

**Title: Cost Analysis Study of Key Population Interventions
to Fast Track the End of HIV in Thailand**

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STUDY SUMMARY

Title: Cost Analysis Study of Key Population Interventions to Fast Track the End of HIV in Thailand

Design: Retrospective cross-sectional observational cost study will be used. Gross costing methods will be applied using a top-down approach to assess the unit costs of the core package of services along the ‘reach’, ‘recruit’, ‘test’, ‘treat’, ‘prevent’, and ‘retain’ (RRTTPR) cascade which focuses on reaching key populations (KPs) at the selected sites.

Study sites: 13 service delivery sites based-on the RRTTPR cascade Framework

Study Duration: 7 months from proposal submission

Primary Objective: To estimate financial and economic unit costs along the RRTTPR cascade for three service delivery models for key population HIV services: 1) hospital-based model, 2) NGOs reach-recruit to hospitals and mobile HIV testing services, and 3) key population-led health services (KP-LHS).

Primary Outcomes: The financial costs are expected to be used by policymakers and implementers to inform allocating financial resources to KP HIV services in Thailand, particularly to inform the NHSO’s inputs into the 2020 national budget for HIV prevention in Thailand. Moreover, the estimate of economic cost will be used for the further economic evaluation of innovative interventions within the KP-LHS.

1 BACKGROUND

Thailand's HIV/AIDS Operational Plan sets out a framework for delivery of integrated HIV prevention and treatment services to key populations (KPs) including men who have sex with men (MSM), male and female sex workers (MSWs and FSWs), transgender women, (TGW), people who inject drugs (PWID), and others [1]. More recently this approach has been refined to underline ongoing prevention efforts among KPs who are HIV negative [2]. The 'reach', 'recruit', 'test', 'treat', 'prevent', and 'retain' (RRTTPR) framework focuses on reaching KPs, recruiting those at highest risk into prevention, care, and treatment services, testing those at risk, treating all those found positive, preventing HIV infection among those found negative, and retaining both negative and positive KPs in the prevention, care, and treatment continuum [1, 2]. Community based organizations (CBOs) have played an important role of RRTTPR cascade implementation in Thailand – which are currently supported by international funders. There is growing recognition that the financing of the RRTTPR cascade needs to transition from these international donors to the Thai government in the near future. This transition has started with the National Health Security Office (NHSO) providing reimbursement to CBOs for certain activities on a per head basis. However, there is general recognition that the current reimbursements grossly underestimate the cost per service provided and that accurate information on the cost of KP service delivery along the RRTTPR cascade in Thailand is limited.

The purpose of this work is to generate accurate information to answer the following questions on the cost of KP service delivery along the RRTTPR cascade in Thailand. The first question is what the financial and economic unit costs along the RRTTPR cascade of selected service delivery models for KP services currently implemented in the country – where the unit cost is defined as the site-level average cost per service. The second question is whether some of these service delivery models are more technically efficient than others – where technical efficiency is defined as delivering a given level of service output at the lowest feasible cost while holding other characteristics constant, including quality. The various service delivery models are currently provided with different levels of KP engagement along the cascade. There are currently three broad models of key population HIV cascade service provision that are currently in operation in Thailand as follows:

1) Hospital-based model – In this model, all RRTTPR services for key populations are provided or managed by public hospitals. Some hospitals use NHSO funds to support outreach workers who refer key populations to hospitals for HIV testing, ART, and PrEP.

2) NGOs reach-recruit to hospitals and mobile HIV testing services – In this model, NGOs are supported to provide reach-recruit services to key populations so that they access HIV testing in hospitals and/or mobile vans that offer HIV testing in locations convenient for key populations. ART and PrEP are offered in hospital settings.

3) Key population-led health services (KP-LHS) – In this model, NGOs conduct outreach with cadres of outreach workers and through social media to encourage key populations to seek HIV testing at community clinics that the NGOs operate themselves. PrEP is also provided on-site. Peer navigators help people diagnosed with HIV to access ART at hospitals and to remain adherent long-term. Some community clinics managed by NGOs have started to initiate clients on ART and maintain close collaborations with hospitals to handle more complicated cases.

The financial costs are expected to be used by policymakers and implementers to inform allocating financial resources to KP HIV services in Thailand, particularly to inform the NHSO's inputs into the 2020 national budget for HIV services in Thailand. Moreover, the estimate of economic cost will be used for the further economic evaluation of innovative interventions within the KP-LHS.

