X	
Conduct supervision and monitoring to HC		X	X	
Follow up lost follow up cases		X		X
Follow up PLHIV missing ART appointment		X		X
Manage VSL group meeting	X	X	X	
Participate in GoC meeting		X		
Participate in network meeting	X	X		
Participate in OD weekly meeting		X		
Provide group education at ART clinic		X		
Provide Group education at community		X		
Provide one to one education to PLHIV	X	X	X	X
Refer and support pregnant to have HIV test at VCCT		X	X	X
Refer greatest need PLHIV to ART service	X	X	X	X
Refer New HIV pregnant women to ART clinic	X	X	X	X
Refer PLHIV to access RH and FP services		X	X	X
Refer PLHIV to ART clinic for CD4 count	X	X	X	X
Refer PLHIV to ART clinic for virus load testing	X	X	X	X
Refer PLHIV to STI service		X	X	X
Refer PLHIV to TB service	X	X	X	
Refer Pregnant women to PMTCT service		X	X	X
Refer sero-discordant couple to VCCT		X	X	X
Refer suspected cases to STI screening			X	X
Refer suspected cases to VCCT		X	X	X
Support PLHIV pregnant women for accessing delivery service		X	X	X
Trace partners of new HIV positive cases		X		
Train CBPCS staff on implementation of CBPCS activity	X	X	X	X
Training CSO and community active case management (CACM) on new case detection		X		
Update data collection tool		X		
Update PLHIV files		X		

Study Rationale

Support beyond biomedical services is critical to achieve optimal outcomes for people living with HIV (PLHIV). In the Cambodian context, CBPCS is the approach to provide this support. The need for timely information about the model's roll-out, particularly with regard to the impact on PLHIV and facility and nongovernmental organization staff, is critical.

Study Aim and Objectives

1. Aim

This study's overall aim is to understand the experiences of CSV, greatest need and stable people living with HIV (PLHIV) receiving services under the new model in order to inform the implementation of the program.

2. Objectives

- To describe adherence, losses to follow up, deaths, and enrollment in HEF of PLHIV ("greatest need" and "stable") receiving services under the new CBPCS model;
- To describe the key challenges faced by, and opportunities presented to, Community Support Volunteers (CSV), Case Management Supporters (CMS), NGOs staff, medical doctors provide ART to PLHIV and counselor under the new CBPCS model; and
- Assess the cost-effectiveness of the new model of CBPCS.

Research Questions

The overall research question is "what is the performance of the new CBPCS model?"

To answer the research question, following sub-questions will be addressed:

1. CBPCS model implementation
    a. Have PLHIV been categorized appropriately based on the criteria for PLHIV with greatest need?
    b. Are there suggested changes to the criteria for PLHIV with greatest need?
    c. What are suggested improvements to the implementation of CBPCS?
    d. What is the cost-effectiveness of the new CBPCS model?
2. Client Experience with different services under new CBPCS model
    a. What were the retention and adherence including lost to follow up (LTFU) of PLHIV?
    b. How satisfied are greatest need PLHIV with the referral support provided by CSV?
    c. What were the enrollment in HEF of PLHIV, especially greatest need PLHIV?
    d. How satisfied are greatest need with the transportation support provided under the new CBPCS model?
    e. What were the functions of, and the participation by stabilized PLHIV and greatest need PLHIV in, group counseling/group education sessions conducted at ART Clinic?
    f. To what extent have stable PLHIV and greatest need PLHIV participated in VSL?
3. CSV/CSM Experience
    a. What are the actual roles of CSV within the new model of CBPCS?
    b. What are the key challenges faced by CSV, CMS, NGOs staff, Medical Doctors, and counselors?

Scope of the Study

The study examined the experiences of greatest need PLHIV, stable PLHIV and CSV receiving services under the new model in Kandal, Siem Reap, Pursat, and Battambang Provinces with the NGOs KHANA, CPN+, BFD, PC and SCC. The study allocated costs of the CBPCS project implemented by local NGOs funded by USAID and GFTAM. Costs of different aspects or outputs of the CBPCS project were determined and costs will be categorized into subsets such as management level, field staff (CSO), volunteer (CSV), referral, and administration. The cost of each component or activity was identified by using direct arithmetic methods and unit costs were estimated.

Methodology

1. Study Design

This study utilized quantitative and qualitative methods. For the quantitative component, representative samples of stable and greatest need PLHIV, CSV and CMS and other providers were interviewed by using structured questionnaires to assess their experiences with the new model of the CHBC program. The qualitative component included key informant interviews with NGO staff, medical doctors and

counselors, using questionnaire guides.

For the costing component, retrospective data were collected utilizing data from past financial records, budgets, invoices, inventories, contracts, and other sources, using standardized data collection instruments.

2. Study Population and sample size

The effectiveness of the CBPCS new model in providing prevention, care and support to PLHIV was determined by comparing baseline data with this evaluation. The following sample size formula, from Epi Open Source Statistics for Public Health, was employed:

$$n = \left(\frac{r+1}{r}\right)\frac{(\overline{p})(1-\overline{p})(Z_{\beta}+Z_{\alpha/2})^2}{(p_1-p_2)^2}$$

Available data from baseline for the key indicators (PLHIV participating in group education/counseling) was 12.4% with 80% chance of detecting, ratio of controls to cases 1 at 95% of two-sided confidence level. If the key indicator is increased from 12.4% to 19.6%, the total sample size would be 820 PLHIV. Given a non-response and incomplete response rate of 5%, 41 persons were added to the calculated sample size. So a total of 861 PLHIV were selected for interviewing.

3. Sampling Strategy

A total of 861 PLHIV were selected through multiple stage sampling to select representative sample of PLHIV living in the coverage of KHANA implementing partners and CPN+:

First stage: Through discussions with USAID, NCHADS, KHANA, and CPN+, 4 provinces were purposively selected from provinces covered by KHANA's IPs and CPN+ with high numbers of PLHIV living in the province. Those provinces include Kandal, Siem Reap, Pursat, and Battambang Provinces. The section criteria were:

- Provinces that had been evaluated in 2015
- Provinces had been part of the previous interim analysis,
- Provinces having higher numbers of PLHIV were more likely to be selected, and
- Service areas where the distance between PLHIV homes and ART clinic is large were more likely to be selected. Phnom Penh was excluded because the service area distances were small compared to other provinces.

Second stage: Probability Proportional to Size (PPS) was used to select 64 health centers located in the 4 Provinces.

Third stage: 861 PLHIV were randomly selected from each health center of the 64 health centers. 10 PLHIV were randomly selected from the each health center based on the list of CSV working in this coverage area.

In addition, 54 CSVs (one CSV was selected from each health center) and 4 CMS (one CMS was selected from each ART site) providing care and support to PLHIV and at least 8 medical doctors, 8 NGO staff and 4 counselors were included in the survey.

4. Materials

Two questionnaires, one financial data collection form and one questionnaire guide were developed. The questionnaire for PLHIV focused on the implementation of CBPCS model and client experiences in receiving services from providers, especially from CSV and CMS. The questionnaire for CSV, and CMS

focused on the knowledge related to selecting greatest need and their perceptions on the implementation of the CBPCS model. The financial data collection form focused on the cost of overhead, personnel, referral, training/workshop, meeting and publication. The questionnaire guide for NGO staff, medical doctor, and counselors focused on their new roles and challenges they faced under new CBPCS model. The data collection tools were field-tested and revised before being deployed for the study.

5. Training Field Researchers

16 field researchers (12 persons for survey and 2 persons for costing) were recruited and trained on how to conduct structured interviews with PLHIV and manage fieldwork. They were also be trained on how to use data collection tools including questionnaires and informed consent forms. The costing team was trained on how to review and collect financial data using the costing tools. All necessary tools were field tested to ensure the tools' functionality and accuracy, then, the tools were revised and finalized based on field tests.

6. Data Collection

a. Process of data collection

To achieve this ambitious data collection plan, two evaluative study teams were constituted. The costing team was composed of HIEP Administration and Finance Staff with extensive experience in collecting financial collected financial information in coordination with NGO finance manager and other officers. The survey team consisting of 12 field researchers was divided into four small teams consisting of 3 members that were each managed by a team leader. HIEP technical staff and an operational manager managed all data collection team. The survey team worked with NGO staff to collect data by interviewing PLHIV, CSV, CMS, NGOs staff, medical doctors, and counselors.

Data on deaths, losses to follow-up and enrollment were drawn from the publicly available NCHADS website (NCHADS 2017).

b. Location and Timeframe of data collection

The data collection conducted from 12 January to 8 February 2017 in 4 provinces: Kandal, Pursat, Battambang and Siem Reap.

7. Data Management and Data Analysis

7.1. Data Management

All transcripts were proofread to ensure accuracy and then entered into NVivo 10™, a computer application for analyzing unstructured data. Field notes, debriefing notes, and transcripts from in-depth interviews were maintained in this computer application and used in the analytical process.

The field research team used tablets with SurveyToGo Studio software, which were used to design the database, based on the structure of the questionnaire. This computer application allowed for efficient data collection and save time for data entry and data cleaning. Importantly, this application could control for domain errors (errors due to typing answer outside a range of valid answers in the questionnaire). In addition, this application can be used off line or on line. After finishing each interview, each field researcher sent the completed forms and questionnaires to the central office in Phnom Penh. After completed survey the administrator can export data immediately from his/her PC to SPSS or STATA files. All data were password protected and access allowed only authorized users.

7.2. Data Analysis

STATA version 14 was used to analyze quantitative data. Descriptive statistics and inferential statistics were employed for quantitative data analysis corresponding to study design and research questions. Frequency analyses and chi-square test and t-tests (comparing two means) were used. Available routine program data of NCHADS, CPN+ and Flagship were used for analyzing the retention and lost to follow up (LTFU) of PLHIV.

There might be unmeasured variables that confound the results. In this situation, analysis of covariance (ANCOVA), binary regression, and multinomial regression were used to remove the bias of these variables.

Qualitative data were organized into categories on the basis of themes, concepts, or similar features. Relationships among concepts were examined, and concepts were linked to each other in terms of sequence, as oppositional sets, or as sets of similar categories that interview. A systematic process of qualitative data analysis was performed using NVivo 10.

Cost allocation and unit cost analysis were employed in this study to determine program costs. We estimated the financial costs (i.e. costs to the program), and did not take into account societal costs or benefits.

Ethical Considerations

1. Ethical Review and Informed Consent

The protocol, questionnaire and informed consent form were reviewed and approved by the Cambodian National Ethics Committee for Health Research (NECHR) dated January 2, 2017.

The information sheet and consent form were translated from English to Khmer and back translated to ensure correct interpretation. Enumerators gave a copy of the informed consent form to every participant to read preceding the interview at all sites and ask participants if they have any questions. In cases of low-literacy, the information sheet and consent forms were read aloud by the data collector to the participant during the consent process and the participant, if willing, provided their consent with their thumbprint.

A private space was selected and used for the interview and discussion. The questionnaire was administered face-to-face with no other person in the room than the interviewer and the study participant. The research team safeguarded these protections for participants:

- Participation was completely voluntary; subjects were free to withdraw at any time;
- Informed consent was signed in a private room/place;
- Confidentiality was guaranteed on all documents and tools used; no names was used in written documentation of the study; and
- Data collectors were trained in discussing sensitive issues and protecting respondents' confidentiality and human rights.

Participants received no compensation for their participation in the study. It was anticipated that the results of the study would benefit people at risk or living with HIV. Interviews took approximately one hour each. Field researchers were instructed to report any incidents in the field to their supervisors on a daily basis.

2. Potential Risks

Due to the sensitive nature of the questions and the study populations, there was a psychological risk or discomfort for some sub-groups participating in the study. Participants could refuse to answer any question. The study team explained the purpose of interviews and clarified the confidentiality of the information gathered and that the information will only be used to improve care, treatment and support services for PLHIV. Research staff were provided basic counselling skills and knowledge to deal with these populations.

3. Benefits

Clients were informed that the research will be used to improve HIV services in Cambodia.

4. Confidentiality

All study procedures were conducted in private. All study-related information were kept in a confidential manner. After data collection, questionnaires, forms, and written notes were stored securely at URC. Only authorized persons from the study will have access to the locked file cabinet or to password-protected electronic study files.

5. Protocol Compliance

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

Limitations

Where there were no CSVs, field researchers sometimes found it difficult to locate PLHIV. In addition, a number of new CSVs or CSOs who had just received new coverage areas in addition to their previous coverage areas did not know the homes of PLHIV. In these cases, field researchers requested PLHIV who just finished an interview to bring the team to meet other PLHIV.

Some CSVs were hesitant to bring field researchers to meet stable PLHIV, because those PLHIV were no longer receiving transportation support and had negative attitudes toward CSVs.

This study was conducted exclusively in Battambang, Pursat, Siem Reap and Kandal Provinces, so its findings may not be fully representative of all locations where the new CBPCS services are provided. It is likely, however, that lessons learned from these four locations will be broadly instructive.

While data were collected on PLHIV's perceptions, data were not collected on individual reciept of home visits or attenddance in education sessions, which limits the anlysis of associations between these elements with program outcomes.

Findings

PLHIV

1. Study Participant Characteristics

1.1. Location and PLHIV Category

Table 2 shows the number of PLHIV participating in the study, disaggregated by sex, PLHIV category and province. A total of 838 PLHIV participated; 592 females and 246 males, of whom 603 (72%) were designated greatest need PLHIV and 235 (28%) were designated stable PLHIV. There were 272 PLHIV from Battambang, 124 PLHIV from Kandal, 212 PLHIV from Pursat and 230 PLHIV from Siem Reap.

Table 2: Location and PLHIV Category

Province	Sex	GN (N = 603)	Stable (N = 235)
Battambang (N = 272)	Female (N = 192)	70.8%	29.2%
	Male (N = 80)	78.8%	21.3%
	total (N = 272)	73.2%	26.8%
Kandal (N = 124)	Female (N = 89)	70.8%	29.2%
	Male (N = 35)	65.7%	34.3%
	total (N = 124)	69.4%	30.6%
Pursat (N = 212)	Female (N = 148)	75.0%	25.0%
	Male (N = 64)	67.2%	32.8%
	total (N = 212)	72.6%	27.4%
Siem Reap (N = 230)	Female (N = 163)	69.3%	30.7%
	Male (N = 67)	76.1%	23.9%
	total (N = 230)	71.3%	28.7%
Total (N = 838)	Female (N = 592)	71.5%	28.5%
	Male (N = 246)	73.2%	26.8%
	total (N = 838)	72.0%	28.0%

1.2. Education

Table 3 shows the comparison of the levels of education completed between stable PLHIV and greatest need PLHIV, disaggregated by province. Among the 838 PLHIV, the largest proportion of PLHIV (47%) had completed primary school (48% of greatest need PLHIV and 45% of stable PLHIV).

Table 3: Education of PLHIV

Province	PLHIV Category	Never attended school (N = 225)	Primary school (N = 393)	Junior high school (N = 171)	High school (N = 45)	University (N = 3)	Literacy Class (N = 1)
Battambang	GN (N = 199)	27.6%	49.2%	17.1%	5.5%	.5%	.0%
	Stable (N = 73)	16.4%	45.2%	31.5%	6.8%	.0%	.0%
	Total (N = 272)	24.6%	48.2%	21.0%	5.9%	.4%	.0%
Kandal	GN (N = 86)	19.8%	46.5%	26.7%	7.0%	.0%	.0%
	Stable (N = 38)	13.2%	34.2%	47.4%	2.6%	2.6%	.0%
	Total (N = 124)	17.7%	42.7%	33.1%	5.6%	.8%	.0%
Pursat	GN (N = 154)	25.3%	50.6%	19.5%	4.5%	.0%	.0%
	Stable (N = 58)	29.3%	41.4%	20.7%	5.2%	1.7%	1.7%
	Total (N = 212)	26.4%	48.1%	19.8%	4.7%	.5%	.5%
Siem Reap	GN (N = 164)	37.8%	43.9%	14.6%	3.7%	.0%	.0%
	Stable (N = 66)	27.3%	53.0%	10.6%	9.1%	.0%	.0%
	Total (N = 230)	34.8%	46.5%	13.5%	5.2%	.0%	.0%
Total	GN (N = 603)	28.7%	47.8%	18.4%	5.0%	.2%	.0%
	Stable (N = 235)	22.1%	44.7%	25.5%	6.4%	.9%	.4%
	Total (N = 838)	26.8%	46.9%	20.4%	5.4%	.4%	.1%

1.3. Marital Status

Table 4 shows the marital status of PLHIV between greatest need PLHIV and Stable PLHIV disaggregated by provinces. Married PLHIV (50%) was the largest group (49% of greatest need PLHIV and 52% of stable PLHIV).

