# Innovative Community-Based HIV/AIDS Implementation Programs & Research in Cambodia

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# Outlines

1. Updates on the HIV epidemic in Cambodia
2. Major challenges in vulnerable and key populations
3. Contributing innovative programs in the past 10 years
4. Large-scale operational studies in the past 5 years
5. Conclusions

# HIV Prevalence in General and Key Populations in Cambodia

## General Adult Population Aged 15–49

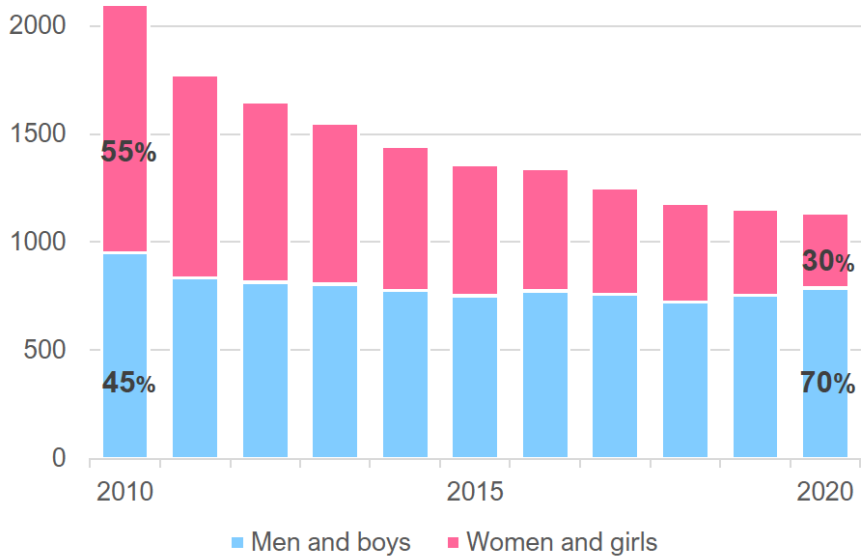
**0.6%**

(Asia Epidemic Model, 2021)

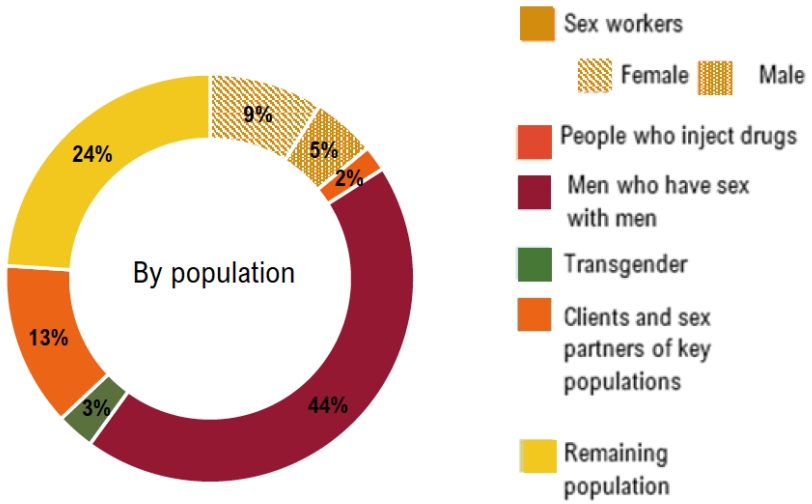
| FEWs | MSM | PWUD | TGW | PWID |
|---|---|---|---|---|
|  |  |  |  |  |
| **4.9%** | **10.0%** | **5.7%** | **9.6%** | **15.2%** |
| National IBBS 2022 | National IBBS 2023 | National IBBS 2017 | National IBBS 2019 | National IBBS 2017 |