2 STUDY GOALS AND OBJECTIVES

To estimate financial and economic unit costs along the RRTTPR cascade for three service delivery models for key population HIV services: 1) hospital-based model, 2) NGOs reach-recruit to hospitals and mobile HIV testing services, and 3) key population-led health services (KP-LHS). These models are implemented in the real world as opposed to estimating the cost of normative best practice.

3 METHODS

This study uses a retrospective cross sectional observational cost study to estimate costs from a provider perspective with gross costing methods that will be applied using a top-down

approach to assess the unit costs of the core package of services along the RRTTPR cascade for the cascade steps implemented at the site. This study will focus only on key population-led health services sites (providing services along the whole RRTTPR cascade) as well as on the CBOs providing the CBO-led components of community-based health services (providing services for the RRT cascade steps). This data will be retrospectively record during one year timeframe.

Perspective, scope

This retrospective costing study will take a health care provider perspective considering costs from the point of view of providers. Therefore, there are not only costs from patients and their families side but also costs from service receivers/clients side that will not be included in this study together with other costs from a societal perspective.

The study will assess full costs at the service delivery site-level as well as the costs of training, support and oversight activities above the service delivery site and the costs of the reach and recruitment activities that occur below the service delivery site. The study will also seek to capture start-up costs (costs incurred prior to service delivery including KP mapping and size estimation) in addition to the costs incurred in the delivery of services. In general, it could be classified the start-up activities that conduct during start-up period, as such, the cost of hiring and training staffs, salaries, capital investment and other costs of staffs who are working on the start-up period, which conducting vary from several months up to past 10 years [3].

Study setting

The study will be conducted in a convenience sample of service delivery sites providing services to MSM, MSW, TGW, FSW, and PWID populations as per the recommendation of the *“Collaboration on the Costing of Key Population Interventions to Fast Track the End of HIV in Thailand”*. The study will include all of the KPLHS sites providing services to MSM, MSW, FSW, and TGW as of February 2018. For the model of NGOs providing reach-recruit services for hospitals, the study will use six community-based health service sites providing services to PWID, FSW, MSM as well as the health facilities to which the majority of clients reached, recruited, and tested by these organizations are referred to for treatment. Finally, the study will also include one hospital receiving NHSO fund within the high burden areas serving key populations. As this study

will have a more limited scope, so there will be focus on 13 service delivery sites based-on the RRTTPR cascade Framework. Therefore, the study settings that were chosen consisted of;

Model 1: Hospital-based services - this study will also include one hospital receiving NHSO fund in Bangkok and another one outside Bangkok within the high burden areas (to be selected) serving key populations.

Model 2: CBOs reach-recruit for hospital/mobile services - providing reach-recruit services for hospitals. The study will use five community-based health service sites providing services to PWID, FSW, MSM as well as the health facilities to which the majority of clients reached, recruited, and tested by these organizations are referred to for treatment.

The five community-based health service sites include 1) Ozone Foundation in Tak 2) Rak Thai in Samut Prakan, serving PWID 3) The Planned Parenthood Association of Thailand (PPAT) in Khon Kaen, serving FSW, and 4) two sites under the Thailand MoPH – U.S. CDC Collaboration (Khon Kaen and Udonthani province).

Model 3: Key population-led health services (KPLHS), hospital collaboration - providing services to MSM, MSW, TGW, FSW, and PWID populations as per the recommendation of the *“Collaboration on the Costing of Key Population Interventions to Fast Track the End of HIV in Thailand”*.

The study will include all of the KPLHS sites providing services to MSM, MSW, FSW, and TGW. The six study sites include 1) Service Workers in Group (SWING) that serving mostly MSW in Bangkok and Pattaya 2) Rainbow Sky Association of Thailand (RSAT) that serving mostly MSM and TGW in Bangkok and Hat Yai 3) Sisters that serving mostly TGW in Pattaya and 4) Mplus that serving mostly MSM and TGW in Chiang Mai

Study Design and Methods

Costing approach

Gross costing methods will be applied using a top-down approach where the steps along the RRTTPR cascade will be treated as cost centers. Both financial costs, which capture the resources paid for to deliver goods and services, and economic costs, which capture opportunity costs and value all resources used to provide services even if they are not paid for – i.e. donated goods or services or volunteer labor, will be estimated. For the gross costing, total costs during a one-year timeframe, from January to December 2017, will be determined for each site using financial records on the total expenditure and fixed assets of the site for personnel, recurrent

operating costs, and building spaces. These records will also be used for the recurrent supplies, consumables and equipment for each step along the RRTTPR cascade. Regarding valuation of equipment, other capital items and building space will use replacement prices. Allocation of total cost of study site to each step along the RRTTPR cascade will depend on the input (personnel, recurrent supplies, recurrent operating costs, and building spaces and other capital items). The proportion of space used for each step along the RRTTPR cascade will be measured and used for allocation of general building and recurrent operating costs. Personnel, recurrent supplies, consumables and equipment will be allocated to the steps where they are used. In cases for which the allocation is not clear or resources are used in multiple steps, we will develop rules for systematically allocating resources across relevant steps in consultation with site staff. The number of clients in each key population over the total number of clients will be used to estimate KP specific costs at each step of the cascade. In addition, financial records will be obtained from LINKAGES and USAID to estimate the supportive activities and technical support above the service delivery site that is provided to each site. Estimated costs of each activity will be converted to the local currency unit (Thai baht) values, for base-year 2018 using the consumer price index (CPI).