Table 4: Marital Status of PLHIV

Province	PLHIV Category	Married (N = 417)	Cohabiting (Not married but living with partner) (N = 74)	Divorced (N = 42)	Not yet divorced but living separately (N = 6)	Widow/widower (N = 270)
Battambang	GN (N = 199)	50.8%	10.1%	6.5%	.0%	30.7%
	Stable (N = 73)	53.4%	2.7%	6.8%	.0%	28.8%
	Total (N = 272)	51.5%	8.1%	6.6%	.0%	30.1%
Kandal	GN (N = 86)	43.0%	9.3%	3.5%	.0%	40.7%
	Stable (N = 38)	50.0%	.0%	2.6%	.0%	44.7%
	Total (N = 124)	45.2%	6.5%	3.2%	.0%	41.9%
Pursat	GN (N = 154)	50.0%	7.1%	3.9%	.6%	34.4%
	Stable (N = 58)	55.2%	6.9%	1.7%	.0%	31.0%
	Total (N = 212)	51.4%	7.1%	3.3%	.5%	33.5%
Siem Reap	GN (N = 164)	48.2%	14.6%	5.5%	1.8%	26.2%
	Stable (N = 66)	50.0%	7.6%	6.1%	3.0%	33.3%
	Total (N = 230)	48.7%	12.6%	5.7%	2.2%	28.3%
Total	GN (N = 603)	48.8%	10.4%	5.1%	.7%	31.8%
	Stable (N = 235)	52.3%	4.7%	4.7%	.9%	33.2%
	Total (N = 838)	49.8%	8.8%	5.0%	.7%	32.2%

1.4. Age of PLHIV

Table 5 shows that the mean ages were similar across locations and between greatest need PLHIV and stable PHIV, ranging between 44.2 years and 46.5 years.

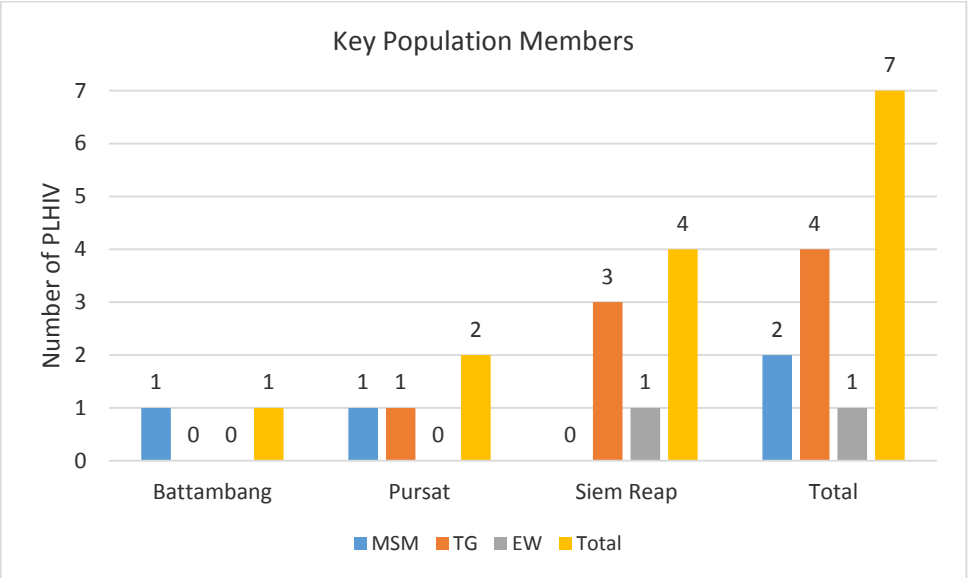
Table 5: Age of PLHIV

Provinces	Categorised PLHIV	N = 838	Mean	Median	Minimum	Maximum
Battambang	GN PLHIV	199	46.4	46	18	80
	Stable PLHIV	73	45.2	45	19	70
Kandal	GN PLHIV	86	45.3	45	19	68
	Stable PLHIV	38	46.5	47	20	66
Pursat	GN PLHIV	154	44.6	46	18	65
	Stable PLHIV	58	44.9	46	18	65
Siem Reap	GN PLHIV	164	44.2	44	20	64
	Stable PLHIV	66	45.1	44	30	62

1.5. Key Population Representation

Figure 1 shows the number of PLHIV who identified themselves as KP in the four provinces. There were only 7 KP: 2 MSM (1 in Battambang and 1 in Pursat), 4 TG (1 in Pursat and 3 in Siem Reap), and 1 EW in Siem Reap. No PLHIV in Kandal identified themselves as KP.

Figure 1: Key Population Members by Location



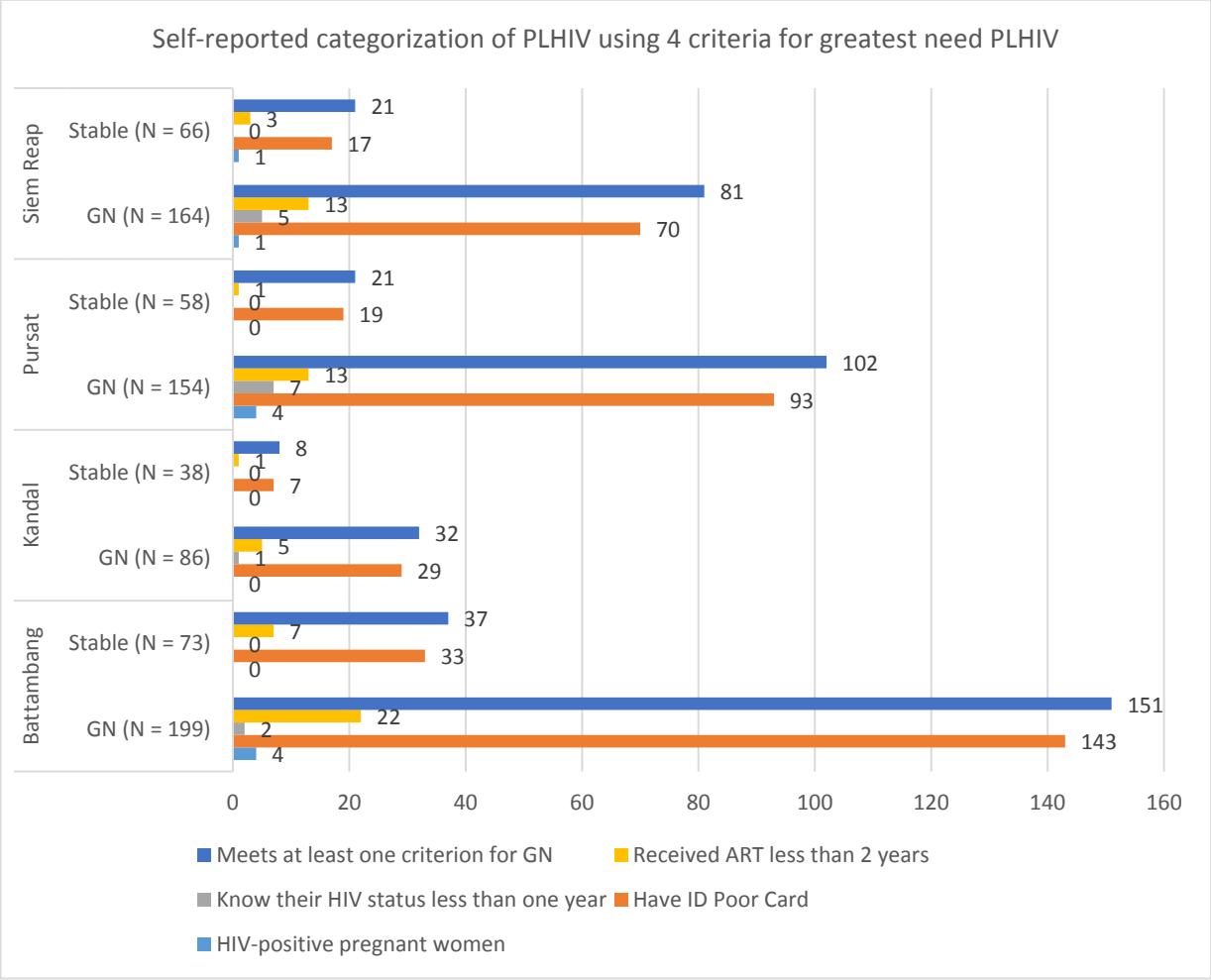
1.6. Categorization of PLHIV using 4 self-reported criteria for greatest need PLHIV

Figure 2 and table 6 show the self-reported characteristics of PLHIV against 4 criteria for selection of greatest need PLHIV: 1) HIV-positive pregnant women, 2) having ID Poor Card, 3) newly identified reactive or diagnosed cases for less than one year and 4) PLHIV who have initiated antiretroviral therapy (ART) for fewer than 2 years. Among 838 PLHIV, 453 PLHIV (366 greatest need PLHIV and 87 stable PLHIV) met one or more of these four criteria. Among those, PLHIV who had ID Poor cards (411 PLHIV) was the largest group, accounting for 49% of all PLHIV (56% of greatest need PLHIV and 32% of stable PLHIV). A total of 87 PLHIV among 235 stable PLHIV may have been misclassified as stable while they actually met one or more criterial for selecting greatest need PLHIV, according to their self-report.

Table 6: Self-reported categorization of PLHIV using 4 criteria for greatest need PLHIV

Province	PLHIV Category	Greatest Need Criteria				
		HIV-positive pregnant women	Have ID Poor Card	Know their HIV status less than one year	Received ART less than 2 years	Meets at least one criterion for GN
Battambang	GN (N = 199)	4	143	2	22	151
	Stable (N = 73)	0	33	0	7	37
	Total (N = 272)	4	176	2	29	188
Kandal	GN (N = 86)	0	29	1	5	32
	Stable (N = 38)	0	7	0	1	8
	Total (N = 124)	0	36	1	6	40
Pursat	GN (N = 154)	4	93	7	13	102
	Stable (N = 58)	0	19	0	1	21
	Total (N = 212)	4	112	7	14	123
Siem Reap	GN (N = 164)	1	70	5	13	81
	Stable (N = 66)	1	17	0	3	21
	Total (N = 230)	2	87	5	16	102
Total	GN (N = 603)	9	335	15	53	366
	Stable (N = 235)	1	76	0	12	87
	Total (N = 838)	10	411	15	65	453

Figure 2: Self-reported categorization of PLHIV using 4 criteria for greatest need PLHIV



2. PLHIV accessing to ART Services

2.1. Duration of time knowing HIV status and duration of time on ART

Table 7 shows that the average time of PLHIV knowing their HIV status was 10.8 years, 10.6 years for greatest need PLHIV and 11.2 years for stable PLHIV. On average, stable PLHIV in Pursat knew their HIV status for 12 years compared to 9.8 years for greatest need PLHIV in Pursat. For other provinces, no major differences were noted between greatest need and stable PLHIV. Table 6 also shows the average duration of time on ART among PLHIV in the four provinces is 9.1 years, 9 years for greatest need PLHIV and 9.5 years for stable PLHIV. The average duration of time on ART among stable PLHIV in Pursat was 10.1 years compared to 8.5 years among greatest need PLHIV. For other provinces, no major differences were noted between greatest need and stable PLHIV.

Table 7: Duration of time (in years) knowing HIV status and duration of time on ART

Province	PLHIV Category	Mean		Minimum		Maximum	
		knowing HIV status	Time on ART	knowing HIV status	Time on ART	knowing HIV status	Time on ART
Battambang	GN	10.6	8.7	1	1	24	22
	Stable	10.5	8.7	3	1	24	17
	Total	10.6	8.7	1	1	24	22
Kandal	GN	11.7	10.2	1	1	22	19
	Stable	11	9.9	3	1	17	16
	Total	11.5	10.1	1	1	22	19
Pursat	GN	9.8	8.5	1	1	24	19
	Stable	12	10.1	2	2	21	19
	Total	10.4	9	1	1	24	19
Siem Reap	GN	10.8	9	1	1	24	23
	Stable	11.3	9.6	2	1	24	17
	Total	10.9	9.2	1	1	24	23
Total	GN	10.6	9	1	1	24	23
	Stable	11.2	9.5	2	1	24	19
	Total	10.8	9.1	1	1	24	23

2.2. Visit Frequency to ART Clinic

Table 8 reports the reported usual visit frequency of PLHIV to ART clinics between greatest need and stable PLHIV in the four provinces. The largest proportion of PLHIV (88%) visited ART clinic every two months-- 87% for greatest need PLHIV and 90% for stable PLHIV. The proportion of PLHIV in Kandal accessing to ART every three months (43%) was highest. The data show that in Kandal a larger proportion of greatest need PLHIV (47%) than stable PLHIV (34%) had visits every 3 months. No PLHIV in Siem Reap had visits every 3 months, and overall, only 9% of PLHIV had visits on 3 monthly schedule.

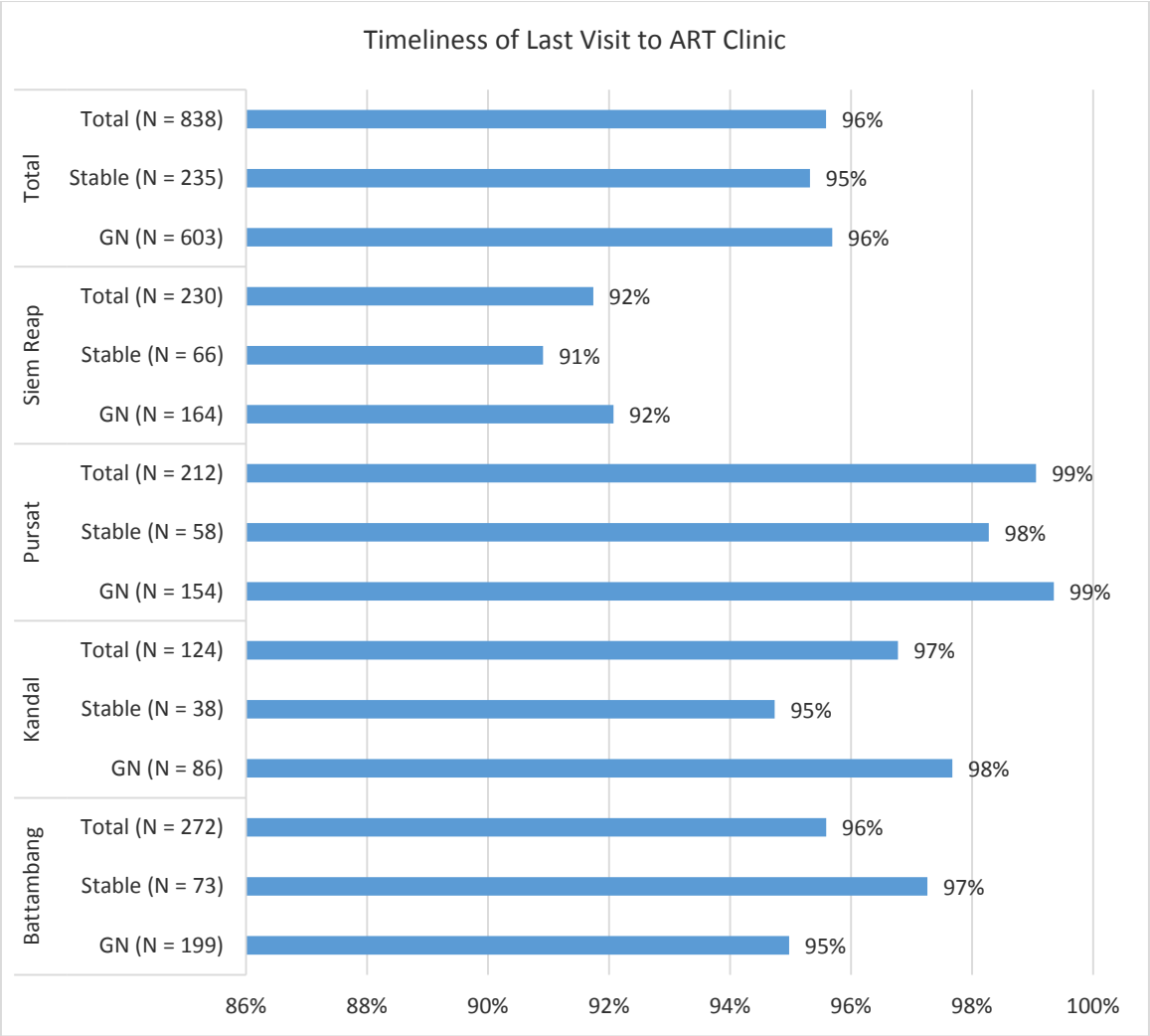
Table 8: Visit Frequency to ART Clinic

Province	PLHIV Category	Every month	Every two months	Every three months
Battambang	GN (N = 199)	4.0%	93.5%	2.5%
	Stable (N = 73)	4.1%	94.5%	1.4%
	Total (N = 272)	4.0%	93.8%	2.2%
Kandal	GN (N = 86)	4.7%	48.8%	46.5%
	Stable (N = 38)	.0%	65.8%	34.2%
	Total (N = 124)	3.2%	54.0%	42.7%
Pursat	GN (N = 154)	2.6%	91.6%	5.8%
	Stable (N = 58)	3.4%	87.9%	8.6%
	Total (N = 212)	2.8%	90.6%	6.6%
Siem Reap	GN (N = 164)	4.3%	95.7%	0%
	Stable (N = 66)	.0%	100.0%	0%
	Total (N = 230)	3.0%	97.0%	0%
Total	GN (N = 603)	3.8%	87.2%	9.0%
	Stable (N = 235)	2.1%	89.8%	8.1%
	Total (N = 838)	3.3%	87.9%	8.7%

2.3. Timeliness of Last Visit to ART Clinic

Figure 3 shows the PLHIV accessing ART clinics on the day of their scheduled appointment. About 96% of greatest need PLHIV and 95% of stable PLHIV accessed ART clinics on the assigned day. The highest timeliness (99%) was among PLHIV living in Pursat, followed by Kandal and Battambang greatest need PLHIV (98%) and (96%), respectively. The lowest was in Siem Reap (92%). Statistical analysis found that there was a significant difference in timeliness of last visit to ART clinic between the provinces (p <0.001***).