# New HIV Infections by Sex and Populations in Cambodia

**Proportion of new HIV infections by sex 2010 to 2020**

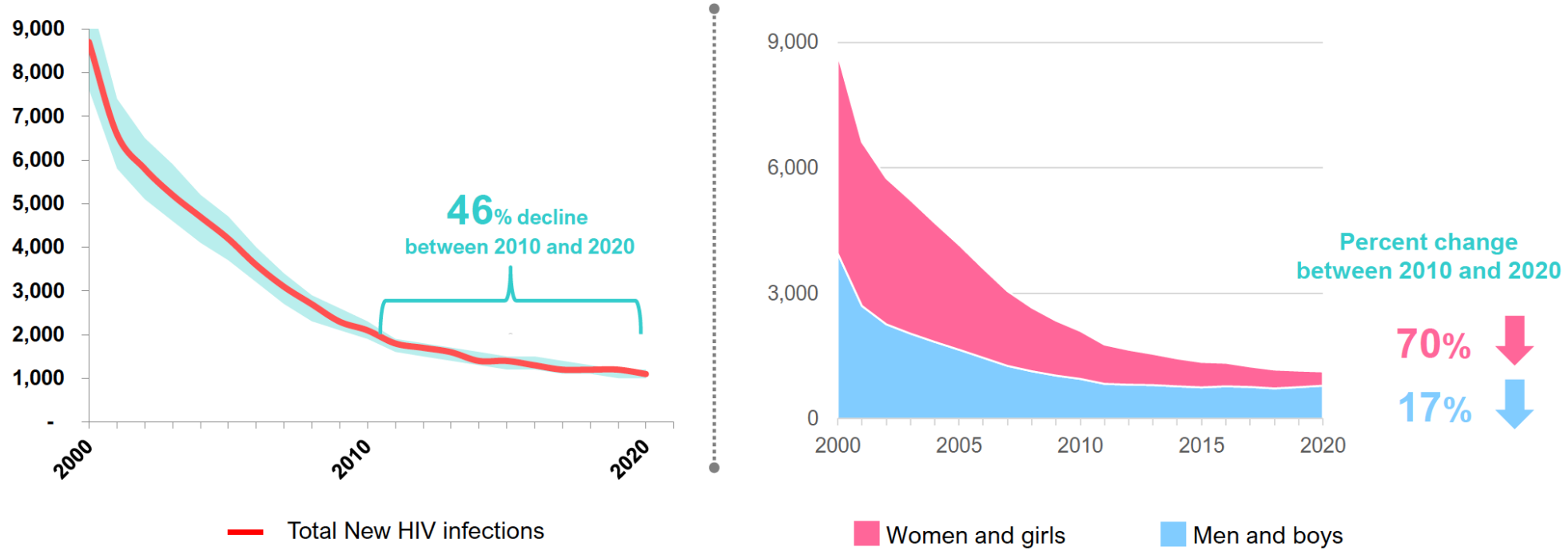



**Distribution of new HIV infections by population, 2020**



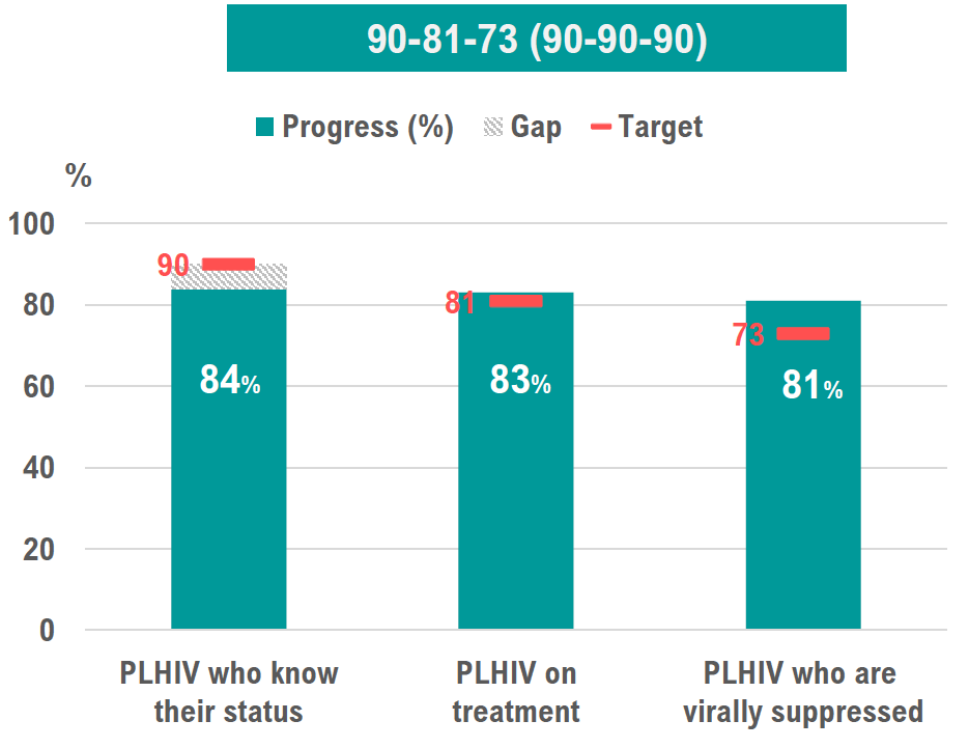

**Source:** Cambodia HIV Estimates 2021 (NCHADS, 2022)

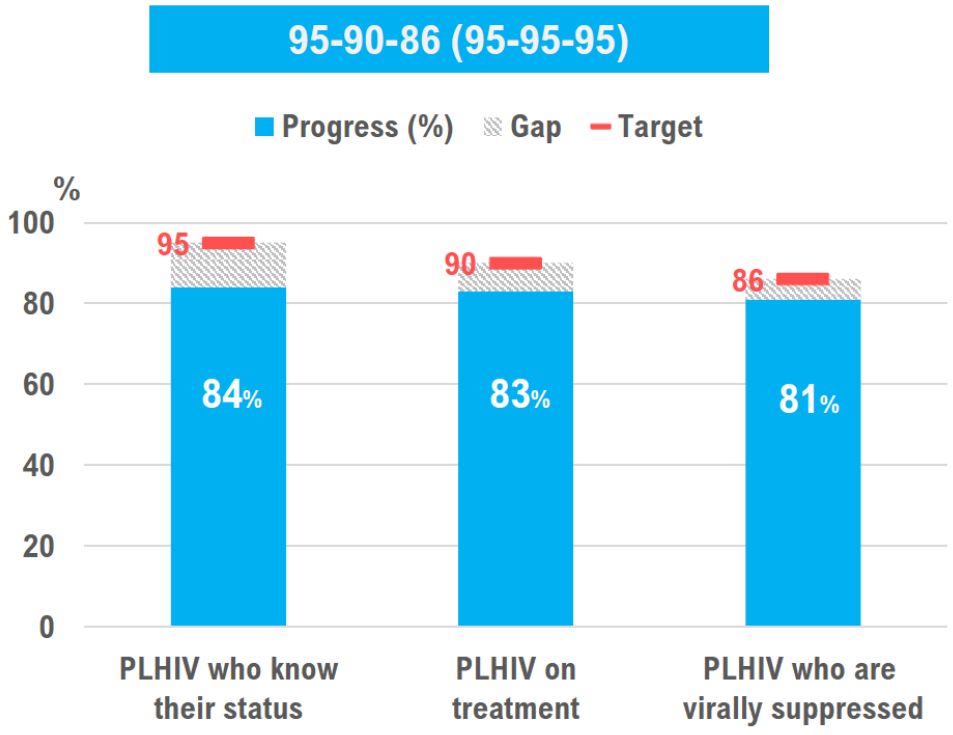
# Trend in New HIV Infections by Sex in Cambodia




