PROJECT PROPER CARE

PPM-DRIVEN REINFORCEMENT OF PATIENT ENROLLMENT & RETRIEVAL & COMMUNITY ADVOCACY, REACH & ENGAGEMENT PILOT PROJECT FOR IMPROVED TB CARE AND CONTROL IN HO CHI MINH CITY, VIET NAM

SỞ Y TẾ TP HCM
BV. PHẠM NGỌC THẠCH
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PUBLIC HEALTH ASSOCIATION - HCM CITY
HỘI Y TẾ CÔNG CỘNG TP.HCM

YTDP

FREUNDESKREIS FÜR INTERNATIONALE TUBERKULOSEHILFE

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0. GLOSSARY

ACF	Active Case Finding
ACSM	Advocacy, Communication & Social Mobilization
AFB	Acid-Fast Bacilli
CDP	Community DOTS Provider
CHP	Commune Health(care) Post
CXR	Chest X-Ray
DOTS	Directly Observed Therapy, Short-course
DR-TB	Drug-Resistant TB
DTU	District TB Unit
HCMC	Ho Chi Minh City
ICTC	Integrated Counseling and Testing Center
IPT	Isoniazid Preventative Therapy
ISTC	International Standards for Tuberculosis Care
M&E	Monitoring & Evaluation
MDR-/XDR-TB	Multi-Drug Resistant/Extensively Drug-Resistance Tuberculosis
MOH	Ministry of Health
(I)NGO	(International) Non-Government Organization
NTP	National TB (Control) Program
OTC	Over-The-Counter
PHA HCMC	Public Health Association Ho Chi Minh City
PMDT	Programmatic Management of Drug-resistant TB
(S)PM	(Senior) Program Manager
PP	Private provider
PPM	Public-Private Mix
PPMD	PPM DOTS treatment provision model
(N)SP, SS+/-	(New) Sputum-smear Positive/Negative
TB	Tuberculosis
TC	Treatment Complete
VND	Vietnamese Dong
WHO	World Health Organization

1. EXECUTIVE SUMMARY

About 30,000 people die of TB each year in Viet Nam. The country has one of the highest annual rates of new TB infections and currently ranks 12th among high-burden countries in the world. The burden of drug-resistance is similarly high as Viet Nam ranks 14 out of 27 countries with the highest MDR-TB rates. Ho Chi Minh City is one of the regions with the highest TB epidemic in Viet Nam.

Worse yet, the latest prevalence study revealed that the burden of TB is actually 1.6 times higher than previously estimated. It was found that ~59% of patients were not symptomatic or did not seek care for their symptoms and thereby were not captured by the passive healthcare system. Further, over half of the remaining patients sought out private providers (PPs). These PPs significantly impair TB control due to inconsistent and inappropriate treatment. Despite the obvious shortcomings of the private sector, patients lack a viable alternative because government TB services suffer from severe staff shortages limiting operating hours, extending wait times, and decreasing quality of care.

This document proposes an innovative public-private partnership between the Freundeskreis für Internationale Tuberkulosehilfe with the Public Health Association of HCMC, the Pham Ngoc Thach Hospital/HCMC division of the Viet Nam NTP and the Go Vap Commune Health Posts for Preventive Medicine to provide a proactive, holistic and patient-centric TB control solution that addresses the root problems of TB control resulting from passiveness of the traditional healthcare system.

The goal of the partnership is to lower the number of TB mortalities in Go Vap district, HCMC, Viet Nam via active case finding, constructive PP involvement, zero-delay defaulter retrieval and enhanced access, capacity and quality of DR-TB treatment in both public and private sectors.

We will achieve this goal via a novel public-private-mix model of community-DOTS TB care. In this model community members are hired and trained to detect, counsel and provide care for TB patients. Further, PPs in the community are enrolled to collaborate on TB treatment, patient notification and adherence. Lastly, we will facilitate access to necessary diagnostics for suspects as well as ensure rapid response and proper contact management to avoid initial default.