Figure 3: Timeliness of Last Visit to ART Clinic



2.4. Reasons for not accessing to ART Clinic on time

Table 9 describes the reasons for not accessing ART clinic on time among PLHIV living in the four provinces. Among 37 PLHIV, there were 24 PLHIV (15 greatest need and 9 stable PLHIV) reporting that they could not access to ART clinic on time because they were busy with other things. This was by far the most common reason given, followed by 4 PLHIV remembering the wrong ART appointment date, 3 who simply forgot, and 6 PLHIV that had other reasons.

Table 9: Reasons for not accessing to ART Clinic on time

Province	PLHIV Category	Busy with other thing	Lack of Means of transportation	Lost ART book	Remembering the wrong ART appointment date	Simply forgot	Illness	Don't Know/Don't Remember	Total
Battambang	GN (N = 10)	6	0	1	2	0	0	1	10
	Stable (N = 2)	2	0	0	0	0	0	0	2
	Total (N = 12)	8	0	1	2	0	0	1	12
Kandal	GN (N = 2)	1	0	1	0	0	0	0	2
	Stable (N = 2)	1	0	0	1	0	0	0	2
	Total (N = 4)	2	0	1	1	0	0	0	4
Pursat	GN (N = 1)	1	0	0	0	0	0	0	1
	Stable (N = 1)	1	0	0	0	0	0	0	1
	Total (N = 2)	2	0	0	0	0	0	0	2
Siem Reap	GN (N = 13)	7	0	0	1	3	2	0	13
	Stable (N = 6)	5	1	0	0	0	0	0	6
	Total (N =19)	12	1	0	1	3	2	0	19
Total	GN (N = 26)	15	0	2	3	3	2	1	26
	Stable (N = 11)	9	1	0	1	0	0	0	11
	Total (N = 37)	24	1	2	4	3	2	1	37

2.5. Transportation support to greatest need PLHIV to access to ART Clinic

Table 10 shows that in general, greatest need PLHIV spending on transportation to ART clinic was more than the money reimbursed. On average, each greatest need PLHIV spent on the transportation to visit ART Clinic about 10,635 Riels (US$ 2.7) and the reimbursement was 5,617 Riels (US$ 1.4).

Statistical analysis showed that there was a significant association between amount of transportation support reimbursed and timeliness of last visit to ART clinic (p = 0.028)

Table 10: Cost of transportation spent by greatest need PLHIV and transportation support reimbursed to greatest need PLHIV to ART clinic

Province	Category	N	Mean	Minimum	Maximum
Battambang	Spent	199	10,707	0	60,000
	Reimbursed	199	6,510	0	40,000
Kandal	Spent	86	9,529	0	35,000
	Reimbursed	86	3,152	0	20,000
Pursat	Spent	154	13,662	0	50,000
	Reimbursed	154	7,340	0	25,000
Siem Reap	Spent	164	8,288	0	50,000
	Reimbursed	164	4,207	0	24,000
Total	Spent	603	10,635	0	60,000
	Reimbursed	603	5,617	0	40,000

2.6. Greatest Need PLHIV that had received no reimbursement of transportation to ART Clinic

Table 11 shows that among 603 greatest need PLHIV, 73% of them had ever failed to receive reimbursement of transportation to ART Clinic on the day of their clinic visit. The highest percentage of PLHIV (85%) that had this experience was in Kandal Province, followed by Siem Reap (81%), Battambang (68%) and Pursat (65%). The main reasons for receiving no reimbursement were reported lack of funds from the NGO (42%) and the late disbursement of funding (9.9%). See table 12.

Table 11: Greatest Need PLHIV had received no reimbursement of transportation to ART Clinic

Province	No (N = 155)	Yes (N = 442)	Don't know (N = 6)
Battambang (N = 199)	30.2%	68.3%	1.5%
Kandal (N = 86)	12.8%	84.9%	2.3%
Pursat (N = 154)	35.1%	64.9%	.0%
Siem Reap (N = 164)	18.3%	81.1%	.6%
Total (N = 603)	25.7%	73.3%	1.0%

Table 12: Reasons for receiving no reimbursement of transportation to ART Clinic

Reason	Battambang	Pursat	Siem Reap	Total
My name was not yet sent to ART clinic	2.9%	2.0%	4.5%	2.7%
Could not wait for getting transportation support	0.0%	0.0%	3.8%	1.1%
CSV did not provide transportation coupon	13.1%	1.0%	2.3%	5.4%
CSV told that NGO has no fund	28.5%	62.7%	38.3%	42.2%
Expired ID-Poor Card	0.0%	0.0%	4.5%	1.3%
Find work outside my hometown	2.2%	1.0%	0.8%	1.1%
Accounting report of transportation was closed every Friday afternoon	0.0%	0.0%	5.3%	1.6%
Late disbursement of funding	3.6%	13.7%	8.3%	9.9%
No ID Poor Card	0.0%	0.0%	7.5%	2.2%
Take turn	20.4%	4.9%	3.8%	9.2%
Don't Know	18.2%	11.8%	12.0%	16.6%
Others	10.9%	2.9%	9.0%	6.7%

2.7. The importance of Transportation Support to ART Clinics among greatest need PLHIV

Table 13 describes the importance of transportation support to ART Clinics reported by greatest need PLHIV. More than 90% of them verbally reported that transportation support to ART clinics was important or very important. This figure was lowest is Siem Reap (86%). In addition, 41% of greatest need PLHIV reported that it would have a negative or very negative effect to lose transportation support. See table 14. The key reasons were: 1) the family status of greatest need PHIV will be (negatively) affected (59%), 2) greatest need PHIV will owe money from others for accessing to ART Clinic (55%), and 3) they will not be able to access to ART as ART appointment (23%). (See table 15)

Table 13: The Importance of Transportation Support to ART Clinics

Province	Very Unimportant (N = 2)	Unimportant (N = 19)	Neutral (N = 37)	Important (N = 177)	Very Important (N = 368)
Battambang	0.0%	2.0%	6.0%	34.7%	57.3%
Kandal	0.0%	4.7%	3.5%	16.3%	75.6%
Pursat	0.0%	3.2%	4.5%	25.3%	66.9%
Siem Reap	1.2%	3.7%	9.1%	33.5%	52.4%
Total	0.3%	3.2%	6.1%	29.4%	61.0%

Table 14: Patients' predictions of the impact of loss of transportation support on health

Province	Very negative effect	Negative effect	No effect	Positive effect	Very positive effect
Battambang	16.6%	29.6%	31.7%	20.6%	1.5%
Kandal	15.1%	36.0%	17.4%	17.4%	14.0%
Pursat	12.3%	21.4%	20.1%	35.7%	10.4%
Siem Reap	12.8%	23.8%	30.5%	20.1%	12.8%
Count	86	162	159	144	52
Total	14.3%	26.9%	26.4%	23.9%	8.6%

Table 15: Reasons for Patients' predictions of the impact of loss of transportation support on health

Reason	Battambang (N = 91)	Kandal (N = 44)	Pursat (N = 52)	Siem Reap (N = 60)
Could not access to ART clinic as appointment	24.2%	15.9%	25.0%	23.3%
Owe money from others for accessing ART Clinic	57.1%	61.4%	59.6%	43.3%
Family status would be affected	44.0%	81.8%	57.7%	65.0%
No ability to spend for transportation fees	8.8%	4.5%	7.7%	5.0%
Walk to ART Clinic	2.2%	2.3%	0.0%	0.0%
Feeling upset	1.1%	0.0%	0.0%	1.7%
No money for buying food during waiting for ART	2.2%	0.0%	1.9%	0.0%
Others	4.4%	2.3%	1.9%	0.0%

3. CSV Services

3.1. Satisfaction and importance of Respondents with CSV Home Visit Activity

Table 16 reports the satisfaction of greatest need and stable PLHIV with home visit activities conducted by CSV. More than 94% of greatest need PLHIV were satisfied or very satisfied with home visit activities conducted by CSV. Most greatest need PLHIV (97%) from Battambang and 91% of greatest need PLHIV from Kandal Province were satisfied or very satisfied. From 97% to 99.5% of all greatest need PLHIV reported that CSV home visit were important or very important to them. (see table 17).

Table 16: Satisfaction of Greatest Need PLHIV to CSV home visits

Province	Very unsatisfied (N = 7)	Unsatisfied (N = 10)	Neutral (N = 17)	Satisfied (N = 134)	Very satisfied (N = 435)	Don't Know/Don't Remember
Battambang (N = 199)	.0%	1.0%	2.5%	23.6%	72.9%	.0%
Kandal (N = 86)	5.8%	1.2%	2.3%	29.1%	61.6%	.0%
Pursat (N = 154)	.0%	2.6%	3.2%	20.1%	74.0%	.0%
Siem Reap (N = 164)	1.2%	1.8%	3.0%	18.9%	75.0%	.0%
Total (N = 603)	1.2%	1.7%	2.8%	22.2%	72.1%	.0%

Table 17: Importance of CSV home visits

Province	Very Unimportant (N = 1)	Unimportant (N = 1)	Neutral (N = 6)	Important (N = 140)	Very Important (N = 455)
Battambang (N = 199)	.0%	.0%	.5%	30.7%	68.8%
Kandal (N = 86)	1.2%	1.2%	1.2%	17.4%	79.1%
Pursat (N = 154)	.0%	.0%	1.3%	19.5%	79.2%
Siem Reap (N = 164)	.0%	.0%	1.2%	20.7%	78.0%
Total (N = 603)	.2%	.2%	1.0%	23.2%	75.5%

3.2. Satisfaction with Referral Services

Table 18 shows that 91% of PLHIV were satisfied (15%) or very satisfied (76%) with CSV referral services. Overall greatest need PLHIV were somewhat more satisfied with referral services than stable PLHIV, with the proportions that were satisfied or very satisfied totalling 93% and 87%, respectively, p=0.000. The highest satisfaction was among PLHIV in Pursat, with 97% reporting being satisfied or very satisfied. Statistical analysis shows that there was a significant difference between Pursat and Battambang (p = .025), Kandal (p = .000) and Siem Reap (p = .001).

Table 18: Satisfaction of PLHIV to CSV Referral Service

Test between provinces Provinces		PLHIV Category	Very unsatisfied (N = 1)	Unsatisfied (N = 7)	Neutral (N = 16)	Satisfied (N = 126)	Very satisfied (N = 638)	Don't Know (N = 50)	P value
Pursat	Battam-bang	GN (N = 199)	.0%	.5%	1.0%	18.1%	75.9%	4.5%	.025**
		Stable (N = 73)	.0%	1.4%	5.5%	20.5%	63.0%	9.6%	
		Total (N = 272)	.0%	.7%	2.2%	18.8%	72.4%	5.9%	
	Kandal	GN (N = 86)	1.2%	1.2%	.0%	16.3%	70.9%	10.5%	.000***
		Stable (N = 38)	.0%	2.6%	5.3%	7.9%	73.7%	10.5%	
		Total (N = 124)	.8%	1.6%	1.6%	13.7%	71.8%	10.5%	
	Pursat	GN (N = 154)	.0%	1.3%	.6%	13.0%	84.4%	.6%	
		Stable (N = 58)	.0%	.0%	3.4%	12.1%	82.8%	1.7%	
		Total (N = 212)	.0%	.9%	1.4%	12.7%	84.0%	.9%	
	Siem Reap	GN (N = 164)	.0%	.0%	2.4%	11.6%	78.0%	7.9%	.001***
		Stable (N = 66)	.0%	1.5%	1.5%	18.2%	69.7%	9.1%	
		Total (N = 230)	.0%	.4%	2.2%	13.5%	75.7%	8.3%	
	Total	GN (N = 603)	.2%	.7%	1.2%	14.8%	77.9%	5.3%	.000***
		Stable (N = 235)	.0%	1.3%	3.8%	15.7%	71.5%	7.7%	
		Total (N = 838)	.1%	.8%	1.9%	15.0%	76.1%	6.0%	

3.3. Importance of CSV Referral Activities

Table 19 shows that 92% of PLHIV reported that the referral activities done by CSV were important or very important (93% for greatest need PLHIV and 89% for stable PLHIV).

Table 19: Importance of CSV Referral Service to PLHIV

Province	PLHIV Category	Very Unimportant (N = 1)	Unimportant (N = 5)	Neutral (N = 10)	Important (N = 131)	Very Important (N = 640)	Don't know (N = 51)
Battambang	GN (N = 199)	.0%	.5%	.5%	15.1%	78.9%	5.0%
	Stable (N = 73)	.0%	.0%	2.7%	24.7%	61.6%	11.0%
	Total (N = 272)	.0%	.4%	1.1%	17.6%	74.3%	6.6%
Kandal	GN (N = 86)	1.2%	1.2%	.0%	14.0%	73.3%	10.5%
	Stable (N = 38)	.0%	2.6%	2.6%	13.2%	73.7%	7.9%
	Total (N = 124)	.8%	1.6%	.8%	13.7%	73.4%	9.7%
Pursat	GN (N = 154)	.0%	.6%	.6%	15.6%	82.5%	.6%
	Stable (N = 58)	.0%	.0%	1.7%	15.5%	81.0%	1.7%
	Total (N = 212)	.0%	.5%	.9%	15.6%	82.1%	.9%
Siem Reap	GN (N = 164)	.0%	.0%	1.8%	12.8%	77.4%	7.9%
	Stable (N = 66)	.0%	1.5%	1.5%	18.2%	69.7%	9.1%
	Total (N = 230)	.0%	.4%	1.7%	14.3%	75.2%	8.3%
Total	GN (N = 603)	.2%	.5%	.8%	14.4%	78.6%	5.5%
	Stable (N = 235)	.0%	.9%	2.1%	18.7%	70.6%	7.7%
	Total (N = 838)	.1%	.6%	1.2%	15.6%	76.4%	6.1%

3.4. Suggestions to improve CSV support

Overall, nearly half of respondents (46%) thought home visits should be conducted more frequently. Significant proportions of PLHIV also thought that CSV should share new information (25%), that transportation support should be continued (23%), and that economic support should be provided (17%). 8% of PLHIV thought that CSV should receive greater incentive. See table 20.