**Source:** Cambodia HIV Estimates 2021 (NCHADS, 2022)

# HIV Testing & Treatment Cascade in Cambodia

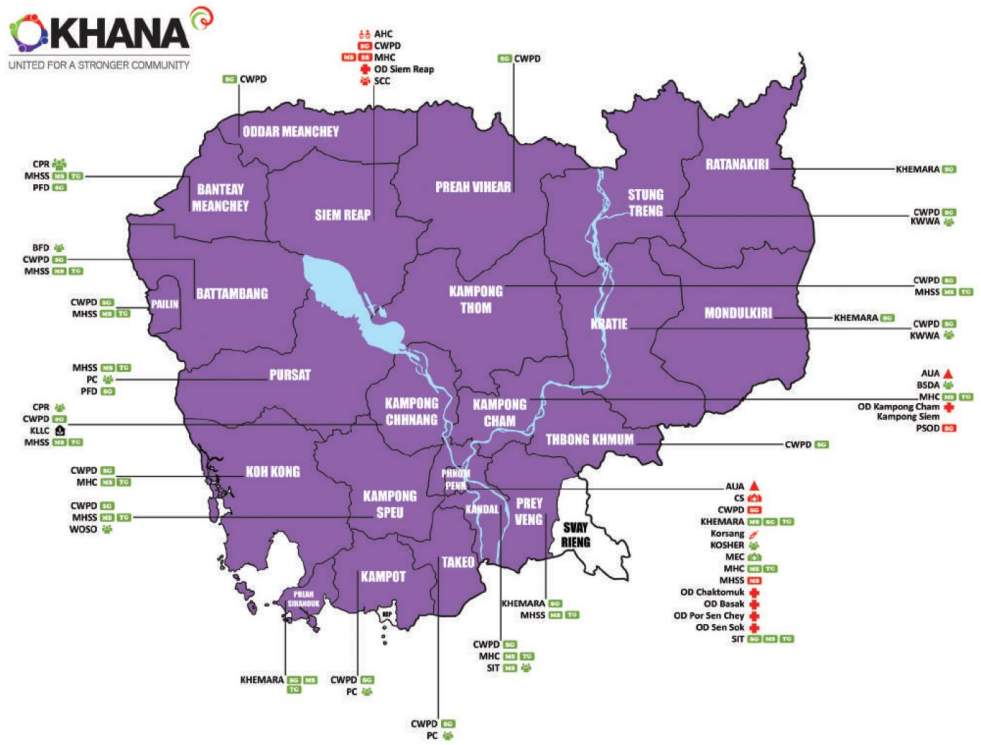


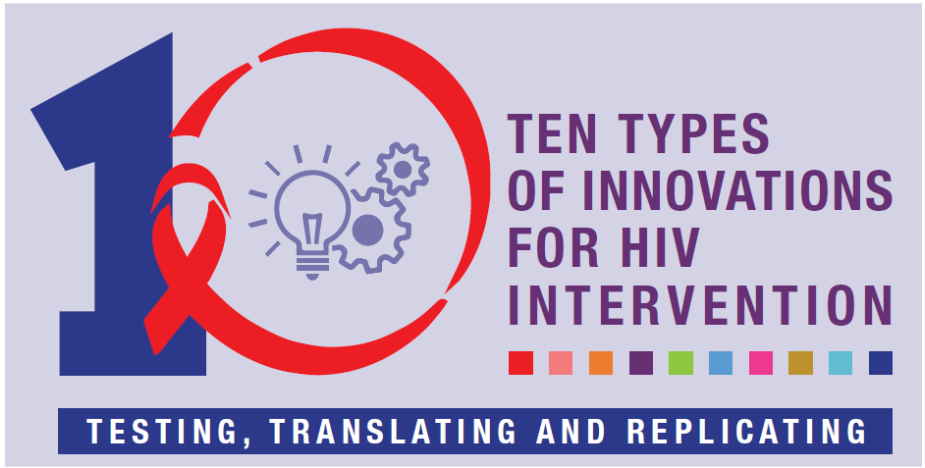




**Source:** Global AIDS Monitoring 2022

# Key Projects: SAHACOM & Flagship

1. **Sustainable Action against HIV and AIDS in the Communities (SAHACOM):**
   - Project life: 2009–2015
   - Funded by USAID (USD 13.5M)
   - Coverage: 13 out of 25 provinces
2. **HIV/AIDS Flagship Project:**
   - Project life: 2012–2018
   - Funded by USAID (USD 30M)
   - Coverage: 6 high-burden provinces

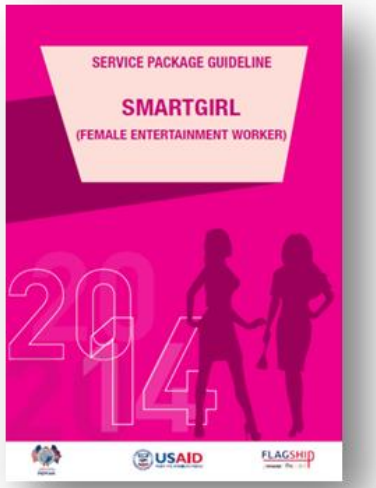




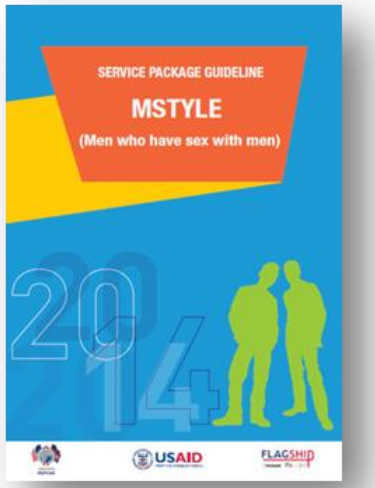

1. USE OF TECHNOLOGY-BASED TOOLS FOR SCREENING KEY POPULATIONS
2. STRENGTHENING OF ON-SITE MARKETING OF CONDOMS AND LUBRICANTS TO HIGH-RISK GROUPS
3. DEVELOPMENT OF APPROACHES DELIVERING SOCIAL AND BEHAVIO CHANGE COMMUNICATION
4. IMPLEMENTATION OF SEXUAL AND REPRODUCTIVE HEALTH AND HIV PREVENTION THROUGH SMARTGIRL
5. IMPLEMENTATION OF MHEALTH AMONG KEY POPULATIONS IN CAMBODIA
6. RISK TRACING SNOWBALL FOR HIGHER-RISK POPULATIONS
7. INTEGRATION OF HPV SCREENING WITH HIV TESTING AND TREATMENT
8. POSITIVE PREVENTION
9. INTEGRATED SIZE ESTIMATION SURVEY AND BEHAVIOURAL SURVEILLANCE STUDY FOR MEN WHO HAVE SEX WITH MEN IN CAMBODIA
10. DEVELOPMENT OF UNIQUE IDENTIFIER CODE FOR KEY POPULATIONS IN CAMBODIA