In the first year, the project aims to raise detection by at least 200 new TB patients in Go Vap district, HCMC that would have gone undetected in the passive public health system. In combination with the NTP we thereby plan to manage patient treatment and compliance of 880 cases for which we target a default rate reduction to 4% or less. Based on national MDR-TB prevalence, we estimate up to ~36 MDR-TB in Go Vap district, among which we anticipate to diagnose 8-10 new patients from the private sector. For those patients, we will ensure access and provision of high-quality DR-TB care in line with NTP guidelines, whether with the PP or through transfer to an NTP PMDT site.

Upon completion, we will obtain a proof of concept for a proactive, comprehensive public-private TB care and control solution for marginalized urban communities in close alignment and collaboration with the NTP and its strategic objectives that can help shape national policy and has the potential for future expansion and replication – not just in Viet Nam but in the Southeast Asian region as well.

2. PROJECT OVERVIEW

a. Project title

Project PROPER CARE: PPM-driven reinforcement of patient enrollment & retrieval & community advocacy, reach & engagement pilot project for improved TB care and control in HCMC, Viet Nam.

b. Project goal & strategy

The project's goal is to reduce TB-related mortalities in Go Vap district, HCMC, Viet Nam.

Our strategy is to establish an innovative PPM community-DOTS model integrating public and private sectors that is unique in this form in Viet Nam. The model will focus on raising detection and compliance through active case finding, constructive PP involvement, uncompromising defaulter retrieval and better access, capacity and quality of DR-TB treatment.

c. Project objectives

To accomplish the project's goal of reducing TB-related mortalities in Go Vap district, HCMC, Viet Nam and implement the strategy cited above we have identified the following objectives:

1. Increase community outreach activities to improve the detection rate of TB patients with focus on disadvantaged and hard-to-reach populations;
2. Incorporate and support private-sector TB care to enhance treatment outcomes, holistically strengthen the TB control landscape and improve understanding of true disease burden;
3. Ensure maximum treatment adherence and prevention of drug-resistance through compliance enablement and extensive patient counseling and support; and
4. Improve access, capacity and quality for MDR-TB care within the guidelines of the NTP.

d. Plan of activities

To realize these objectives, the project will employ a corps of counselors and recruit a portfolio of PPs – both sourced from the affected community. Additionally, we will facilitate access to advanced diagnostic capacity and build rigorous project monitoring resources and procedures.

Counselors will be full-time, paid employees of the project, highly motivated individuals, and eager to help their community. They are selected based on continued residence in Go Vap district of 5+ years, age of 35+, physical fitness for the required field work, high school level education or higher and may include former successfully treated TB patients. They will be trained by PNT and FIT on all aspects related to TB and community-DOTS. Their responsibility will be to detect new patients in the community, enroll them with the NTP, provide counseling to them and their families and ensure treatment adherence until completion. This includes zero-delay, i.e., with every missed dose, defaulter retrieval via home visits and additional counseling.

Within their active case detection work, counselors are expected to facilitate diagnosis for the suspects they identify. This effort will include sputum collection and transportation to the NTP laboratories, proper contact management and rapid communication of results to the suspects to avoid initial default. Counselors will be expected to facilitate ancillary diagnostics such as doctor

visits for clinical diagnosis and chest x-rays (CXR) for symptomatic patients with negative sputum results. The project will also enable access to advanced Xpert MTB/RIF diagnostics for MDR suspects and retreatment patients. The plan is to build the required diagnostics capacity and cover ongoing operational costs. The project may also partner with the Oxford University Clinical Research Unit or other affiliates for providing (additional) Xpert capacity.