Table 20: PLHIV suggestions to improve CSV support

Suggestion	Battambang (N = 272)	Kandal (N = 124)	Pursat (N = 212)	Siem Reap (N = 230)	Total (N = 838)
No suggestion	20.6%	25.0%	22.2%	30.0%	24.2%
Home visit should be conducted more often	44.9%	46.0%	50.5%	44.8%	46.4%
More incentive support to CSV	13.6%	1.6%	8.5%	4.3%	8.0%
PLHIV should follow the guidance of CSV	6.6%	6.5%	14.6%	8.7%	9.2%
Sharing new information	23.9%	25.8%	30.2%	20.9%	24.9%
Social support should be provided	7.0%	12.9%	5.7%	5.7%	7.2%
Economic support should be provided	18.0%	21.0%	15.6%	13.5%	16.6%
Continue providing transportation support	23.5%	35.5%	21.7%	16.5%	22.9%
Meeting should be conducted regularly	7.4%	7.3%	6.1%	7.0%	6.9%
Confidentiality should be improved	1.5%	1.6%	1.4%	3.0%	1.9%
Accountability and transparency	2.6%	5.6%	3.3%	5.2%	3.9%
PLHIV should participate actively with CSV	6.6%	2.4%	6.6%	5.7%	5.7%
CSV should educate PLHIV on how to take ARV correctly and on time	2.2%	3.2%	1.9%	2.2%	2.3%
CSV should provide more psychological support	1.5%	0.8%	0.9%	2.2%	1.4%
Don't know	1.5%	0.8%	0.0%	0.9%	0.8%
Others	8.8%	6.5%	7.5%	6.5%	7.5%

4. Group Education

4.1. Participation of PLHIV in Group Education Sessions at ART Clinic

Table 21 shows that most PLHIV (80%) did not participate in clinic-based group education sessions at ART clinics, with no statistically significant difference between stable and greatest need clients. Notably, greatest need patients in Siem Reap and Battambang had higher participation rates than their stable counterparts, while in Pursat and Kandal the opposite was true.

Table 21: Participation of PLHIV in Group Education Sessions at ART Clinic

Province	PLHIV Category	No	Yes	Don't Know/Don't Remember	P value
Battambang	GN (N = 199)	65.8%	34.2%	.0%	
	Stable (N = 73)	74.0%	26.0%	.0%	
	Total (N = 272)	68.0%	32.0%	.0%	
Kandal	GN (N = 86)	89.5%	10.5%	.0%	
	Stable (N = 38)	86.8%	13.2%	.0%	
	Total (N = 124)	88.7%	11.3%	.0%	
Pursat	GN (N = 154)	81.2%	18.2%	.6%	
	Stable (N = 58)	74.1%	25.9%	.0%	
	Total (N = 212)	79.2%	20.3%	.5%	
Siem Reap	GN (N = 164)	86.0%	14.0%	.0%	
	Stable (N = 66)	95.5%	4.5%	.0%	
	Total (N = 230)	88.7%	11.3%	.0%	
Total	GN (N = 603)	78.6%	21.2%	.2%	
	Stable (N = 235)	82.1%	17.9%	.0%	.273
	Total (N = 838)	79.6%	20.3%	.1%	

4.2. Reasons For Not Participating In Group Education In ART Clinic

Among PLHIV, the most common reason reported for not participating in group education sessions was not knowing about their existence (61%). See table 22. The second most common reason was that no group education sessions were offered at the clinic they attended (38%). A significant proportion of PLHIV (12%) stated that they had no time to participate in group education sessions.

Table 22: Reasons for not participating in Group Education in ART clinic

	Battambang (%)			Kandal (%)			Pursat (%)			Siem Reap (%)			Total (%)		
Reason	GN (N = 124)	Stable (N = 53)	Total (N = 177)	GN (N = 75)	Stable (N = 30)	Total (N = 105)	GN (N = 123)	Stable (N = 42)	Total (N = 165)	GN (N = 136)	Stable (N = 62)	Total (N = 198)	GN (N = 458)	Stable (N = 187)	Total (N = 645)
I did not know about this	56.5	62.3	58.2	58.7	73.3	62.9	50.4	61.9	53.3	72.1	64.5	69.7	59.8	64.7	61.2
No group education session conducted at ART Clinic	41.9	35.8	40.1	44.0	33.3	41.0	46.3	35.7	43.6	33.1	27.4	31.3	40.8	32.6	38.4
No time to participate	11.3	9.4	10.7	10.7	10.0	10.5	8.1	7.1	7.9	13.2	25.8	17.2	10.9	14.4	11.9
It is inconvenience to go to ART (Disable Person)	4.8	1.9	4.0	1.3	.0	1.0	2.4	2.4	2.4	1.5	.0	1.0	2.6	1.1	2.2
The meeting is finished while I am at ART Clinic	1.6	.0	1.1	2.7	.0	1.9	.8	2.4	1.2	4.4	1.6	3.5	2.4	1.1	2.0
Do not receive transportation support	1.6	.0	1.1	.0	.0	.0	.8	.0	0.6	.0	.0	.0	.7	.0	.5
Others	2.4	1.9	2.3	.0	.0	.0	.0	.0	.0	.7	.0	0.5	.9	.5	.8

4.3. Satisfaction of PLHIV to Group Education in ART clinic

Table 23 shows that among PLHIV that participated in group education sessions, nearly all (99.7%) said they were satisfied or very satisfied with this activity. No statistically significant difference was noted between greatest need and stable PLHIV.

Table 23: Satisfaction of PLHIV to Group Education in ART clinic

Province	PLHIV Category	Very unsatisfied	Unsatisfied	Neutral	Satisfied	Very satisfied	p value
Battambang	GN (N = 68)	.0%	1.5%	1.5%	27.9%	69.1%	
	Stable (N = 19)	.0%	.0%	.0%	21.1%	78.9%	
	Total (N = 87)	.0%	1.1%	1.1%	26.4%	71.3%	
Kandal	GN (N = 9)	.0%	.0%	.0%	22.2%	77.8%	
	Stable (N = 5)	.0%	.0%	.0%	.0%	100.0%	
	Total (N =14)	.0%	.0%	.0%	14.3%	85.7%	
Pursat	GN (N = 28)	3.6%	.0%	.0%	28.6%	67.9%	
	Stable (N = 15)	.0%	.0%	.0%	13.3%	86.7%	
	Total (N = 43)	2.3%	.0%	.0%	23.3%	74.4%	
Siem Reap	GN (N = 23)	.0%	.0%	.0%	13.0%	87.0%	
	Stable (N = 3)	.0%	33.3%	.0%	.0%	66.7%	
	Total (N = 26)	.0%	3.8%	.0%	11.5%	84.6%	
Total	GN (N = 128)	0.8%	0.8%	0.8%	25.0%	72.7%	
	Stable (N = 42)	0.0%	2.4%	0.0%	14.3%	83.3%	.486
	Total (N = 170)	0.6%	1.2%	0.6%	22.4%	75.3%	

4.4. Suggestions to improve the group meeting at ART Clinic

As shown in table 24, about one third (35%) of PLHIV suggested that to improve group education sessions, the focus of these meetings should be on the use of ARV's and their side-effects, while about 20% said that greater PLHIV participation would improve group education sessions.

Table 24: Suggestions to improve the group meeting at ART Clinic

	Battambang			Kandal			Pursat			Siem Reap			Total		
	GN (N = 189)	Stable (N = 66)	Total (N = 255)	GN (N = 80)	Stable (N = 30)	Total (N = 110)	GN (N = 139)	Stable (N = 55)	Total (N = 194)	GN (N = 142)	Stable (N = 60)	Total (N = 202)	GN (N = 550)	Stable (N = 211)	Total (N = 761)
No suggestion	47.1%	47.0%	47.1%	52.5%	50.0%	51.8%	46.0%	40.0%	44.3%	56.3%	53.3%	55.4%	50.0%	47.4%	49.3%
PLHIV should participate actively in the group education session regularly	24.3%	21.2%	23.5%	18.8%	13.3%	17.3%	21.6%	36.4%	25.8%	10.6%	16.7%	12.4%	19.3%	22.7%	20.2%
Group education should focus on the use of ARV and its side effect	34.4%	33.3%	34.1%	32.5%	40.0%	34.5%	38.8%	34.5%	37.6%	35.2%	28.3%	33.2%	35.5%	33.2%	34.8%
During group education, privacy should be considered	3.7%	7.6%	4.7%	11.3%	6.7%	10.0%	3.6%	1.8%	3.1%	7.7%	6.7%	7.4%	5.8%	5.7%	5.8%
Personal hygiene	.5%	.0%	0.4%				.7%	.0%	0.5%	.0%	.0%	.0%	.5%	.5%	.5%
Taking care of their health	.0%	.0%	.0%	1.3%	3.3%	1.8%	1.4%	.0%	1.0%	.0%	.0%	.0%	.4%	.5%	.4%
Providers should be friendly	.0%	.0%	.0%	.0%	.0%	.0%	1.4%	.0%	1.0%	.7%	.0%	0.5%	.4%	.0%	.3%
PLHIV Should join group education session	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	1.4%	1.7%	1.5%	1.1%	2.4%	1.4%
Other	1.6%	3.0%	2.0%	1.3%	3.3%	1.8%	.7%	.0%	0.5%	.7%	3.3%	1.5%	.5%	.0%	.4%

5. PLHIV adherence to ART

5.1. PLHIV that missed any medication in the last 2 months

As shown in table 25, only 3.5% of PLHIV reported missing any ARV medication in the previous 2 months, with no statistically significant differences noted between greatest need and stable PLHIV.

Table 25: PLHIV have ever missed any medication in the last 2 months

Province	PLHIV Category	No	Yes	P value
Battambang	GN (N = 199)	96.5%	3.5%	
	Stable (N = 73)	98.6%	1.4%	
	Total (N = 272)	97.1%	2.9%	
Kandal	GN (N = 86)	95.3%	4.7%	
	Stable (N = 38)	94.7%	5.3%	
	Total (N = 124)	95.2%	4.8%	
Pursat	GN (N = 154)	98.1%	1.9%	
	Stable (N = 58)	98.3%	1.7%	
	Total (N = 212)	98.1%	1.9%	
Siem Reap	GN (N = 164)	95.1%	4.9%	
	Stable (N = 66)	95.5%	4.5%	
	Total (N = 230)	95.2%	4.8%	
Total	GN (N = 603)	96.4%	3.6%	.297
	Stable (N = 235)	97.0%	3.0%	
	Total (N = 838)	96.5%	3.5%	

5.2. The main reason for having missed medication

Table 26 shows that of the small number of PLHIV that missed a medication in the previous two months (29 of 838 PLHIV), the most common reason was "being busy with other things" (48%), the second most common reason was simply forgetting to take the medication (38%), and a significant proportion (21%) said they missed taking medication because they were away from home.

Table 26: The main reason for having missed your medication

Reasons	Battambang			Kandal			Pursat			Siem Reap			Total		
	GN PLHIV	Stable PLHIV	Total	GN PLHIV	Stable PLHIV	Total	GN PLHIV	Stable PLHIV	Total	GN PLHIV	Stable PLHIV	Total	GN PLHIV	Stable PLHIV	Total
Away from home	28.6%	100%	37.5%					100%	25.0%	.0%	66.7%	18.2%	9.1%	57.1%	20.7%
Being busy with other things	57.1%	100%	62.5%	25.0%	50.0%	33.3%	33.3%	100%	50.0%	25.0%	100%	45.5%	36.4%	85.7%	48.3%
Simply Forgot	42.9%		37.5%	50.0%	.0%	33.3%	66.7%	.0%	50.0%	25.0%	66.7%	36.4%	40.9%	28.6%	37.9%
Felt like the drug was toxic/harmful	28.6%		25.0%							25.0%		18.2%	18.2%		13.8%
Depressed				.0%	50.0%	16.7%								14.3%	3.4%
Ran out of pills				25.0%	.0%	16.7%		100%	25.0%	12.5%		9.1%	4.5%	14.3%	6.9%
Just delivered baby				.0%	50.0%	16.7%							13.6%		10.3%
Feeling sick							33.3%		25.0%	25.0%		18.2%	9.1%	14.3%	10.3%
No money to pay for transportation to ART clinic								100%	25.0%				4.5%		3.4%
To avoid side effects										12.5%	33.3%	18.2%		14.3%	3.4%
Confusion of medicines										12.5%		9.1%		14.3%	3.4%
Total	7	1	8	4	2	6	3	1	4	8	3	11	22	7	29

6. Village Saving and Loan service

6.1. Participation of PLHIV in Village Saving and Loan (VSL) group meeting in the past year

Overall, only 16% of PLHIV participated in VSL groups in the previous year (17% of greatest need PLHIV and 12% of stable PLHIV). The highest participation rates in VSL groups were in Pursat (22%) and Battambang (19%), and the lowest participation rates were in Siem Reap (10%) and Kandal (7%). See table 27.

Table 27: Participation of PLHIV in Village Saving and Loan (VSL) group meeting in the past year

Province	PLHIV Category	No	Yes
Battambang	GN (N = 199)	80.4%	19.6%
	Stable (N = 73)	83.6%	16.4%
	Total (N = 272)	81.3%	18.8%
Kandal	GN (N = 86)	90.7%	9.3%
	Stable (N = 38)	97.4%	2.6%
	Total (N = 124)	92.7%	7.3%
Pursat	GN (N = 154)	76.6%	23.4%
	Stable (N = 58)	82.8%	17.2%
	Total (N = 212)	78.3%	21.7%
Siem Reap	GN (N = 164)	88.4%	11.6%
	Stable (N = 66)	92.4%	7.6%
	Total (N = 230)	89.6%	10.4%
Total	GN (N = 603)	83.1%	16.9%
	Stable (N = 235)	88.1%	11.9%
	Total (N = 838)	84.5%	15.5%

	Value	p value
Odds Ratio for timeliness of Last Visit to Pre-ART/ART Clinic	.649	
Likelihood Ratio	0.714	0.398

6.2. Reasons for not participating in VSL group

Table 28 shows that the most common reasons for not participating in VSL groups was that there was no local VSL group (50%), or that PLHIV were not informed about VSL groups (37%). Significant proportions of PLHIV also reported that they did not have any money for saving (21%) or that they were too busy to participate in a VSL group (12%).

Table 28: Reasons for not participating in VSL groups

	Battambang			Kandal			Pursat			Siem Reap			Total		
	GN	Stable	Total	GN	Stable	Total	GN	Stable	Total	GN	Stable	Total	GN	Stable	Total
No VSL Group	46.9%	36.1%	43.9%	59.0%	67.6%	61.7%	49.2%	54.2%	50.6%	47.6%	50.8%	48.5%	49.5%	50.2%	49.7%
I have never been informed about VSL Group	26.3%	36.1%	29.0%	50.0%	32.4%	44.3%	27.1%	29.2%	27.7%	48.3%	45.9%	47.6%	36.5%	36.7%	36.6%
I am busy	9.4%	16.4%	11.3%	7.7%	8.1%	7.8%	12.7%	16.7%	13.9%	14.5%	14.8%	14.6%	11.4%	14.5%	12.3%
No money for saving	31.3%	24.6%	29.4%	11.5%	8.1%	10.4%	25.4%	14.6%	22.3%	18.6%	6.6%	15.0%	23.2%	14.0%	20.5%
Do not trust VSL Group	6.3%	8.2%	6.8%	1.3%	.0%	0.9%	9.3%	8.3%	9.0%	3.4%	4.9%	3.9%	5.4%	5.8%	5.5%
My house is very far from the VSL group	1.3%	1.6%	1.4%	1.3%	.0%	0.9%	5.9%	10.4%	7.2%	2.8%	1.6%	2.4%	2.8%	3.4%	3.0%
VSL was discharged for years	3.1%	8.2%	4.5%	.0%	.0%	.0%	2.5%	4.2%	3.0%	.7%	.0%	0.5%	1.8%	3.4%	2.3%
Sickness	.6%	.0%	0.5%	.0%	.0%	.0%	.0%	2.1%	0.6%	.7%	.0%	0.5%	0.4%	0.5%	0.4%
Save money with VSL group for long time, then, those money disappear	1.3%	1.6%	1.4%	.0%	2.7%	0.9%	1.7%	2.1%	1.8%	.7%	.0%	0.5%	1.0%	1.4%	1.1%
Member (Borrowers) did not pay back to the group	1.3%	1.6%	1.4%	.0%	.0%	.0%	.8%	.0%	0.6%	.7%	1.6%	1.0%	0.8%	1.0%	0.8%
Other	3.1%	1.6%	2.7%	1.3%	.0%	0.9%	.0%	.0%	.0%	1.4%	.0%	1.0%	1.6%	0.5%	1.3%

6.3. Reasons for participating in VSL groups

Table 29 shows the reasons given by PLHIV for participating in VSL groups. Among the 16% of PLHIV that participated in VSL groups, the majority (64%) reported that VSL groups were a good way to "help each other", and nearly half said that the subgroups were a good way of saving money (47%) or that VSL groups were an easy way to borrow money with a low interest rate (45%). 40% of PLHIV that participated in a VSL groups also said that these groups were a good way for PLHIV to get support, and nearly one quarter (24%) said they participated in a VSL groups because they were introduced to them by CSV.