**Source:** KHANA Annual Report, 2018

# Branded Programs & Strategic Behavioral Communication




FEWs




MSM


TGW

# Websites and Facebook Pages for Key Populations


# Drop-in Centers & Outreach for Key Populations

# The Mobile Link

- A community-based RCT: 3 years
- Using mHealth approach to reach FEWs with information and link them to existing care and support services:
  - HIV, STIs, and SRH
  - Gender-based violence and legal aid
  - Substance abuse (forced drinking and drugs)
  - Other women's health issues

STUDY PROTOCOL Open Access

*Mobile Link* – a theory-based messaging intervention for improving sexual and reproductive health of female entertainment workers in Cambodia: study protocol of a randomized controlled trial

Improving access to health services for female entertainment workers in Cambodia: findings from the Mobile Link randomised controlled trial

JOURNAL OF MEDICAL INTERNET RESEARCH

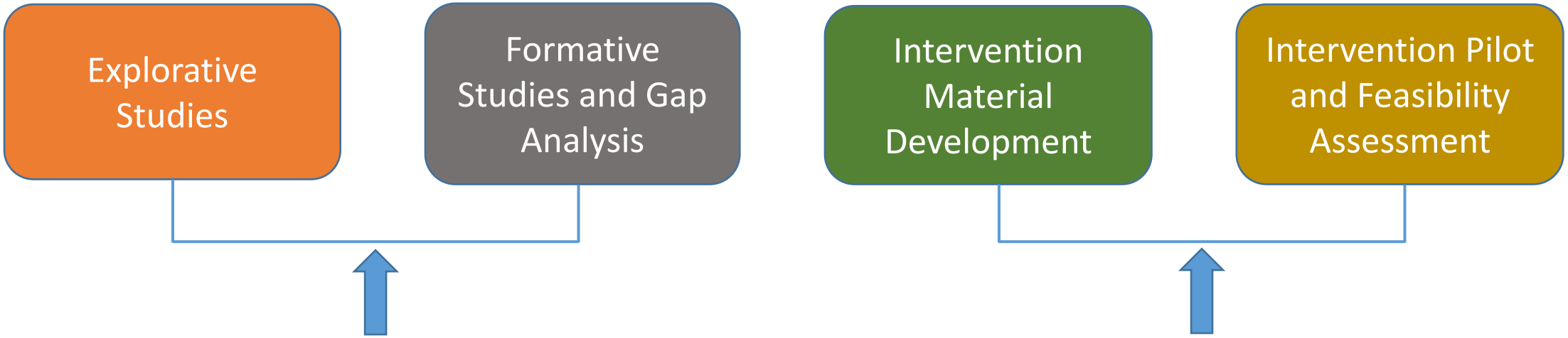
Original Paper

A Mobile Intervention to Link Young Female Entertainment Workers in Cambodia to Health and Gender-Based Violence Services: Randomized Controlled Trial

# The *Mobile Link*'s Objectives

1. To develop and pilot test the *Mobile Link* intervention by conducting participant observation, focus groups, and cognitive pilot interviews
2. To evaluate the efficacy of the *Mobile Link* in providing HIV, STI, SRH, and GBV information to FEWs and linking them to services
3. To qualitatively assess the Mobile Link's acceptability, effectiveness, and feasibility among key stakeholders

# The “Mobile Link” Project Development




**2 Years (2015–2017)**

- National survey (IBBS-FEWs)
- Population size estimation
- A series of quantitative and qualitative studies

**1 Year (2018)**

- Qualitative studies using participatory approaches
- Acceptability and feasibility qualitative assessment

# Emerging Health Issues Explored in Formative Studies

- Exposure to gender-based violence (GBV):
  - Physical and sexual abuse in and outside the workplace
  - Forced drinking and substance abuse
  - Emotional abuse by the establishment owners/managers
- Other neglected health issues:
  - Health concerns as consequences of heavy alcohol drinking
  - Women's health problems other than HIV, STIs, and SRH (e.g., intravaginal hygiene, other gynecologic issues, cervical cancer)
  - Mental and psychological wellbeing
  - Unwanted pregnancy and induced abortion

Original Research

Gender-Based Violence and Factors Associated with Victimization among Female Entertainment Workers in Cambodia: A Cross-Sectional Study

Journal of Interpersonal Violence

SUBSTANCE USE & MISUSE

ORIGINAL ARTICLE

"We Cannot Avoid Drinking": Alcohol Use among Female Entertainment Workers in Cambodia

RESEARCH ARTICLE Open Access

"Feeling clean": stigma and intravaginal practices among female entertainment workers in Cambodia

# Key Findings From the Formative Studies

- Health priorities, such as gynecologic issues, were emphasized more than HIV/STIs and family planning
- Misconceptions exist about contraception and STI transmission
- The need to build trust in outreach workers and services linkages
- The desire for information and supportive interventions to address mental health issues that may stem from GBV and perceived stigma and discrimination

Open Access Research

BMJ Open Factors associated with induced abortion among female entertainment workers: a cross-sectional study in Cambodia

Siyan Yi,[1,2] Sovannary Tuot,[1] Pheak Chhoun,[1] Khuondyla Pal,[1] Khimuy Tith,[1] Carinne Brody[3]

Original Article

Page 1 of 13

Using participatory methods to build an mHealth intervention for female entertainment workers in Cambodia: the development of the Mobile Link project

Pheak Chhoun[1], Kathryn C. Kaplan[1], Carlijn Wieten[1], Ida Jelveh[2], Mitchell Lienemann[2], Sovannary Tuot[1], Siyan Yi[1,2,3], Carinne Brody[2]

Archives of Sexual Behavior (2020) 49:3065–3074
https://doi.org/10.1007/s10508-020-01649-3

ORIGINAL PAPER

Female Entertainment Workers and Condom Use Negotiation in Post-100% Condom Use Era Cambodia

Carinne Brody[1] · Rebecca Reno[2] · Pheak Chhoun[3] · Kathryn Kaplan[1] · Sovannary Tuot[3] · Siyan Yi[1,3,4]