The project will enroll PPs such as private doctors, pharmacies, clinics, etc. as Community DOTS Providers (CDPs), who local NTP officers know to be treating high TB patient volumes or who are known community leaders with a history or interest in social engagement. CDPs will be enrolled, trained and officially registered to represent the NTP. This will raise detection and treatment quality of private-sector patients, drive transparency into true disease burden and offer patients an alternative to the NTP – a valuable option in the sociopolitical context of southern Viet Nam. CDPs will be allowed to charge for their services, but will be required to adhere to NTP guidelines and provide the NTP's drug regimen free of charge. In return, they will receive counselor support for patient record management, counseling and defaulter retrieval. Additionally, they may be paid an incentive for patient referrals and exceptional performance.

Lastly, the project will leverage a rigorous performance monitoring and data reporting system. Counselors will be responsible for monitoring and reporting of CDPs and patients treated in the private sector. The FIT program director and PHA HCMC program manager will be tasked with field performance monitoring and compilation, digitization and evaluation of operational data for reporting to the NTP. Meanwhile, the PNT hospital and CHP directorate will be responsible for performance monitoring of public-sector patient treatment and evaluation of project performance and alignment with the NTP.

See Appendix II for details on the model, value proposition, NTP collaboration and strategic alignment, Appendix III for the diagnostic algorithm and Appendix IV for a training summary.

Below is the detailed plan of activities:

1. Increase outreach activities to improve the detection rate of TB patients with focus on disadvantaged and hard-to-reach populations.
   - 1.a Hire 9 community-based counselors (each to cover 2 of the 16 wards with a leave reserve stationed at the PNT hospital).
   - 1.b Provide training on suspect identification, patient counseling and education to all counselors in collaboration with PNT hospital and the Go Vap DTU.
   - 1.c Conduct ACF activities in areas with high incidence and low access to TB control services to increase case detection.
   - 1.d Collect and transport sputum and rapidly communicate results to TB suspects.
   - 1.e Facilitate ancillary and clinical diagnosis to symptomatic SS- patients.
   - 1.f Register new patients with the NTP and counsel patients, families and community members at the hospital, the DTU or the patient's home upon treatment initiation.
2. Incorporate and support private-sector TB care to enhance treatment outcomes, holistically strengthen the TB control landscape and improve understanding of true disease burden.

2.a Identify and enroll 16 private healthcare providers currently providing diagnostics and treatment for TB patients as community DOTS providers (CDPs) within the project.
2.b Organize training courses on NTP guidelines for management, care and treatment of TB patients for CDPs and field staff.
2.c Refer TB suspects to CDPs, if requested by the patient, for diagnosis and treatment.
2.d Support CDPs through counseling for private-sector patients as needed.
2.e Register enrolled CDPs with the NTP as official DOTS providers with access to free medicines and diagnostics for treatment of patients enrolled in the project.
2.f Compile and report monitoring results of patient treatment activities with CDPs in accordance to DTU requirements.

3. Ensure maximum treatment adherence and prevention of drug-resistance through compliance enablement and extensive patient counseling and support.
   3.a Hire a full-time program manager (PM) to oversee operations as well as to monitor and improve treatment adherence in the public and private sector.
   3.b Obtain and manage patient contact information meticulously to prevent initial default, particularly in the case of transfers from the TB hospital to the DTU and from the DTU to the commune health posts and CDPs.
   3.c Train all field staff on treatment adherence and compliance enablement methods.
   3.d Conduct home-visits for treatment administration and targeted counseling with every missed dose for both public- and private-sector patients of the project.
   3.e Involve PMs, DTU officers and patient doctors for repeatedly non-compliant patients.
4. Improve access, capacity and quality for MDR-TB care within the guidelines of the NTP.
   4.a Notify NTP of MDR-suspects after completion of each treatment stage.
   4.b Provide DOTS Plus training to counselors, CDPs and public healthcare staff, as needed.
   4.c Enable advanced diagnostics for qualifying patients such as retreatment patients and MDR-suspects unresponsive to first-line treatment.
   4.d Report and enroll private-sector MDR-TB patients with the NTP's PMDT facility, if so desired by the patient.
   4.e Provide specialized, intensive care and counseling for private-sector MDR-TB patients.
   4.f Monitor CDPs for responsible use of MDR-TB regimen in accordance to NTP guidelines.