Table 29: Reasons for participating in VSL group

	Battambang			Kandal			Pursat			Siem Reap			Total		
	GN	Stable	Total	GN	Stable	Total	GN	Stable	Total	GN	Stable	Total	GN	Stable	Total
Easy to borrow with low interest rate	56.4%	41.7%	52.9%	.0%	100.0%	11.1%	50.0%	40.0%	47.8%	36.8%	40.0%	37.5%	46.1%	42.9%	45.4%
I was introduced by CSV	10.3%	16.7%	11.8%	62.5%	100.0%	66.7%	22.2%	10.0%	19.6%	42.1%	40.0%	41.7%	24.5%	21.4%	23.8%
Could help each other	51.3%	50.0%	51.0%	87.5%	100.0%	88.9%	61.1%	70.0%	63.0%	84.2%	80.0%	83.3%	63.7%	64.3%	63.8%
VSL is a good way of saving money	38.5%	50.0%	41.2%	75.0%	.0%	66.7%	41.7%	60.0%	45.7%	47.4%	80.0%	54.2%	44.1%	57.1%	46.9%
VSL is a good way for PLHIV to get support	23.1%	33.3%	25.5%	37.5%	.0%	33.3%	47.2%	30.0%	43.5%	57.9%	100.0%	66.7%	39.2%	42.9%	40.0%
Can borrow money for doing income generation	7.7%	.0%	5.9%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	2.9%	.0%	2.3%
Other	7.7%	8.3%	7.8%	.0%	.0%	.0%	2.8%	.0%	2.2%	.0%	.0%	.0%	3.9%	3.6%	3.8%

6.4. Importance of VSL to PLHIV in relation to HIV support

Table 30 shows the perspectives of PLHIV on the importance of VSL in HIV support. Overall, 88% of PLHIV that participated in VSL groups thought that VSL were important or very important in this respect, with a larger proportion of greatest need PLHIV (90%) than stable PLHIV (79%) stating this. There was no significant difference between greatest need PLHIV and stable PLHIV, p = .051. There was no significant different between participation in VSL and timeliness of last visit to ART clinic, p = 0.641

Table 30: Importance of VSL to PLHIV in relation to HIV support

Province	PLHIV Category	Very Unimportant	Unimportant	Neutral	Important	Very Important	P value
Battambang	GN	.0%	5.1%	2.6%	25.6%	66.7%	
	Stable	.0%	.0%	8.3%	41.7%	50.0%	
	Total	.0%	3.9%	3.9%	29.4%	62.7%	
Kandal	GN	.0%	.0%	25.0%	50.0%	25.0%	
	Stable	.0%	.0%	100.0%	.0%	.0%	
	Total	.0%	.0%	33.3%	44.4%	22.2%	
Pursat	GN	.0%	.0%	11.1%	19.4%	69.4%	
	Stable	10.0%	.0%	10.0%	30.0%	50.0%	
	Total	2.2%	.0%	10.9%	21.7%	65.2%	
Siem Reap	GN	.0%	.0%	5.3%	36.8%	57.9%	
	Stable	.0%	.0%	40.0%	20.0%	40.0%	
	Total	.0%	.0%	12.5%	33.3%	54.2%	
Total	GN	.0%	2.0%	7.8%	27.5%	62.7%	.051
	Stable	3.6%	.0%	17.9%	32.1%	46.4%	
	Total	.8%	1.5%	10.0%	28.5%	59.2%	

6.5. Importance of VSL to PLHIV in relation to financial support

Table 31 shows the perspectives of PLHIV on the importance of VSL in financial support. The vast majority of PLHIV (95%) thought VSL were important or very important for financial support. There was no significant different between greatest need PLHIV and stable PLHIV, p = 0.231.

Table 31: Importance of VSL to PLHIV in relation to financial support

Province	PLHIV Category	Unimportant	Neutral	Important	Very Important	P value
Battambang	GN (39)	2.6%	7.7%	28.2%	61.5%	
	Stable (12)	.0%	8.3%	33.3%	58.3%	
	Total (51)	2.0%	7.8%	29.4%	60.8%	
Kandal	GN (8)	.0%	.0%	75.0%	25.0%	
	Stable (1)	.0%	.0%	.0%	100.0%	
	Total (9)	.0%	.0%	66.7%	33.3%	
Pursat	GN (36)	.0%	2.8%	19.4%	77.8%	
	Stable (10)	.0%	.0%	60.0%	40.0%	
	Total (46)	.0%	2.2%	28.3%	69.6%	
Siem Reap	GN (19)	.0%	.0%	36.8%	63.2%	
	Stable (5)	.0%	20.0%	40.0%	40.0%	
	Total (24)	.0%	4.2%	37.5%	58.3%	
Total	GN (102)	1.0%	3.9%	30.4%	64.7%	.231
	Stable (28)	0.0%	7.1%	42.9%	50.0%	
	Total (130)	0.8%	4.6%	33.1%	61.5%	

7. Comparison of New CBPCS Approach with Previous Approach

7.1. Comparison of New CBPCS Approach with Previous Approach

Overall, more PLHIV thought the old approach to support was better than the new approach, with 36% stating this, while 22% of PLHIV thought the new approach was better than the old approach. Only among stable patients in Siem Reap was there a larger proportion of PLHIV that believed the new approach was better than the old one. 42% of all PLHIV believed there was either no difference between the two approaches (29%) or that they didn't know if there was any difference between the two (13%). See table 32. No appreciable difference was noted between greatest need and stable PLHIV.

Table 32: Comparison of New CBPCS Approach with Previous Approach

Province	PLHIV Category	New approach is better than old approach	Old approach is better than new approach	No different	Don't know
Battambang	GN (199)	18.6%	35.7%	31.7%	14.1%
	Stable (73)	21.9%	46.6%	21.9%	9.6%
	Total (272)	19.5%	38.6%	29.0%	12.9%
Kandal	GN (86)	20.9%	34.9%	29.1%	15.1%
	Stable (38)	18.4%	39.5%	36.8%	5.3%
	Total (124)	20.2%	36.3%	31.5%	12.1%
Pursat	GN (154)	24.0%	39.6%	26.6%	9.7%
	Stable (58)	29.3%	43.1%	20.7%	6.9%
	Total (212)	25.5%	40.6%	25.0%	9.0%
Siem Reap	GN (164)	24.4%	29.9%	31.1%	14.6%
	Stable (66)	24.2%	21.2%	36.4%	18.2%
	Total (230)	24.3%	27.4%	32.6%	15.7%
Total	GN (603)	21.9%	35.0%	29.9%	13.3%
	Stable (235)	23.8%	37.4%	28.1%	10.6%
	Total (838)	22.4%	35.7%	29.4%	12.5%

7.2. Reasons for assessments of the two approaches

Among PLHIV that thought the new approach was better than the old approach, the most common reason was the perception that the quality of service at ART clinic was better, even though this was not an activity of CBPCS. Other common reasons were: 1) meetings conducted at ART clinic, 2) get transportation support to access ART on time, and 3) home visit conducted more often. Among PLHIV that thought the old approach was better than the new approach, the most common reason for this perception were: 1) loss of social and food support, 2) loss of transportation support to access ART on time, 3) loss of frequent home visits, and 4) loss of self-help group meetings.

Table 33: Reasons for assessments of the two approaches

		Battambang	Kandal	Pursat	Siem Reap	Total
New approach is better than old approach	I was not informed about the new model	2.0%	.0%	.0%	.0%	.5%
	Get transportation support to access ART on time	49.0%	36.0%	27.5%	26.8%	34.4%
	Quality of service at ART clinic is better	23.5%	68.0%	29.4%	55.4%	41.0%
	Home visit conducted more often	17.6%	28.0%	23.5%	25.0%	23.0%
	No self-help group meeting	5.9%	4.0%	2.0%	3.6%	3.8%
	Meeting conducted at ART clinic	33.3%	32.0%	52.9%	39.3%	40.4%
	Receive education	3.9%	8.0%	3.9%	1.8%	3.8%
	Easy to receive ARV drug and transportation support	2.0%	8.0%	3.9%	.0%	2.7%
	More frequency of meeting	.0%	.0%	3.9%	3.6%	2.2%
	Keep confidentiality	5.9%	.0%	.0%	.0%	1.6%
	Others	5.9%	4.0%	11.8%	3.6%	6.6%
		51	25	51	56	183
Old approach is better than new approach	I was not informed about the new model	6.9%	11.1%	8.2%	19.4%	10.5%
	Get transportation support to access ART on time	41.2%	15.6%	29.4%	24.2%	30.3%
	No more transportation support	13.7%	.0%	5.9%	.0%	6.5%
	Quality of service at ART clinic is better	5.9%	8.9%	3.5%	3.2%	5.1%
	Home visit conducted more often	6.9%	8.9%	10.6%	16.1%	10.2%
	No self-help group meeting	7.8%	17.8%	9.4%	4.8%	9.2%
	The process of getting transportation support is late and complex	2.0%	.0%	1.2%	1.6%	1.4%
	Social and food support	50.0%	46.7%	45.9%	40.3%	46.3%
	Receive education	.0%	.0%	4.7%	3.2%	2.0%
	Easy to receive ARV drug and transportation support	2.0%	.0%	3.5%	.0%	1.7%
	More frequency of meeting	2.0%	8.9%	5.9%	21.0%	8.2%
	Keep confidentiality	2.0%	.0%	.0%	.0%	.7%
	Others	4.9%	4.4%	11.8%	8.1%	7.5%
		102	45	85	62	294
No different	I was not informed about the new model	1.4%	.0%	.0%	.0%	.4%
	Get transportation support to access ART on time	16.2%	.0%	12.2%	2.8%	8.6%
	Could not differentiate	81.1%	100.0%	87.8%	98.6%	90.9%
	Others	8.1%	.0%	2.0%	.0%	3.0%
		74	37	49	72	232
Don't know	I was not informed about the new model	51.5%	73.3%	66.7%	76.5%	66.0%
	Could not differentiate	57.6%	33.3%	33.3%	23.5%	38.0%
		33	15	18	34	100

8. Other suggestions to improve the CBPCS approach

Numerous suggestions were given by PLHIV to improve CBPCS, as displayed in table 34. One third (34%) of all PLHIV suggested that confidentiality should be improved, and 21% suggested that group education sessions should be conducted regularly. PLHIV also suggested additional support for transportation (11%/12%), social and food (10%/16%), school (25%).

Table 34: Suggestions to improve the CBPCS approach

	Battambang	Kandal	Pursat	Siem Reap	TOTAL
No suggestion	14.0%	5.6%	12.7%	7.8%	10.7%
Keep confidentiality	34.9%	41.9%	31.6%	30.9%	34.0%
Sharing new information	8.5%	22.6%	7.1%	8.3%	10.1%
Group education/counseling should be conducted regularly	21.7%	16.9%	23.6%	20.0%	21.0%
Continue supporting PLHIV	4.0%	5.6%	3.3%	9.1%	5.5%
NGO staff should get paid on time	.4%	.0%	.9%	2.2%	1.0%
PLHIV should follow Doctor advice	13.2%	10.5%	9.4%	10.0%	11.0%
Vocational Training	11.4%	9.7%	11.8%	5.2%	9.5%
School support	26.8%	19.4%	21.7%	28.3%	24.8%
Provide latrine	.7%	2.4%	.9%	.9%	1.1%
Provide Free treatment for all kind of diseases to PLHIV	1.8%	.8%	7.1%	1.3%	2.9%
Provide bicycle to PLHIV	1.5%	.0%	2.4%	1.3%	1.4%
Organize VSL group	1.5%	1.6%	4.2%	1.3%	2.1%
Non partisanship	.4%	.8%	.0%	.4%	.4%
More meeting	.0%	1.6%	.0%	1.7%	.7%
Provide socio-economic support	.0%	.0%	.5%	1.3%	.5%
Income generation	.4%	1.6%	1.9%	.9%	1.1%
Do not discriminate against clients	.4%	1.6%	.0%	.9%	.6%
Do not asking money from PLHIV	.4%	.0%	.9%	.9%	.6%
Get ARV drug faster	1.8%	2.4%	2.8%	1.7%	2.1%
Conduct home visit regularly	.4%	1.6%	.5%	1.3%	.8%
ID Poor Card should be provided	.4%	8.1%	.0%	.0%	1.3%
Transport Support	42.3%	61.3%	46.7%	46.5%	47.4%
Food Support	24.6%	43.5%	33.5%	37.0%	33.1%
Others	8.8%	8.1%	8.5%	9.1%	8.7%

9. Associations with Appointment Timeliness

1.1. Timeliness of Last Visit to ART Clinic

Timeliness of Last Visit to ART Clinic by multiple comparisons

Analysis of the data on timeliness for the last visit to clinic showed that there was no statistically significant difference between greatest need and stable PLHIV (95.7% and 95.3%, respectively). See table 35.

Table 35: Frequency of Timeliness of Last Visit to ART Clinic disaggregated by Provinces

	On time as appointment	p value
Battambang	95.6%	
Kandal	96.8%	
Pursat	99.1%	
Siem Reap	91.7%	
Total	95.6%	
GN	95.7%	.815
Stable	95.3%	

PLHIV in Siem Reap, at 92%, were less likely to be on time than those in Battambang, Kandal, or Pursat (96-99%), p = 0.000 to 0.036. See table 36.

Table 36: Multiple comparisons of Timeliness of Last Visit to ART Clinic between provinces

Provinces		Mean Difference	Std. Error	p value
Siem Reap	Battambang	.04*	.018	.036**
	Kandal	.05*	.023	.027**
	Pursat	.07*	.019	.000***

*. The mean difference is significant at the .05 level.

Table 37 shows that PLHIV that had reported having ever missed reimbursement were less likely to have not been on time for their last clinic appointment than those that reported never having missed reimbursement, 5.2% versus 1.3%, respectively. This difference was statistically significant, p = 0.039.

Table 37: Relationship between Timeliness of Last Visit to ART Clinic and the experience not receiving reimbursement of transportation to Pre-ART Clinic

		Received no reimbursement of transportation to Pre-ART Clinic		Total	p value
		Never received no reimbursement	ever received no reimbursement		
Timeliness of Last Visit to ART Clinic	On time As appointment	98.7%	94.8%	95.8%	.039
	Not on time as appointment	1.3%	5.2%	4.2%	
	Total	100.0%	100.0%	100.0%	

Table 38 shows that PLHIV that had reported having ever missed medication in the previous two months were significantly less likely to have not been on time for their last clinic appointment than those that reported not missed medication in the previous two months, 3.6% versus 27.6%, respectively. This difference was statistically significant, p = 0.000.