Received: 23 July 2019 / Revised: 24 January 2020 / Accepted: 27 January 2020 / Published online: 24 March 2020
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Abstract
Beyond the monopoly environment of the early 100% Condom Use Program in Cambodia, less is known about how current female entertainment workers negotiate condom use on their own, and what factors impact that negotiation. This study aims to understand the experiences of current female entertainment workers in negotiating condom use with clients in Cambodia. Data collection occurred over a period of 3 weeks (August–September 2017) with concurrent data transcription and translation. A total of 27 focus group discussions (FGDs) were conducted in the following groups: pilot FGD (5), karaoke bar (5), massage parlor (5), beer garden (5), on-call sex workers (3), cross-venue groups exploring parenting issues (2), and street-based sex workers (2). Female entertainment workers experience a range of control over negotiating condom use with clients. Participants reported times when they were able to take direct action and successfully insist on condom use, times when they agreed to participate in condomless sex for money in the face of economic insecurity, and times when male clients sabotaged their attempts to negotiate condom use with tricks, verbal threats or threats of violence. These experiences are influenced by alcohol use, economic shocks, trust between partners, and experiences with side effects. Our findings support the development of policies that re-invigorate the structural-level condom promotion programs while also acknowledging the many individual-level factors that shape condom use such as alcohol consumption, economic insecurity, trust, and side effects.

Keywords Condom use · Female entertainment workers · Female sex workers · HIV · Condomless sex · Focus groups

# What Did the Intervention Look Like?

02 Messages Per Week

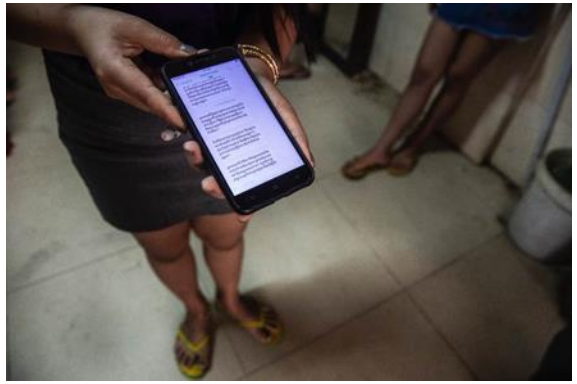
Do you feel burning or pain when you have sex? Sex does not have to be painful, and you have the right to enjoyable and pain-free sex. Find out WHY you might have these symptoms.

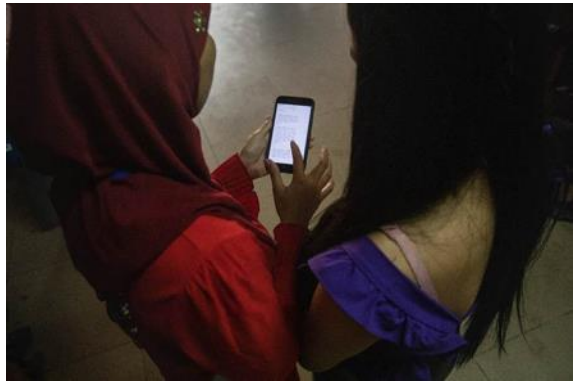
Are you scared to get an HIV test? Remember, if you are HIV+ you can still live a healthy life if you just get on medication. If you don't know, your health will get worse – so find out today!

Sisters, let's talk to each other and share tips to help avoid being drunk and stay safe. Our first tip for you – eat a lot of rice or noodles before you drink even if you feel a little sick. You need something in your stomach to soak up the alcohol!

**Links to Outreach Workers**

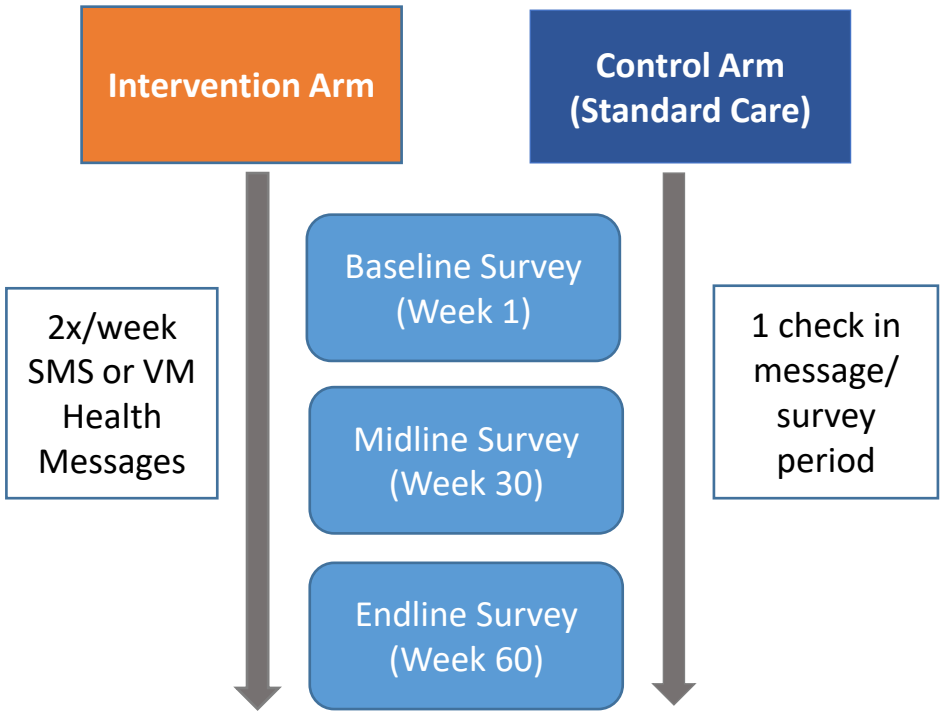
If you would like to hear another message about this topic, **Press 1**. If you would like to be connected to *Mobile Link* staff to talk more about this issue or another issue or receive referrals, **Press 2**.