e. Organizations & responsibilities

- The Freundeskreis für Internationale Tuberkulosehilfe e.V. (i.e., Friends for International TB-Relief or "FIT") will provide technical, project management and administrative assistance. FIT is a German NGO with headquarters in Munich, Germany. FIT will work on a day-to-day basis with the implementation agency to provide the necessary guidance to details such as training material, M&E tools, SOPs, etc. regarding the community-DOTS model. Aside from that, FIT will explore strategic partnerships with other INGOs (PATH, MCNV, PSI, etc.) and will engage in fundraising, budgeting, and local project oversight.
- The Public Health Association of Ho Chi Minh City ("PHA HCMC") is the implementing agency of the project. PHA HCMC is a professional, legally registered society. The Association is responsible for implementing the project, carrying out all required procedures for

registration with and approval by the People's Committee of HCMC and the HCMC Union of Friendship Organizations. PHA HCMC will be the main responsible party for human resource and fund management, local stakeholder management, day-to-day operations management and the overall successful deployment of the project.

- Pham Ngoc Thach Hospital ("PNT") and the HCMC division of the NTP are the government's technical authority. Their responsibility is to coordinate project deployment and monitoring to ensure compliance with national guidelines of the NTP, provide project staff training, offer technical assistance and evaluate overall project impact and success.
- The Go Vap Commune Health Posts for Preventive Medicine ("CHP") and the Go Vap District TB Unit ("DTU") are the government's representatives for the implementation of the project in Go Vap district. Their responsibility in close collaboration with the other organizations is to coordinate and integrate the activities of the project with existing TB control activities to accomplish the goals of the project.

f. Location & scale

Based on the results of discussions between PHA HCMC and FIT with PNT, the consensus was to select Go Vap District as a place to pilot the project based on its high population density, high incidence of TB, large number of impoverished quarters and sizeable share of underserved, domestic migrants.

According to the Go Vap CHP, as of 2012 there were ~595,000 people with a migrant share of 47%. Based on population size and incidence (200/100.000), each year Go Vap District will have almost 1,200 new patients with TB. According to the Go Vap DTU, in 2012 only about 680 new cases in Go Vap District were enrolled with the NTP. For the pilot, we aim to detect at least 200 new patients from the private sector to raise case notification rate by 15+ percentage points. For the project's target of 880 total cases, we aim to achieve a default rate of 4% or less through our defaulter retrieval support for a 20% improvement over 2012 baseline (5%).

Applying the national MDR-TB prevalence estimates of 2.7% for new and 19% for retreatment pulmonary TB cases, we anticipate ~36 MDR-TB cases within the total 880-case patient population. Of these, 8-10 cases are expected to originate from the 200 new cases identified from the private sector, for which the project will ensure appropriate treatment in adherence with NTP guidelines, whether with the PP or through transfer to an NTP PMDT site. See Appendix VI for detail on how these detection targets and indicators were derived.

If successful, based on feedback from national and regional NTP leadership, this project and its involved parties have the opportunity to expand to other districts such as District 12 in the second year. If after two years the results continue to be positive, the project has the potential for further expansion in the city.