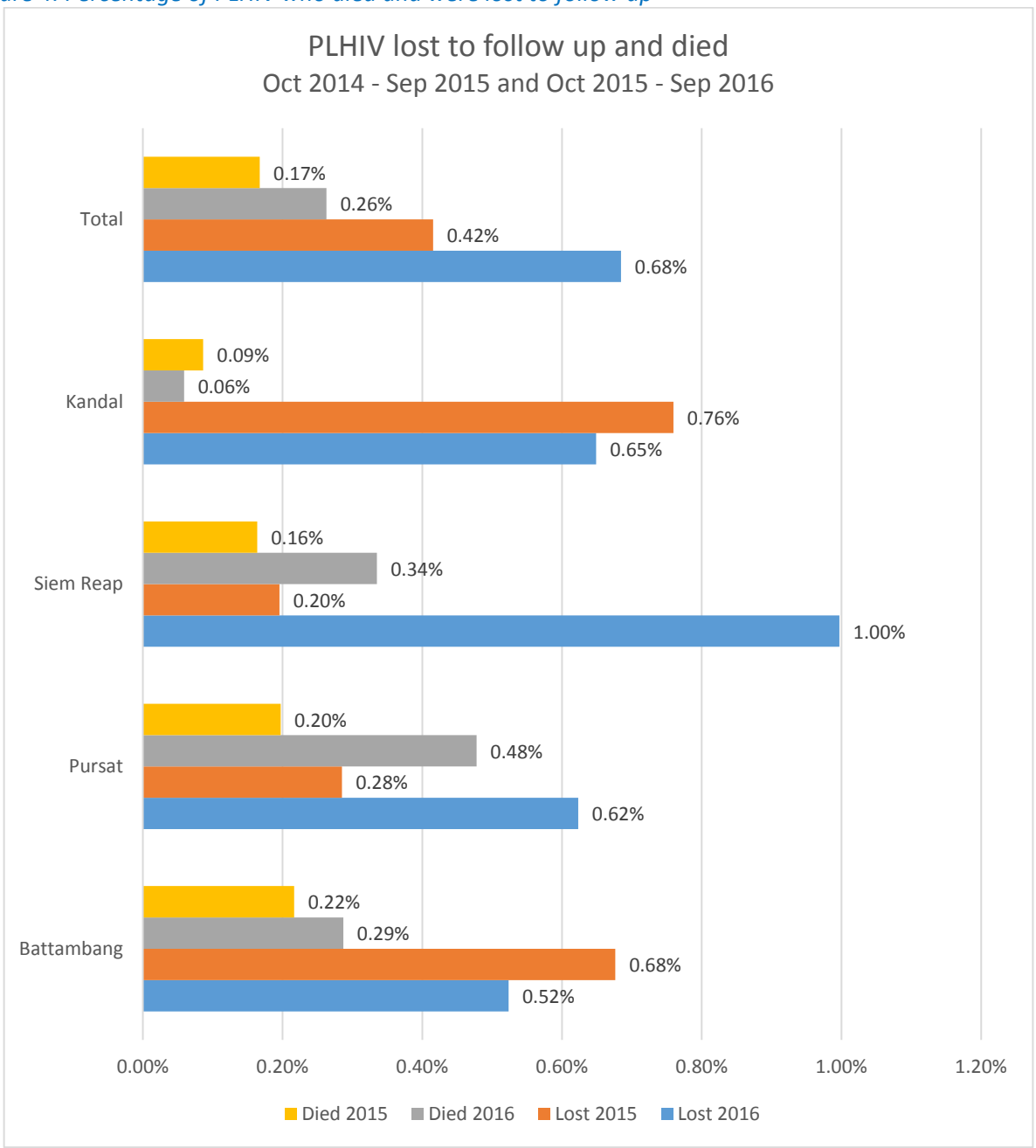
Table 38: Statistical analysis between Timeliness of Last Visit to ART Clinic and missed medication in the last two months

		Missed medication in the last two months		Total	p value
		No	Yes		
Timeliness of Last Visit to ART Clinic	On time As appointment	96.4%	72.4%	95.6%	.000
	Not on time as appointment	3.6%	27.6%	4.4%	
	Total	100.0%	100.0%	100.0%	

10. Deaths and losses to follow up

Based on data provided by the national program, figure 4 shows that loss to follow-up and deaths were very low across the four locations. Overall, deaths were higher in 2016 than in 2015 (0.26% and 0.17%, respectively) as were losses to follow up (0.68% and 0.42%, respectively). In Kandal and Battambang, losses to follow up decreased (0.76% to 0.65% and 0.68% to 0.52%, respectively), while losses to follow up increased in Siem Reap and Pursat (0.20% to 1.00% and 0.28% to 0.62%, respectively). Data disaggregated by greatest need and stable were not available from the national database.

Figure 4: Percentage of PLHIV who died and were lost to follow up



11. Study Participant Characteristics

11.1. Positions and Locations of Respondents

Table 39 shows that of the 67 CSV interviewed, the largest number (31) were from Battambang, and similar numbers were male (32) and female (35).

Table 39: Positions and Locations of Respondents

Position	Sex	Battambang	Kandal	Pursat	Siem Reap	Total
CSV	Female	17	2	6	10	35
	Male	14	4	9	5	32
	Total	31	6	15	15	67
CMS	Female	1		0	1	2
	Male	0	N/A	2	0	2
	Total	1		2	1	4

11.2. CBPCS activities carried out by CSV

Table 40 shows that of 15 responsibilities of CSV under the new CBPCS model, there was great variation among locations, but overall incomplete performance of these activities currently. The vast majority of CV reported engaging in: patient file management and record keeping (85%), preparing lists of PLHIV for appointment (97%), and facilitating group counseling and education sessions at the pre-ART/ART clinic (66%). Very few CV (1.5%) reported engaging in either follow up of PLHIV's regular testing for CD4 and/or viral load or referring PLHIV to relevant health outside ART (e.g. SRH/FP, PMTCT, STI, TB). Only in Battambang did the CSV contact partners of new cases. Using a cutoff of 50% of CSV reporting performing these tasks, CSV in Battambang only met this criterion for 3 activities, CSV in Kandal for 7 activities, CSV in Pursat for 4 tasks, and CSV in Siem Reap for 6 activities.

Table 40: CBPCS activities carried out by CSV

CSV Activities	Battambang	Kandal	Pursat	Siem Reap	Total
Follow up newly identified reactive and refer to VCCT for confirmation	38.7%	33.3%	13.3%	26.7%	29.9%
Participate in meetings with CSO	45.2%	0.0%	20.0%	60.0%	38.8%
Organize VSL Group	38.7%	50.0%	26.7%	40.0%	37.3%
Patient file management and record keeping	83.9%	100.0%	80.0%	86.7%	85.1%
Prepare list of PLHIV for appointment	96.8%	100.0%	100.0%	93.3%	97.0%
Facilitate group (monthly) counseling and education sessions at the pre-ART/ART clinic	71.0%	83.3%	46.7%	66.7%	65.7%
Report PLHIV appointment data to the nurse counselor CMP at the pre-ART/ART clinic and to CSO	45.2%	33.3%	13.3%	66.7%	41.8%
Prepare and bring transportation support money to PLHIV	45.2%	66.7%	60.0%	60.0%	53.7%
Contact partners of new cases	32.3%	0.0%	13.3%	0.0%	17.9%
Referral to Pre-ART/ART clinic for enrolment	48.4%	50.0%	40.0%	20.0%	40.3%
Monitor all patients on ART to ensure their adherence	19.4%	0.0%	13.3%	6.7%	13.4%
Conduct home visits/support	25.8%	33.3%	13.3%	20.0%	22.4%
Provide individual counseling and education	41.9%	50.0%	86.7%	0.0%	43.3%
Follow up PLHIV's regular testing for CD4 and/or viral load	0.0%	0.0%	0.0%	6.7%	1.5%
Refer PLHIV to relevant health and non-health services, including SRH/FP, PMTCT, STI, TB	0.0%	0.0%	0.0%	6.7%	1.5%

Home visits and VSL Group conducted by CSV

11.3. Number of home visits conducted by CSV during the last month

Table 41 shows that CSV in Kandal reported performing an average of 7.5 home visits in the previous month, which was a higher number than the average number of home visits conducted by CSV in Battambang, Pursat, and Siem Reap (5.5, 5.2, and 5.6, respectively). The mean number of PLHIV served by CSV across the four locations was similar, ranging from 42 in Battambang and Pursat, to 44 in Kandal, to 48 in Siem Reap.

Table 41: Number of home visits and number of PLHIV received care and support conducted by each CSV during the last month

	Battambang (N = 31)		Kandal (N = 6)		Pursat (N = 15)		Siem Reap (N = 15)		Total (N = 67)	
	# of home visit	# of PLHIV received care and support	# of home visit	# of PLHIV received care and support	# of home visit	# of PLHIV received care and support	# of home visit	# of PLHIV received care and support	# of home visit	# of PLHIV received care and support
Mean	5.5	42	7.5	44	5.2	42	5.6	48	5.6	43
Minimum	0	17	4	30	0	13	2	22	0	13
Maximum	16	91	12	70	15	96	15	104	16	104

11.4. Activities included in VSL group meetings

Table 42 shows that the most comprehensive set of activities at a VSL group meeting for PLHIV occurred in Battambang, while Siem Reap had the least comprehensive set of activities.

Table 42: Activities included in VSL group meetings as reported by CSV

	Battambang	Pursat	Siem Reap	Total
Provide health education message to group	7	1	1	9
Monitor patients on ART to ensure their adherence	8	2	1	11
Refer PLHIV to relevant health and non-health services, including SRH/FP, PMTCT, STI, TB	1	1	1	3
Refer suspected cases to VCCT	2	0	0	2
Advantages of VSL group	5	3	0	8
Collect money	4	3	0	7
Provide loans to members	3	3	0	6
Present financial reports to group members	4	1	0	5
Other	1	0	0	1

11.5. Importance of VSL for PLHIV in relation to HIV support and Financial Support

All CSV believed that VSL groups provided helpful or very helpful financial and HIV support PLHIV. See table 43.

Table 43: Importance of VSL for PLHIV in relation to HIV support and Financial Support

	Battambang		Pursat		Siem Reap		Total	
	HIV Support	Finance Support	HIV Support	Finance Support	HIV Support	Finance Support	HIV Support	Finance Support
Very unhelpful	0	0	0	0	0	0	0	0
Unhelpful	0	0	0	0	0	0	0	0
Neutral (neither unhelpful or helpful)	0	0	0	0	0	0	0	0
Helpful	2	1	1	1	0	0	3	2
Very helpful	8	9	3	3	1	1	12	13
Total	10	10	4	4	1	1	15	15

12. Criteria for selection of greatest need PLHIV

12.1. Knowledge of CSV on the criteria for selecting greatest need PLHIV

Across locations, there was significant in variation in the capacity of CSV to recall the nine criteria for selecting greatest need PLHIV. See table 44. Of the 67 respondents, 57 could recall that PLHIV identified as poor were greatest need, 33 recalled that HIV positive pregnant women were greatest need, and 32 recalled that members of sero-discordant couples were greatest need.

Table 44: Knowledge of CSV on the criteria for selecting greatest need PLHIV

	Battambang	Kandal	Pursat	Siem Reap	Total
PLHIV who have initiated ART in the previous 24 months	3	0	0	4	7
Newly identified reactive and/or diagnosed cases	10	0	3	3	16
PLHIV who have low treatment adherence (including stabilized PLHIV who becomes non-adherent)	11	1	2	4	18
PLHIV with identified as poor	26	6	12	13	57
Sero-discordant couples	12	0	6	14	32
HIV-positive key populations	9	1	4	4	18
HIV-positive pregnant women	17	2	4	10	33
HIV-positive children and adolescents	18	1	3	7	29
HIV-exposed infants	9	0	1	6	16
Total	31	6	15	15	67

Across locations, only 11 (16%) of the 67 CSV respondents could name more than five criteria that conferred greatest need status for PLHIV. See table 45.

Table 45: Knowledge of CSV on Criteria for selection of Greatest Need PLHIV

	Battambang	Kandal	Pursat	Siem Reap	Total
Can list up to 5 criteria for selecting GN PLHIV	23	6	14	13	56
Can list more than 5 criteria for selection of GN PLHIV	8	0	1	2	11
Total	31	6	15	15	67

12.2. Criteria for selection of GN that should be removed

Table 46 shows that among the existing greatest need criteria, most CSV (52 of 67) had no specific thoughts on which should be eliminated. However, nine (13%) CSV thought that PLHIV with low treatment adherence should be removed as a criterion on for greatest need status.

Table 46: Criteria for selection of GN that should be removed

	Battambang (N =31)	Kandal (N = 6)	Pursat (N = 15)	Siem Reap (N = 15)	Total
PLHIV who have initiated ART in the previous 24 months	1	0	0	1	2
Newly identified reactive and/or diagnosed cases	1	0	0	0	1
PLHIV who have low treatment adherence (including stabilized PLHIV who becomes non- adherent)	3	2	3	1	9
Sero-discordant couples	1	0	1	0	2
HIV-positive key populations	0	0	1	0	1
HIV-positive pregnant women	1	0	0	0	1
No ideas	24	4	11	13	52
Total	31	6	15	15	67

12.3. Criteria for selection of GN that should be added

Table 47 shows that CSV thought that greatest need status should be considered for PLHIV that have many other family members living with HIV (eight respondents), PLHIV who have an OI or serious health problem (nine respondents), and PLHIV from poor families (seven respondents).

Table 47: Criteria for selection of GN that should be added

	Battambang (N =31)	Kandal (N = 6)	Pursat (N = 15)	Siem Reap (N = 15)	Total
Family that have many PLHIV	6	2	0	0	8
PLHIV who has serious health problem	4	1	1	0	6
Poor family	3	1	1	2	7
PLHIV who had OI	0	1	1	1	3
No idea	6	1	7	7	21
Other	8	0	0	5	13
Total	25	6	10	15	56

13. The main challenges faced in the new CBPCS model

The main challenges encountered by CSV in implementing the new CBPCS model include inability to find PLHIV at home (59/67), PLHIV migrating to find jobs (35/67), far distances to travel to PLHIV homes (27/67), and PLHIV not having a phone number (24/67). See table 48.

Table 48: The main challenges you are facing in this new CBPCS model

	Battambang	Kandal	Pursat	Siem Reap	Total
Often cannot find PLHIV at home	26	5	13	15	59
PLHIV do not have phone number	9	1	8	6	24
PLHIV 's houses are far from my house	13	1	10	3	27
Many PLHIVs migrate to find jobs	19	3	7	6	35
Low incentive support	9	2	1	1	13
Stabilized PLHIV	4	1	1	2	8
Sometime PLHIV did not welcome me	1	1	0	1	3
Difficult to reach Hidden PLHIV	0	0	3	5	8
Difficult road	3	1	2	1	7
Other	7	0	2	1	10
Total	31	6	15	15	67

14. Effectiveness of CSV and CMS work in helping PLHIV under the new CBPCS model

Table 49 shows that the vast majority of CSV (58/67) and CMS (3/4) answered "yes" when asked whether they believed their efforts under the new CBPCS model were helping PLHIV.

Table 49: Effectiveness of CSV and CMS work in helping PLHIV under the new CBPCS model

	Battambang		Kandal		Pursat		Siem Reap		Total	
	CSV	CMS	CSV	CMS	CSV	CMS	CSV	CMS	CSV	CMS
Yes	26	0	4	n/a	15	2	14	1	58	3
No	4	1	1	n/a	0	0	2	0	7	1
Don't Know	1	0	1	n/a	0	0	0	0	2	0
Total	31	1	6	n/a	15	2	15	1	67	4

14.1. Reasons for saying their efforts under the new CBPCS model were not helping PLHIV

Table 50 shows that the most commonly cited reasons by CSV and CMS for saying that their work was not helping PLHIV was either that stable PLHIV did not receive transportation support under the new model, or that PLHIV received no welfare support.

Table 50: Reasons for saying their efforts under the new CBPCS model were not helping PLHIV

	Battambang		Kandal	Siem Reap	Total	
	CSV	CMS	CSV	CSV	CSV	CMS
Stable PLHIV did not receive transportation support to access to ART service	1	1	1	2	4	1
PLHIV receive no welfare supports (i.e. mosquito net, blanket, kettle, cooling container, pure water container)	1	0	0	2	3	0
More Greatest Need PLHIV	0	1	0	0	0	1
Rarely meet busy PLHIV	1	0	0	0	1	0
Less meeting	0	0	1	0	1	0
Don't Know	2	0	0	0	2	0
Total	4	1	1	2	7	1

14.2. Reasons for saying their efforts under the new CBPCS model were helping PLHIV

Table 51 shows that among CSV that believed their work under the new CBPCS model was helpful to PLHIV, the most common reasons cited were that their work helped PLHIV access health services and emotional support (31/58), that the new model involves PLHIV in their own care (30/58), that it allowed PLHIV to receive care and support from their families and neighbors (14/58) and that people newly testing for HIV receive transportation support (14/58).

Table 51: Reasons for saying their efforts under the new CBPCS model were helping PLHIV

	Battambang	Kandal	Pursat	Siem Reap	Total
CSV					
It allows PLHIV to receive care and support from their families and neighbors	8	2	1	3	14
PLHIV access to health services as well as emotional support	12	3	8	8	31
It involves PLHIV in their own care	12	3	6	9	30
PLHIV can manage many of the common diseases easily at home	3	1	2	1	7
It focuses on PLHIV's needs	3	1	2	2	8
It avoids unnecessary referrals or admissions to hospitals and institutions	3	0	0	0	3
New testers received transportation support for HIV testing	5	0	5	4	14
New case detection found	4	0	1	3	8
Provide education to PLHIV on ART adherence, personal hygiene, birth spacing	2	0	2	1	5
Provide vocational skills to PLHIV	1	0	1	0	2
Don't Know	1	0	1	0	2
Other	1	0	4	3	8
Total	26	4	15	13	58
CMS					
PLHIV access to health services as well as emotional support	0	0	2	1	3
It involves PLHIV in their own care	0	0	0	1	1
Total	0	0	2	1	3

15. CSV/CMS perceptions on PLHIV value of their work

Table 52 shows that all CSM interviewed believed their work was valued by PLHIV, and the vast majority of CSV (61/67) also believed their work was valued by PLHIV.

Table 52: CSV/CMS feel that their work is valued by PLHIV

		Battambang	Kandal	Pursat	Siem Reap	Total
CSV	No (N = 6)	0	1	1	4	6
	Yes (N = 61)	31	5	14	11	61
	Total	31	6	15	15	67
CSM	No (N = 6)	0	n/a	0	0	0
	Yes (N = 61)	1	n/a	2	1	4
	Total	1	n/a	2	1	4

15.1. Reasons for CSV saying they were not valued by PLHIV

Table 53 shows that among CSV that felt they were not valued by PLHIV most felt they were not valued by "better-off" PLHIV that did not want to be supported by the NGO, or that some PLHIV are "aggressive, stubborn, and resistant" to advice.