# How Did We Conduct This study?

- Randomized controlled trial
- 5 cities in Cambodia
- Survey-based data collection:
  - Baseline: January 2018
  - Midline: November 2018
  - Endline: June 2019
- Intervention: 60 weeks of health topics and outreach messages



# What Did We Measure?

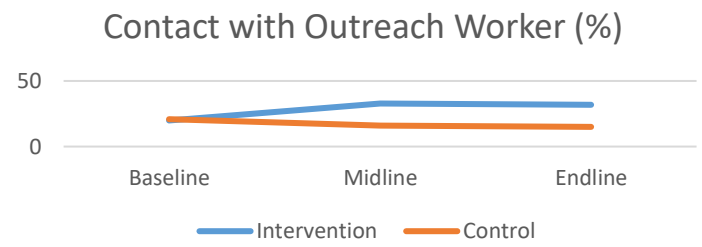
- Primary outcome measures:
  - HIV testing
  - STI testing
  - Condom use with different types of partners
  - Contraceptive use
- Secondary outcomes:
  - Contact with outreach workers
  - Use of escorted referral services
  - Forced drinking at work
  - GBV experiences and attitudes

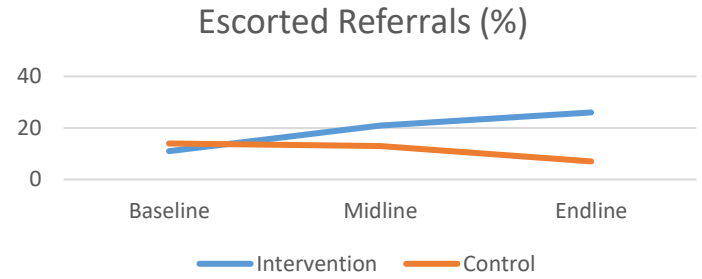
**Data Analyses**

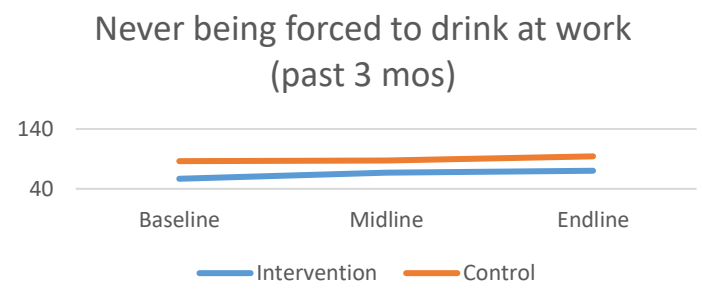
- Comparisons of baseline characteristics and outcome variables
- Crude and cluster-adjusted pooled tests of association (analytic vs. non-analytic sample)
- Intervention effects – multilevel mixed-effects logistic regression (group by time interaction terms at endline)
- Model fit was assessed for each outcome using the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC)
- Sensitivity analyses – sensitivity analysis, we used intention-to-treat (ITT) principles

# What Did We Find?

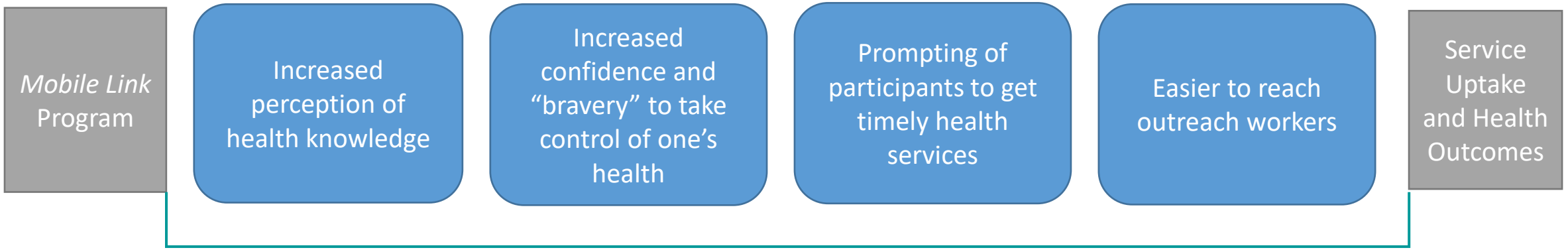
- Comparable baseline characteristics of intervention and control groups
- No significant primary health outcomes changes at the 60 weeks mark
- Participants in the intervention group were significantly more likely to have had contacts with outreach workers and escorted referrals
- Reduced forced drinking at work



# Qualitative Evaluation

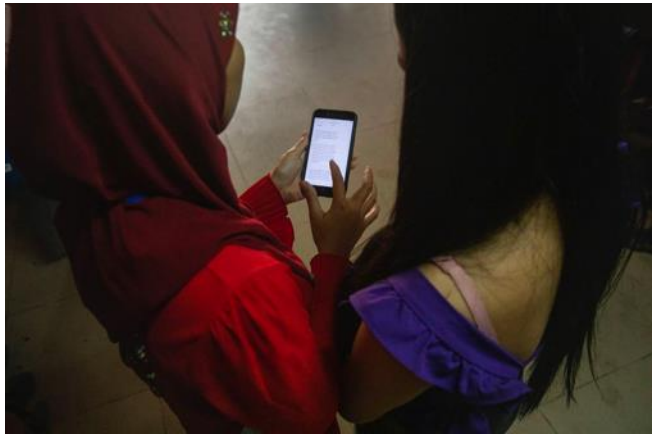



**Data from 6 focus group discussions (FGDs) and 15 in-depth interviews (IDIs)**

# Quotes from Intervention Participants

*"The Mobile Link helps us learn the problems about our health that we are curious about by reading the text messages. We don't have to go to the clinic to consult."*

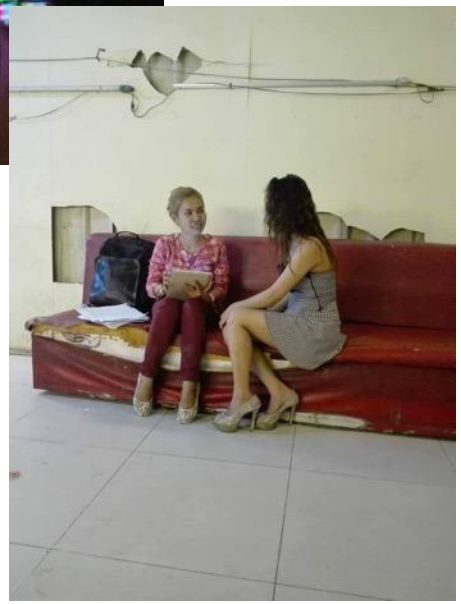
– Battambang FGD



*"Because of the Mobile Link, I dare to change my daily life. Dare to talk to a partner and dare to talk to clients directly when they came to our workplace."*