Data sources

Sources of cost data will be derived from study sites as the main source, both primary data obtained via interviews and secondary data obtained from accounting and financial reports, and hospital databases. While the existing above-site information systems such as LINKAGES monitoring and evaluation routine reports and the e-cascade database (for KPLHS), Global Fund monitoring reports (for the three community-based health service sites), as well as Government Health Information System databases could be used in the validation process for a cross-check. Information will also be gathered from routine electronic systems in each site and this will be supplemented with information from paper records as necessary.

4 DATA COLLECTION

Before starting data collection, permission for data collection will be approved from each study site.

Data collection procedures

1. The study team will recruit the data collection team.
2. The study team perform the organization and system analysis to understand the study site and define cost center and cost identification
3. The training on data collection will be provided to all research staffs.
4. The study team will assign the research staff to coordinate each study site
5. The responsible person of each study site will be invited to the expert meeting for asking feasibility of conducting cost analysis. Cost collection training, data collection form will be also provided in the meeting
6. The responsible person of each study site collect the cost data from their setting together with the supervision from research staffs.
7. Field implementing by the study team using data collection form to verify the cost results and review data for anomalies.

Data collection form

- Overview and context of study sites
- Organization structure form: to understand organization, service system, the to define supporting and functional cost centers
- Form for outputs by cost centers
- Form for capital items and building space collection by cost centers
- Form for salaries, per Diems and other benefits collection by cost centers
- Form for personnel time use by cost centers
- Form for material used by cost centers

5 DATA ANALYSIS PLAN SUMMARY

Quantity of resources used and their unit cost will be presented. Total costs and cost of each component will be estimated for each site and cost center. Average total cost and cost of each component of the RRTTPR cascade output will be estimated. The costs of cascade outputs will be classified by type of key populations. The data will be analyzed in Microsoft Excel, in order to allow for systematic checking and generating of information. Descriptive statistics will be applied where appropriated.

6 ETHICAL CONSIDERATIONS

Study protocol, data collection instrument and other forms will be submitted for ethical consideration and approved by the Institute for Development of Human Research Protections (IHRP), Ministry of Public Health.

Risks

No risk is anticipated to result from this study. The non-physical risks include personal information about individual health workers being shared with study personnel. This can be considered minimal risk, as little or no information of a confidential nature will be collected and all information collected during the assessment will be treated as confidential.

Research burden for participants

The primary research burden for health staff participating in the study is the time spent providing information to the research team. Key population clients receiving services in sampled sites will not participate in this study at the time they receive services. Only a sample of peer mobilizers in the KPLHS model will be interviewed in their capacity as peer mobilizers and not in their capacity as clients of services.

Consent

At each participating site, the study and its objectives will be introduced in meetings with managing staff. Opportunities will be given to ask questions and provide feedback on the study. Managers at each site will be asked to consent to data collection before any data are collected. All staff members interviewed will be asked for written consent. All peer mobilizers interviewed will be asked for written consent. All consent forms will be in Thai and approved by IHRP.

7 TIMELINE

Study timeline (between June – December 2018)

Activities	Timeline/month						
	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Proposal development	✓						
Ethics submission and approval	✓	✓					
Stakeholder meeting		✓					
Training data collectors and piloting instrument		✓					
Data collection			✓	✓	✓		
Data management and analysis				✓	✓	✓	
Drafting final report						✓	✓
Final report submission							✓

8 REFERENCES

1. Thailand National AIDS Committee: Thailand National Operational Plan Accelerating Ending AIDS, 2015-2019. Nonthaburi: National AIDS Management Center, Department of Disease Control, Ministry of Public Health; 2014.
2. Phanuphak N: Key population-led health services. In: Technical meeting on Collaboration on the costing of key population interventions to Fast Track the end of HIV in Thailand. Bangkok, Thailand; 2018.
3. World Health Organization. Making choices in health: WHO guide to cost-effectiveness analysis. Geneva: World Health Organization; 2003.