Table 53: The reasons for CSV saying they were not valued by PLHIV

	Kandal	Pursat	Siem Reap	Total
Don't feel much valued by the better-off PLHIV and they don't want to be supported by the NGO	1	0	3	4
Some PLHIV are aggressive, stubborn and resistant to my advice	1	1	2	4
Stable PLHIV do not want to meet me	0	0	1	1
Stable PLHIV who did not receive transportation support	0	0	1	1
Total	1	1	4	6

15.2. The reasons for CSV saying they were valued by PLHIV

Table 54 shows that among CSV that felt valued by PLHIV, the most common reasons given were that PLHIV valued their advice (44/61), PLHIV valued regular home visits (39/61), and PLHIV valued advice on ARV and adherence (37/61).

Table 54: The reasons for CSV saying they were valued by PLHIV

	Battambang	Kandal	Pursat	Siem Reap	Total
CSV					
They value my advice	22	4	9	9	44
Assist them with the timely ART service	17	3	6	5	31
Maintain confidentiality for all PLHIV	2	0	1	3	6
Make appointment with the poor PLHIV	5	1	0	1	7
Provide advice on ARV adherence	20	2	7	8	37
When visiting them at home regularly	18	4	8	9	39
Provide good collaboration when other NGO request to meet them	6	2	1	3	12
Because of my support, they always respect me (us)	15	3	6	4	28
Bring transportation support to PLHIV	0	1	5	0	6
PLHIV are friendly to me	2	0	0	0	2
Other	3	0	1	1	5
Total	31	5	14	11	61
CMS					
They value my advice	1		1	1	3
Assist them with the timely ART service	1		2	0	3
Provide advice on ARV adherence	1		0	1	2
Because of my support, they always respect me (us)	1		0	1	2
Other	0		2	0	2
Total	1		2	1	4

16. Satisfaction of CMS with new CBPCS model

16.1. Satisfaction of CMS with new responsibilities in the new CBPCS model

Table 55 shows that the vast majority of CSV were satisfied or very satisfied with their new responsibilities under the new CBPCS model (62/67), as were most CMS (3/4).

Table 55: Satisfaction of CMS with new responsibility in this CBPCS new model

	Battambang		Kandal	Pursat		Siem Reap		Total	
	CSV	CMS	CSV	CSV	CMS	CSV	CMS	CSV	CMS
Very unsatisfied	0	0	0	0	0	0	0	0	0
Unsatisfied	1	0	0	1	0	0	0	2	0
Neutral	3	0	0	0	0	0	0	3	0
Satisfied	7	0	2	6	1	3	0	18	1
Very satisfied	20	1	4	8	1	12	1	44	3
Total	31	1	6	15	2	15	1	67	4

16.2. Reasons for the satisfaction of CMS with responsibilities in the new CBPCS model

Table 56 shows that the most frequently cited reasons among CSV for their satisfaction under the new CBPCS model was that their work allowed them to assist PLHIV in adhering to antiretroviral therapy and be retained in care (50/67 and 49/67, respectively).

Table 56: Reasons to the satisfaction of CMS with responsibilities in the new CBPCS model

	Battambang	Kandal	Pursat	Siem Reap	Total
CSV					
Assist PLHIV to retention to ART	21	4	11	13	49
Encourage PLHIV to adhere to ART	20	5	11	14	50
My house is far from PLHIV house	3	0	1	0	4
My house is far from ART Clinic, so, I spent a lot of time for traveling to ART Clinic to organize group counseling/education to PLHIV	6	1	1	1	9
Stable PLHIV are angry to me	3	0	0	2	5
Not enough fuel for conducting home visit and follow up	1	0	1	0	2
Not enough resources (phone card) for communicating with PLHIV, especially PLHIV who are lost follow up	8	0	1	2	11
Understand our health and PLHIV health	1	0	0	1	2
Provide psychological support to PLHIV	0	1	1	0	2
Educate PLHIV on how to take care their health and have good nutrition	0	0	1	2	3
PLHIV are friendly	1	0	1	0	2
Contributed to nation	1	0	0	1	2
Assist PLHIV to access ART service	1	0	0	0	1
Other	8	1	4	3	16
Total	31	6	15	15	67
CSM					
Assist PLHIV to retention to ART	1	0	2	0	3
Encourage PLHIV to adhere to ART	1	0	2	0	3
My house is far from ART Clinic, so, I spent a lot of time for traveling to ART Clinic to organize group counseling/education to PLHIV	1	0	0	0	1
Assist PLHIV to access ART service	0	0	0	1	1
Other	0	0	1	0	1
Total	1	0	2	1	4

16.3. Satisfaction of CSV and CMS with the incentive provided

In terms of the satisfaction of CSV with the level of incentive provided, only 31/67 said they were satisfied or very satisfied, and 22/67 said they were unsatisfied or very unsatisfied. 12/67 were "neutral". Three of the four CMS were satisfied with their incentive and one was very unsatisfied. See table 57.

Table 57: Satisfaction of CSV and CMS with the provided incentive for compensation

	Battambang		Kandal	Pursat		Siem Reap		Total	
	CSV	CMS	CSV	CSV	CMS	CSV	CMS	CSV	CMS
Very unsatisfied	2	0	1	0	1	3	0	6	1
Unsatisfied	8	0	3	3	0	4	0	18	0
Neutral	6	0	0	4	0	2	0	12	0
Satisfied	12	1	1	8	1	4	1	25	3
Very satisfied	3	0	1	0	0	2	0	6	0
Total	31	1	6	15	2	15	1	67	4

17. CSV/CSM suggestions to improve their work

Suggestions from CSV and CSM to improve their work are presented in table 58. 72% of respondents suggested increasing the incentive for CSV/CSM, 25% suggested increasing fuel allocations for home visits, and 20% suggested increasing locations for phone cards to communicate with PLHIV. 41% suggested increasing training on the new model of CBPCS.

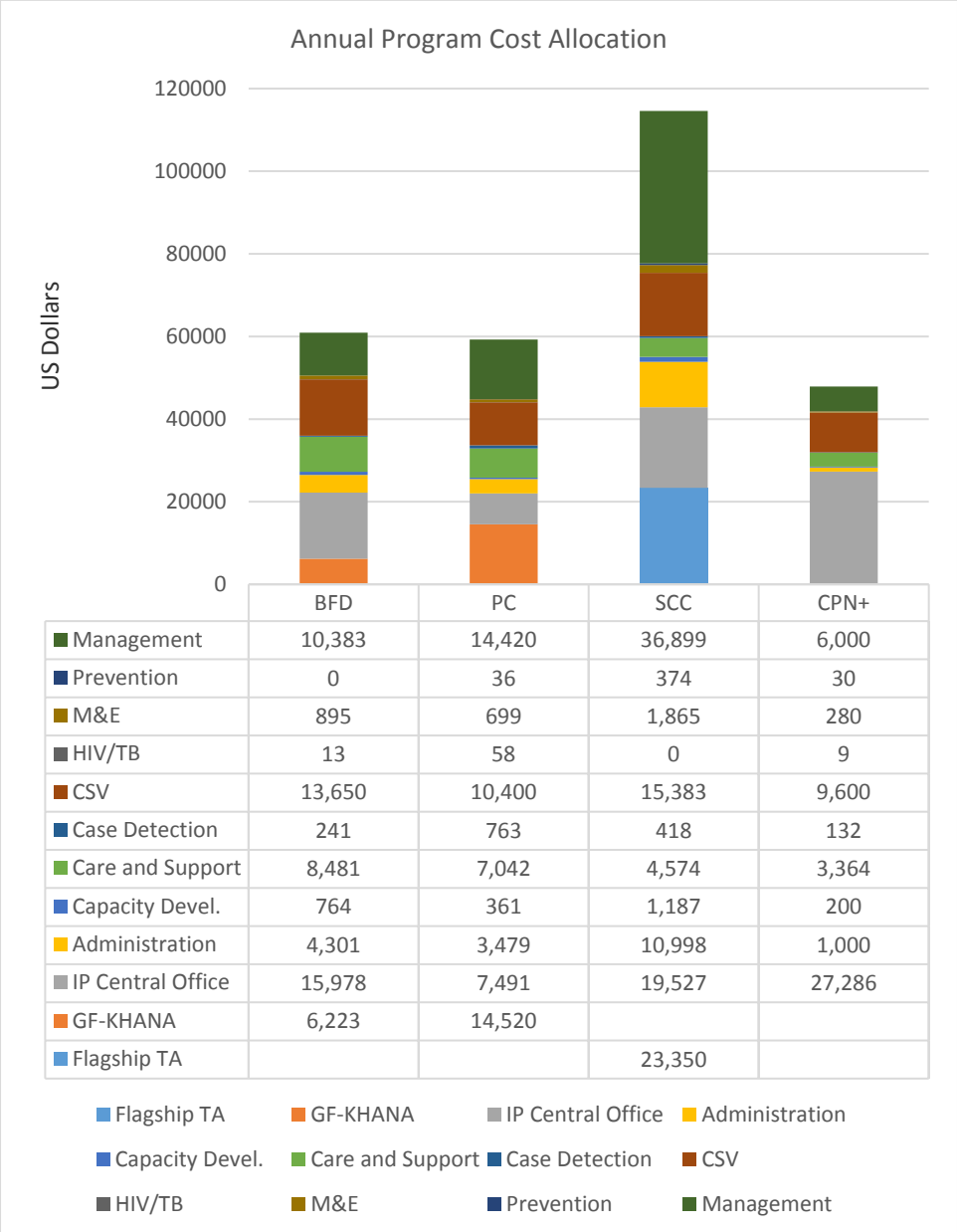
Table 58: CSV/CSM suggestions to improve their work

	Battambang (N =32)	Kandal (N = 6)	Pursat (N = 17)	Siem Reap (N = 16)	Total
Increase incentive for CSV/CSM	68.8%	83.3%	64.7%	81.3%	71.8%
Decrease the number of PLHIV to be responsible	15.6%	.0%	17.6%	6.3%	12.7%
Receive more training on the new model of CBPCS	46.9%	50.0%	23.5%	43.8%	40.8%
Receive more budget for fuel for conducting home visit	21.9%	50.0%	23.5%	25.0%	25.4%
Receive more money for phone card for communicating with PLHIV, especially with PLHIV who are living very far from my house	18.8%	50.0%	17.6%	12.5%	19.7%
Should provide transportation support to PLHIV regularly	.0%	16.7%	5.9%	.0%	2.8%
Provide transportation support to all PLHIV	6.3%	16.7%	.0%	18.8%	8.5%
Provide social support and food support to PLHIV	.0%	.0%	5.9%	12.5%	4.2%
NGO should provide bag , glove, raincoat and antibacterial soap	.0%	.0%	5.9%	12.5%	4.2%
Others	40.6%	33.3%	29.4%	12.5%	31.0%
Don't Know	3.1%	.0%	.0%	.0%	1.4%

9. Cost Allocation

As shown in figure 5, SCC had the highest total annual cost by a large margin ($114,574), compared to the other three implementers, whose total annual costs were about half that, totalling ($60,929) for BFD, ($59,268) for PC and ($47,901) for CPN+. This higher cost at SCC was largely because of significantly higher management costs and the cost associated with TA from Flagship.

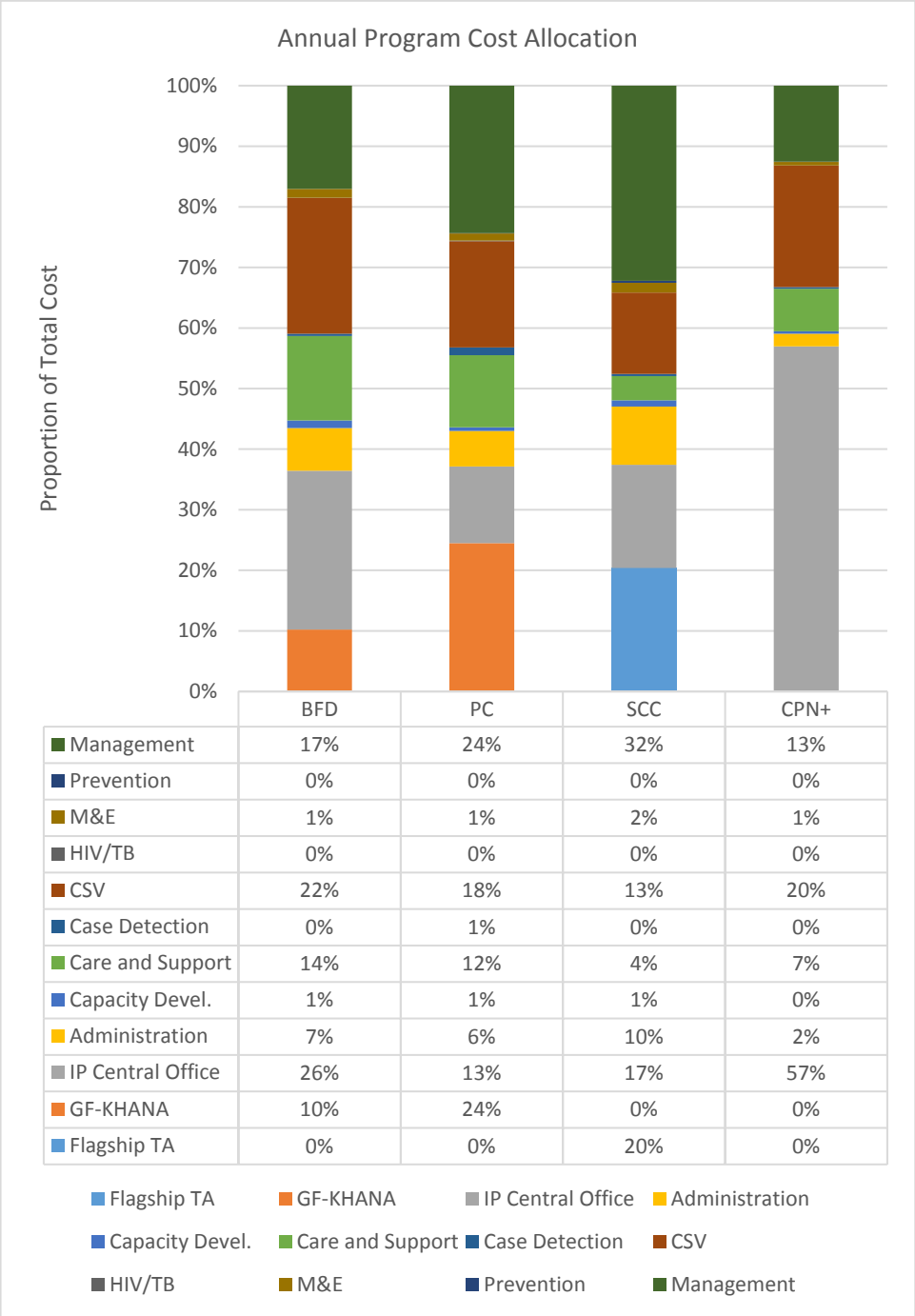
Figure 5: Cost allocation of program of each organization (in US$)



	BFD	PC	SCC	CPN+
Management	10,383	14,420	36,899	6,000
Prevention	0	36	374	30
M&E	895	699	1,865	280
HIV/TB	13	58	0	9
CSV	13,650	10,400	15,383	9,600
Case Detection	241	763	418	132
Care and Support	8,481	7,042	4,574	3,364
Capacity Devel.	764	361	1,187	200
Administration	4,301	3,479	10,998	1,000
IP Central Office	15,978	7,491	19,527	27,286
GF-KHANA	6,223	14,520		
Flagship TA			23,350	

As shown in figure 6, the proportions of costs accounted for by the various cost categories varies significantly across the four implementers. The highest proportional costs for management were for SCC (32%) and PC (22%). CSV costs accounted for a significant proportion of costs for each implementer, ranging from 13%-22%.