– Phnom Penh IDI

# Quotes from Intervention Participations



*"The Mobile Link offered us knowledge which pushed us to think more about our health, and then we were brave to go to the health providers alone. Before we were not daring enough to go along, we always asked someone to accompany us."*

– Siem Reap FGD

*"It feels good that they educate us to practice hygiene and protect ourselves."*

– Banteay Meanchey IDI

# Qualitative Evaluation – Barriers & Facilitators

- The *Mobile Link* has many advantages and is well-accepted by stakeholders from the community to the national levels
- Perceived benefits – ease of use, knowledge gained, link to services, resource-efficient, rapports with establishment owners, the relationship between field staff and FEWs, and FEWs' motivation
- Enabling environment – strong political supports, community partnerships, and financial aids

Original Article

Page 1 of 11

**Perceived barriers and facilitators in using text and voice messaging for improving HIV and sexual and reproductive health of female entertainment workers in Cambodia: a qualitative study**

Kiyoko Kai Xuan Ong[1], Janelle Shaina Ng[2], Chhorvoin Ou[3], Pheak Chhoun[3], Sovannary Tuot[4], Siyan Yi[1,3,4,5]

**Background:** Female entertainment workers (FEWs) in Cambodia are one of the hard-to-reach populations at risk of human immunodeficiency virus (HIV) and poor sexual and reproductive health (SRH). Due to the stigmatising nature of their work, it is difficult to reach them with prevention and treatment services. The Mobile Link project is a mobile health (mHealth) intervention that aims to deliver health messages to FEWs and link them up to health services. This study aims to explore the perspectives of stakeholders on the Mobile Link and identify barriers and facilitators to the project implementation, in order to determine areas for improvement of future mHealth interventions.

**Methods:** This study was conducted between November to December 2018 at the capital city and other three provinces where the Mobile Link was implemented. We employed a qualitative research design using an interpretative approach. A purposive sampling method was used to recruit participants across four project sites. All participants were stakeholders involved directly or indirectly with the Mobile Link. Nine different groups of stakeholders at the national, non-governmental organizations, community, and individual levels were recruited. Seventeen semi-structured in-depth interviews (IDIs) and five focus group discussions (FGDs) were conducted and transcribed. Data were managed using NVivo 12 and analysed using thematic analysis with an inductive approach.

**Results:** We detected four major themes: (I) perceived benefits, (II) attitudes, (III) access, and (IV) enabling environment. Different levels of stakeholders reported on the perceived benefits of the Mobile Link, including ease of use, knowledge gained, link to services, and cost-effectiveness. Perceived benefits and enabling environment were identified as facilitators to implementation of the project. Barriers included technological issues, operational challenges, poor rapport with entertainment establishment owners, and low motivation to participate in the Mobile Link among FEWs.

**Conclusions:** The Mobile Link has many advantages and is well-accepted by stakeholders from the national and community levels. We discussed the implications of the perceived facilitators and barriers identified on the project and mHealth interventions. Implications discussed should be taken into consideration by organizations implementing mHealth interventions for HIV key populations in Cambodia as well as in other resource-limited settings.

# Limitations of the Study

- Too short intervention (18 months)
- High loss to follow up (~ 40% by the midterm) due to loss of contact and mobilization of FEWs (anticipated ~ 20%) –
  - Differential loss to follow-up between intervention and control groups
- High movements between venues among FEWs – leading to individual-level sampling and non-random assignment to intervention and control groups
- Participants were not blinded to the intervention –
  - Balance between study arms at baseline was achieved on all primary and secondary outcomes

# Conclusions

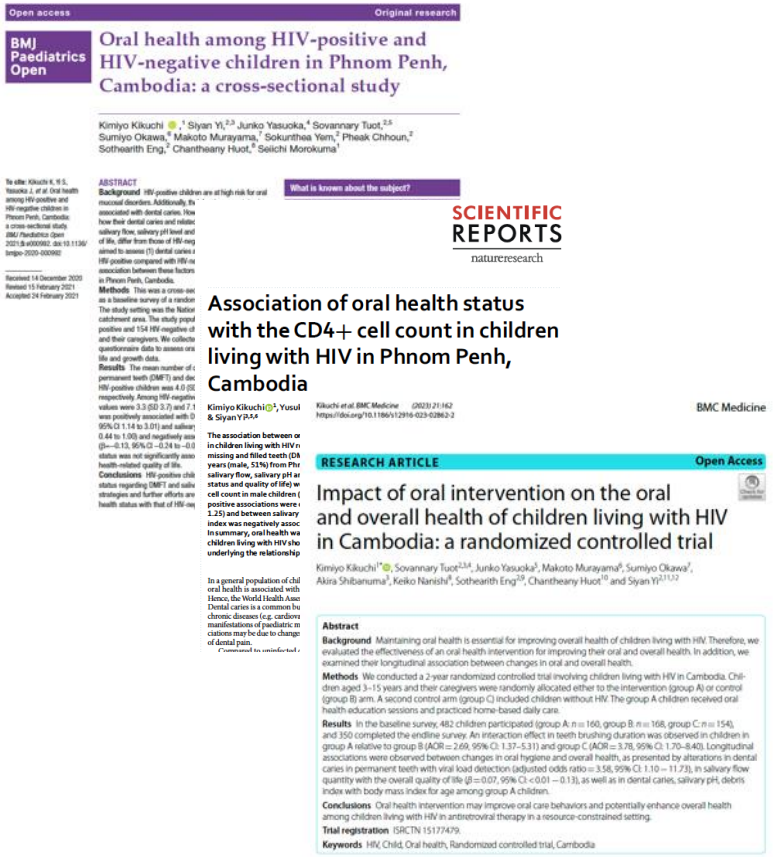
- The *Mobile Link* enhances traditional in-person outreach approaches by community health workers.
- Replication of messaging services would benefit from qualitative research to inform adaptation.
- Successful linkages of vulnerable women to outreach workers and escorted referrals may lead to increased access to other services.
- Longer-term messaging and prompts of community health worker linkages have the potential to increase access to services and may impact FEWs' health outcomes in the future.

# Sustainability & Scale-up

- Handing over the message bank and other materials to NCHADS and other key stakeholders
- Mobilizing resources for expanding the intervention among FEWs and other key populations (e.g., MSM, transgender women)
- Pilot testing the model using different platforms (e.g., WhatsApp, hotline calls)
- Funding commitment from donor agencies

# Oral Health in Children Living with HIV

- Facility- and community-based RCT: 4 years
  - Oral health education sessions for children living with HIV
  - Daily oral self-care under the supervision of their caregivers
  - Aiming to improve oral health that would, in turn, improve the overall health of the children



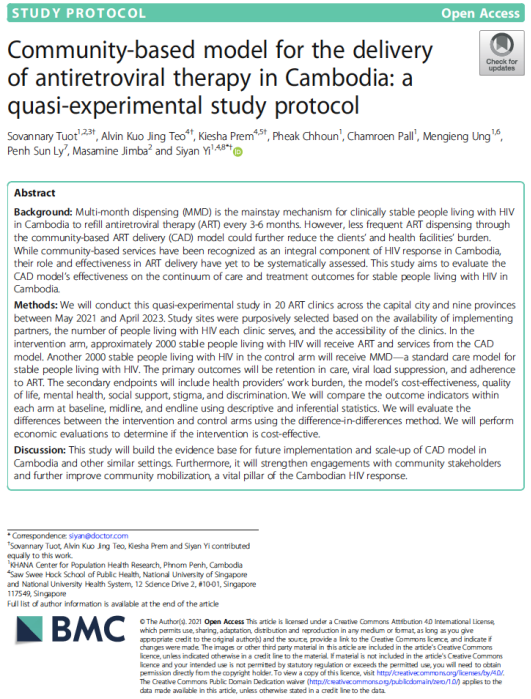
Oral health among HIV-positive and HIV-negative children in Phnom Penh, Cambodia: a cross-sectional study

Association of oral health status with the CD4+ cell count in children living with HIV in Phnom Penh, Cambodia

Impact of oral intervention on the oral and overall health of children living with HIV in Cambodia: a randomized controlled trial

# Community-based ART Delivery Model

- Community-based quasi-experimental study:
  - To develop and evaluate the efficiency of a community-based ART delivery model among PLHIV in 6 provinces
  - To reduce socio-economic burden in PLHIV and workload in facility-based health providers



STUDY PROTOCOL Open Access

Community-based model for the delivery of antiretroviral therapy in Cambodia: a quasi-experimental study protocol

Sovannary Tuot[1,2,5†], Alvin Kuo Jing Teo[4†], Kiesha Prem[4,5†], Pheak Chhoun[1], Chamroeun Pall[3], Mengieng Ung[1,6], Penh Sun Ly[7], Masamine Jimba[2] and Siyan Yi[1,4,8*†]

**Abstract**

**Background:** Multi-month dispensing (MMD) is the mainstay mechanism for clinically stable people living with HIV in Cambodia to refill antiretroviral therapy (ART) every 3-6 months. However, less frequent ART dispensing through the community-based ART delivery (CAD) model could further reduce the clients' and health facilities' burden. While community-based services have been recognized as an integral component of HIV response in Cambodia, their role and effectiveness in ART delivery have yet to be systematically assessed. This study aims to evaluate the CAD model's effectiveness on the continuum of care and treatment outcomes for stable people living with HIV in Cambodia.

**Methods:** We will conduct this quasi-experimental study in 20 ART clinics across the capital city and nine provinces between May 2021 and April 2023. Study sites were purposively selected based on the availability of implementing partners, the number of people living with HIV each clinic serves, and the accessibility of the clinics. In the intervention arm, approximately 2000 stable people living with HIV will receive ART and services from the CAD model. Another 2000 stable people living with HIV in the control arm will receive MMD—a standard care model for stable people living with HIV. The primary outcomes will be retention in care, viral load suppression, and adherence to ART. The secondary endpoints will include health providers' work burden, the model's cost-effectiveness, quality of life, mental health, social support, stigma, and discrimination. We will compare the outcome indicators within each arm at baseline, midline, and endline using descriptive and inferential statistics. We will evaluate the differences between the intervention and control arms using the difference-in-differences method. We will perform economic evaluations to determine if the intervention is cost-effective.

**Discussion:** This study will build the evidence base for future implementation and scale-up of CAD model in Cambodia and other similar settings. Furthermore, it will strengthen engagements with community stakeholders and further improve community mobilization, a vital pillar of the Cambodian HIV response.

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†Sovannary Tuot, Alvin Kuo Jing Teo, Kiesha Prem and Siyan Yi contributed equally to this work.
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Full list of author information is available at the end of the article

# 24-hour Chatline for GBV Response for FEWs in Cambodia

To provide FEWs with 24-hour confidential support by trained staff to make it easier for survivors to be connected to services and get the support when they need it.

# Conclusions

- Cambodia has been successful in HIV care and support services, but less successful in preventing new infections in key populations.
- Innovative approaches to reach sub-pockets of the key populations that have not been reached by traditional approaches.
- Other issues in vulnerable and key populations:
  - Co-morbidities (e.g., HCV, TB, STIs, NCDs)
  - Gender-based violence and its subsequent mental health problems
  - Barriers in access to health care due to stigma and discrimination
  - Legal barriers, particularly for people who use drugs and LGBTI


Investing in our future
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sida, tuberculose, paludisme


UNITED STATES AGENCY
USAID
INTERNATIONAL DEVELOPMENT


TO SERVE · TO LEAD · TO TEACH
TOURO · UNIVERSITY
CALIFORNIA


KYUSHU
UNIVERSITY


WORLD BANK GROUP


SVRI
sexual
violence
research
initiative

# Thank you!
# Q & A