Figure 6: Cost allocation of program of each organization (In percentage)



	BFD	PC	SCC	CPN+
Management	17%	24%	32%	13%
Prevention	0%	0%	0%	0%
M&E	1%	1%	2%	1%
HIV/TB	0%	0%	0%	0%
CSV	22%	18%	13%	20%
Case Detection	0%	1%	0%	0%
Care and Support	14%	12%	4%	7%
Capacity Devel.	1%	1%	1%	0%
Administration	7%	6%	10%	2%
IP Central Office	26%	13%	17%	57%
GF-KHANA	10%	24%	0%	0%
Flagship TA	0%	0%	20%	0%

SCC had the highest total cost by a wide margin, but because they provided service to a large number of PLHIV, their cost per PLHIV per year of $100 was not much dissimilar to the $89 cost per PLHIV per year at CPN+. The annual unit costs for BFD were by far the lowest, at $26 per PLHIV per year, while also providing service to the largest number of PLHIV. The cost per PLHIV per year for PC was in the middle of the range. See table 59 and Figure 7. Excluding the TA costs for SCC decreases the cost per PLHIV per year $80, which would make SCC the second most costly (behind CPN+).

Table 59: Annual Unit Costs

Analysis Category	BFD	PC	SCC	CPN+	Total
Total Cost	$60,929	$59,268	$114,574	$47,901	$282,672
Number of PLHIV served	2,323	919	1,143	538	4,923
Cost per PLHIV per year	$26.23	$64.49	$100.24	$89.04	$57.42

Figure 7: Total cost per PLHIV per year

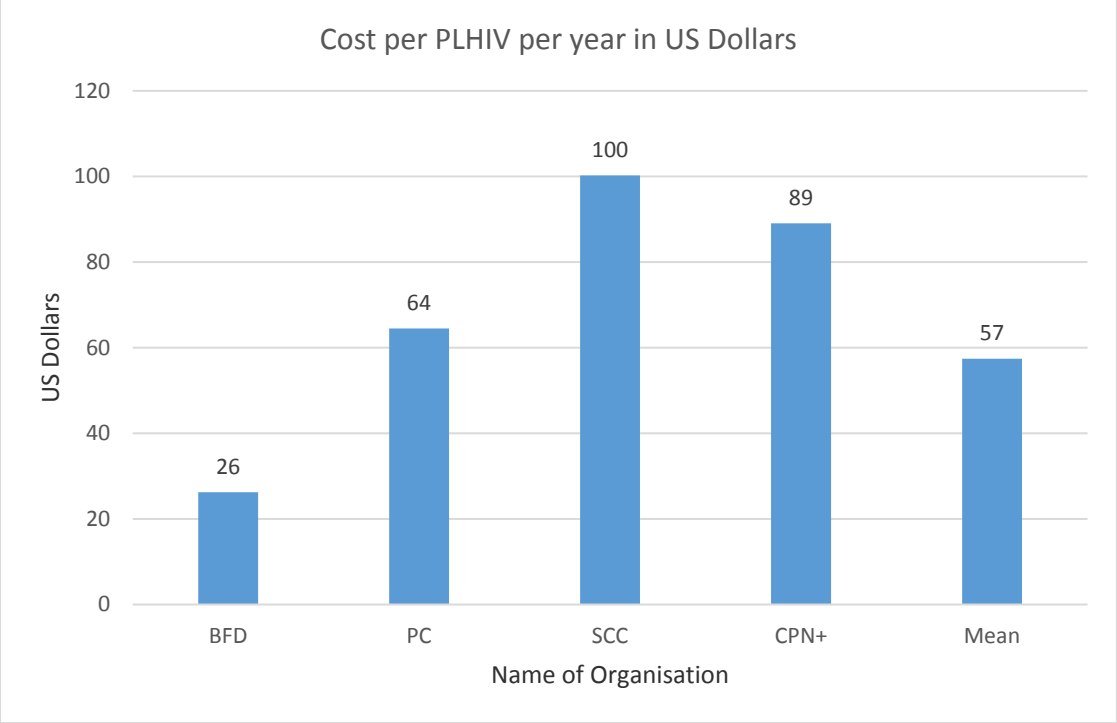


Figure 8: Cost per PLHIV per year excluding TA from USAID HIV Flagship

Discussion

PLHIV Characteristics

In this evaluation, 838 randomly selected PLHIV from Pursat, Battambang, Kandal, and Siem Reap were interviewed, including 603 that were designated as greatest need PLHIV and 235 that were designated as stable PLHIV. Most PLHIV (75%) were between 35 and 54 years old, and 50% were married.

By self-report, only seven PLHIV identified themselves as a member of a KP group. Also by self-report, 87 PLHIV that were designated as stable appeared to meet at least one criterion for being considered greatest need. This is similar to a previous finding that suggested potential mis-categorization of stable PLHIV (HIEP 2015). A large number of PLHIV had ID Poor cards (411), accounting for 49% of all PLHIV (56% of greatest need PLHIV and 32% of stable PLHIV).

At its inception, it was expected that approximately 30% of PLHIV would meet greatest need criteria, but this evaluation's sample showed that 72% of PLHIV bore this designation. This is consistent with the findings from the previous evaluation which showed that 61% of PLHIV were designated as greatest need (NCHADS 2015, HIEP 2015). This reality has had implications, including an apparent insufficiency of funds to support transportation reimbursements, with 42% of greatest need clients that had failed to receive transportation reimbursements on the day of their clinic visit being told that the reason was that the NGO did not have resources for this expected benefit. According to one CSV, “because of limited budget, [the] project could not provide transportation support to all greatest need PLHIV. Consequently, some greatest need PLHIV and stable PLHIV left the group and said that NGO [was showing] nepotism.”

Greatest need and stable PLHIV Comparisons

Greatest need and stable PLHIV were similar with regard to most measures. For example, on average, PLHIV had known their status for an average of 9 years (greatest need = 9.0 years, stable = 9.5 years); and the majority of PLHIV (88%) had clinic appointments every two months (greatest need = 87%, stable = 90%).

The majority of PLHIV (96%) reported being on time for their last clinic visits (greatest need = 96%, stable = 95%), and few PLHIV (3.5%) reported missing any ARV medication in the past two months (greatest need = 3.6%, stable = 3.0%). Overall, these last two data points indicate strong programs in the four provinces with high adherence to clinic attendance and to taking medications. While the national database was unable to provide information on ARV adherence, there was strong evidence across all four geographic areas that enrolment of individuals that tested positive for HIV into care increased, and that the ratio of PLHIV receiving ART to those that were diagnosed with HIV also increased. Losses to follow-up and deaths were very low across the four locations, though, overall, deaths were higher in 2016 than in 2015 (0.26% and 0.17%, respectively) as were losses to follow up (0.68% and 0.42%, respectively). Only Kandal and Battambang provinces showed decreased losses to follow up, while losses to follow up increased slightly in Siem Reap and Pursat.

Transportation Support

Though greatest need PLHIV only had approximately half of their transportation costs reimbursed (US$2.7 spent, US$1.4 reimbursed), more than 90% reported that transportation support was important or very important, with approximately two thirds (65%) reporting that loss of this support would negatively affect their family financially. One CSV reported receiving negative verbal feedback from PLHIV who “received inadequate transportation support and PLHIV who did not receive transportation support.”

Looking at key associations within the data, the analysis found statistically significant positive associations between receipt of transportation reimbursement and timeliness to last clinic visit ($p = 0.039$), and between timeliness to last clinic visit and adherence to medication ($p = 0.000$). Based on these associations, there would appear to be a risk of worsening adherence with further erosion of transportation reimbursement.

CSV Home Visits and Referrals

With regard to other key services provided to greatest need PLHIV, the vast majority of PLHIV reported a high level of satisfaction with, and importance of, these services, with little variation among the four provinces. For example, 94% of greatest need PLHIV were satisfied or very satisfied with CSV home visits, and 99% thought that CSV home visits were important or very important; 91% of greatest need PLHIV were satisfied or very satisfied with referral services, and 92% thought that referral services were important or very important; and 91% of greatest need PLHIV were satisfied or very satisfied with referral services, and 92% thought that referral services were important or very important. PLHIV suggested that CSV support could be improved by home visits being conducted more often, and the sharing of new information with them. Similar high levels of satisfaction and importance were reported among greatest need and stable PLHIV in 2015 (HIEP 2015).

Group Education Sessions

Group education sessions are meant to be available to both stable and greatest need PLHIV, but the vast majority (80%) of PLHIV did not participate in these sessions. This is similar to the 2015 finding that 86% of PLHIV did not participate in these sessions (HIEP 2015). There was some variation across locations, with greatest need PLHIV in Siem Reap and Battambang having higher participation rates than their stable counterparts, while in Pursat and Kandal the opposite was true.

Among the minority of PLHIV who did participate in group education sessions at the ART clinic, overall satisfaction with these sessions was high, with 98% saying they were satisfied or very satisfied with these sessions. The majority of PLHIV that did not participate in group education sessions gave the reason that they did not know about their existence (61%), and a sizeable proportion (38%) reported that group education sessions were not offered at the clinic they attended. PLHIV suggested improvements, including focusing group education sessions on the use of ARVs and ARV side-effects, and that PLHIV should participate actively in these sessions, which were again similar to the 2015 suggestions (HIEP 2015).

Village Saving and Loan

Village saving and loan participation was low across all four locations, with only about 16% of PLHIV (17% of greatest need PLHIV; 12% of stable PLHIV) having participated in the previous 12 months. In Pursat the proportion of PLHIV that participated in VSL in the previous 12 months actually decreased from 33% in 2015 to 22% in 2017 (HIEP 2015). About half of all PLHIV (50%) that did not participate in a VSL group said there was none in their local area, and approximately one third (37%) said that they were never informed about VSL groups. Of PLHIV that participated in VSL groups, 88% found them to be important or very important for HIV support, and 85% found them to be important or very important for financial support.

Comparing CBPCS to Old Model of Support

PLHIV demonstrated a wide diversity of opinions when comparing the new CBPCS approach to the previous approach, though a larger proportion (36%) thought the old approach was better, compared to 22% that believed the new approach was better. The largest proportion of respondents (42%), however, said either there was no difference or that they didn't know which was better. In 2015, the proportions of PLHIV that felt the old approach was better than the new approach was also higher than those that thought the opposite, and a slightly larger proportion of respondents (49%) said either there was no difference or that they didn't know which was better (HIEP 2015). Interestingly, among those that

preferred the new approach, many (41%) thought that the quality of service at the clinic had improved (though this was not an element of CBPCS), and as expected, many of those who preferred the old approach bemoaned the reduction of social and food support, transportation reimbursements, and home visits (46%, 30%, and 10%, respectively).

CSV and CSM

101 healthcare providers were interviewed, including 67 CSV. Of the CSV that were interviewed, the average number of PLHIV that they supported was 43, with a number of CSV reporting supporting over more than 90 PLHIV. This client load was much higher than the proposed load of 10-15 PLHIV (NCHADS, 2015b).

The average number of home visits conducted by CSV in the last month was 5.6, meaning that at most, approximately one in eight of the PLHIV received a home visit in the previous month, on average. The performance across the provinces was similar, but CSV in Kandal had a higher average number of monthly home visits (7.5).

Of 15 responsibilities of CSV under the new CBPCS model, there was overall incomplete performance of these activities. Using a cutoff of 50% of CSV reporting performing these tasks, CSV in Battambang only met this criterion for 3 activities, CSV in Kandal for 7 activities, CSV in Pursat for 4 tasks, and CSV in Siem Reap for 6 tasks.

Recall of CSV on the criteria for selecting greatest need PLHIV was also limited, with only 11 of 67 CSV able to list more than five of the nine criteria. Accordingly, while 71% of providers recalled being trained in CBPCS, 41% of CSV and CSM suggested that their work would be improved by receiving more training on the new CBPCS model.

Some CSV thought that PLHIV with low treatment adherence should not be considered "greatest need," and some CSV also thought that consideration for greatest need should be given to PLHIV with serious health problems, PLHIV with many family members that were also PLHIV, and PLHIV that were poor.

Ultimately, the majority of CSV and CMS believed that their efforts under CBPCS were helping PLHIV, and that their work was valued by PLHIV. The vast majority of CSV and CMS also reported being satisfied or very satisfied with their responsibilities under the new CBPCS model, citing their ability to assist PLHIV in adherence and retention. Among the pre-eminent challenges reported by CSV, most had to do with challenges reaching the PLHIV under their care because of far distances, lack of client phone numbers, and PLHIV migration. Some CSV reported challenges in having enough resources for home visits and communication (phone cards) to successfully complete their work. To this point, only 31 of the 67 CSV said they were very satisfied or satisfied with regard to the incentive provided for compensation. The vast majority of CSV and CSM (72%) suggested that an increased incentive would improve their work including 20% that specifically suggested increasing resources for communication, and 25% that suggested increasing the resources for fuel to conduct home visits.

Cost Analysis

Total program costs varied widely among the four implementers ($47,901-$112,574 per year), as did the unit costs of providing services to PLHIV. Total program cost was highest for SCC, in large part because of significant management and Flagship TA costs, but SCC also had by far the most comprehensive set of activities (performing 31 of 32 CBPCS activities, compared to <19 for the other three NGOs). SCC had the highest unit cost among the four implementers at a cost per PLHIV per year of $100, the cost at PC was $64, at CPN+ was $89, and BFD was the most cost-effective at $26 per PLHIV per year. If the Flagship TA costs were excluded from the SCC costs, the cost-effectiveness would decrease to $79.81 per PLHIV per year. The costs per client under CBPCS at all 4 locations were all less than the cost per client under the

previous CHBC model ($125). Despite the differences in cost, there were no consistent differences in ley outcomes across the 4 locations served by the 4 NGOs.

Conclusion

In sum, it appears that the new CBPCS model provided an overall adequate level of service to PLHIV, with excellent adherence to ART and timeliness in attendance to clinic appointments among both greatest need and stable PLHIV, with no major appreciable differences between the groups or between the NGOs implementing CPBCS. Overall deaths and losses to follow-up remained low under the new model, despite the reductions in services to stable PLHIV. There were overall cost savings under the new model, with an average cost of $57 per client per year, compared to the pervious CHBC model $125 per client per year. Approximately half (49%) of all PLHIV reported having ID Poor cards (56% of greatest need PLHIV and 32% of stable PLHIV), making them eligible for HEF.

PLHIV highly valued and were highly satisfied with CSV home visits and referrals, and also highly valued the transportation reimbursements, which covered about half their transportation costs, and there was evidence that transportation reimbursements had an impact on clinic visit timeliness. CSV and CSM were motivated and felt their efforts were making a positive difference for PLHIV, but many felt their financial compensation should be more generous to cover the costs of their work.

There were areas of suboptimal performance, however, including 1) an unexpectedly high number of greatest need PLHIV which resulted in high caseloads for CSV and less availability of funds for PLHIV transportation reimbursements; 2) low availability and utilization of group education sessions (only 20% participation) and; and 3) low availability and utilization of VSL groups (only 16% participation).

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Annex: Survey Instruments

Annex 1: Questionnaire for PLHIV

Annex 2: Questionnaire for CSV/CMS

Annex 3: Questionnaire guide for Providers

Annex 4: Informed consent for PLHIV

Annex 5: Informed consent for Providers

10. Study Participant Characteristics

Table 59: Participants characteristics

Provinces	Positions	Sex		Total
		Male	Female	
All Provinces	Project Officer/CSO	6	5	11
	M&E Officer	1	0	1
	Program Manager	2	0	2
	Provincial Manager	2	0	2
	Executive Director	1	0	1
	Provincial Coordinator	2	1	3
	M&E Manager	1	0	1
	Chief of ART Clinic	1	0	1
	Medical Doctor/Clinician	6	1	7
	Counsellor	1	4	5
	Total	**23**	**11**	**34**
Battambang (BDF and ART Clinic)	Project Officer/CSO	4	2	6
	Program Manager	1	0	1
	Medical Doctor/Clinician	2	0	2
	Counsellor	1	0	1
	Provincial Manager	1	0	1
	Provincial Coordinator	1	0	1
	Total	**10**	**2**	**12**
Kandal (CPN+ and ART Clinic)	Project Officer/CSO	1	0	1
	Program Manager	1	0	1
	Medical Doctor/Clinician	0	1	1
	Counsellor	0	2	2
	Provincial Coordinator	0	1	1
	Chief of ART Clinic	1	0	1
	Total	**3**	**4**	**7**
Pursat (PC and ART Clinic)	Project Officer/CSO	1	0	1
	Medical Doctor/Clinician	2	0	2
	Counsellor	0	1	1
	Total	**3**	**1**	**4**
Siem Reap (SCC and ART Clinic)	Project Officer/CSO	0	3	3
	M&E Officer	1	0	1
	Medical Doctor/Clinician	2	0	2
	Counsellor	0	1	1
	Provincial Manager	1	0	1
	Executive Director	1	0	1
	Provincial Coordinator	1	0	1
	M&E Manager	1	0	1
	Total	**7**	**4**	**11**