g. Timeline of operations

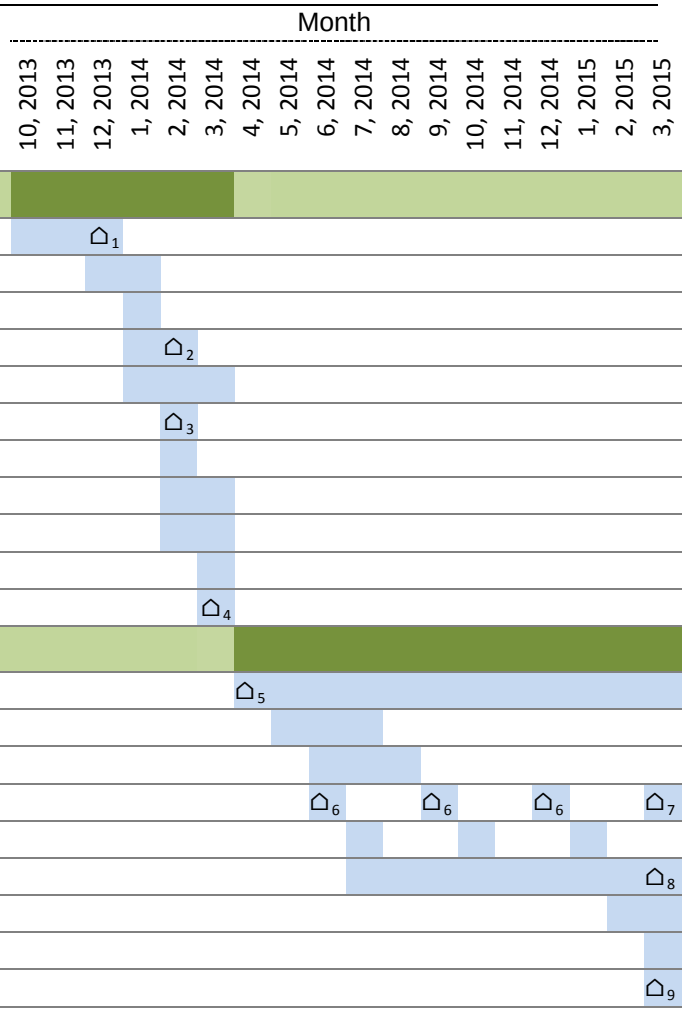
The timeline of the project is divided into two phases. Phase 1, the project setup phase, is expected to last from Oct-2014 to Mar-2015, while phase 2, the implementation phase, will run for one year from April 1st, 2015 to March 31st, 2016.

Key activities and milestones in phase 1 include finalizing the proposal and the terms of engagement as well as clearing all necessary internal approval processes (Milestone ⌂1), which is expected to be completed by year-end 2014. The subsequent key activity includes submission of the project proposal for approval from the local authorities of Ho Chi Minh City (⌂2), which is anticipated to be provided by Feb-2015. Once local authorization has been issued, the remaining project preparation steps can be initiated. However, unlike the previous key activities, most of these remaining project setup activities can be completed in parallel. One key milestone (⌂3) during this stage is the transfer of the first tranche of funding to Viet Nam. The other key activities include hiring of a program manager, surveying of the relevant project sites and areas, organizing project kick-off conferences for government stakeholders and private providers and subsequent enrollment of the CDPs. The final activity and milestone of phase 1 will include the recruitment and training of 9 counselors, which is expected to be completed by Mar-2015 (⌂4).

The implementation phase will mainly revolve around project kick-off (⌂5) and management of day-to-day operations. After one quarter of operations and the submission of the first quarterly progress report (⌂6), the program managers will refresh CDPs on their responsibilities and NTP guidelines and will determine the need for enrollment of additional CDPs, which should be completed by the end of Q3 2015 and submission of the third quarterly progress report (⌂6). Following review of the progress report, additional funding tranches are expected to be released. Meanwhile, starting Q2 2015, FIT will initiate fundraising activities for year 2 of operations with the target to have completed funding (⌂8) concurrently with the final project completion report (⌂7) by Q1 2016. During this quarter, the project will hold final result presentations and all stakeholders will meet to decide on project continuation and expansion (⌂9). The next page contains a high-level Gantt chart for the project, while Appendix VII contains a more detailed workplan aligned with the activities of the project.

Project PROPER CARE timeline, 2013-2015

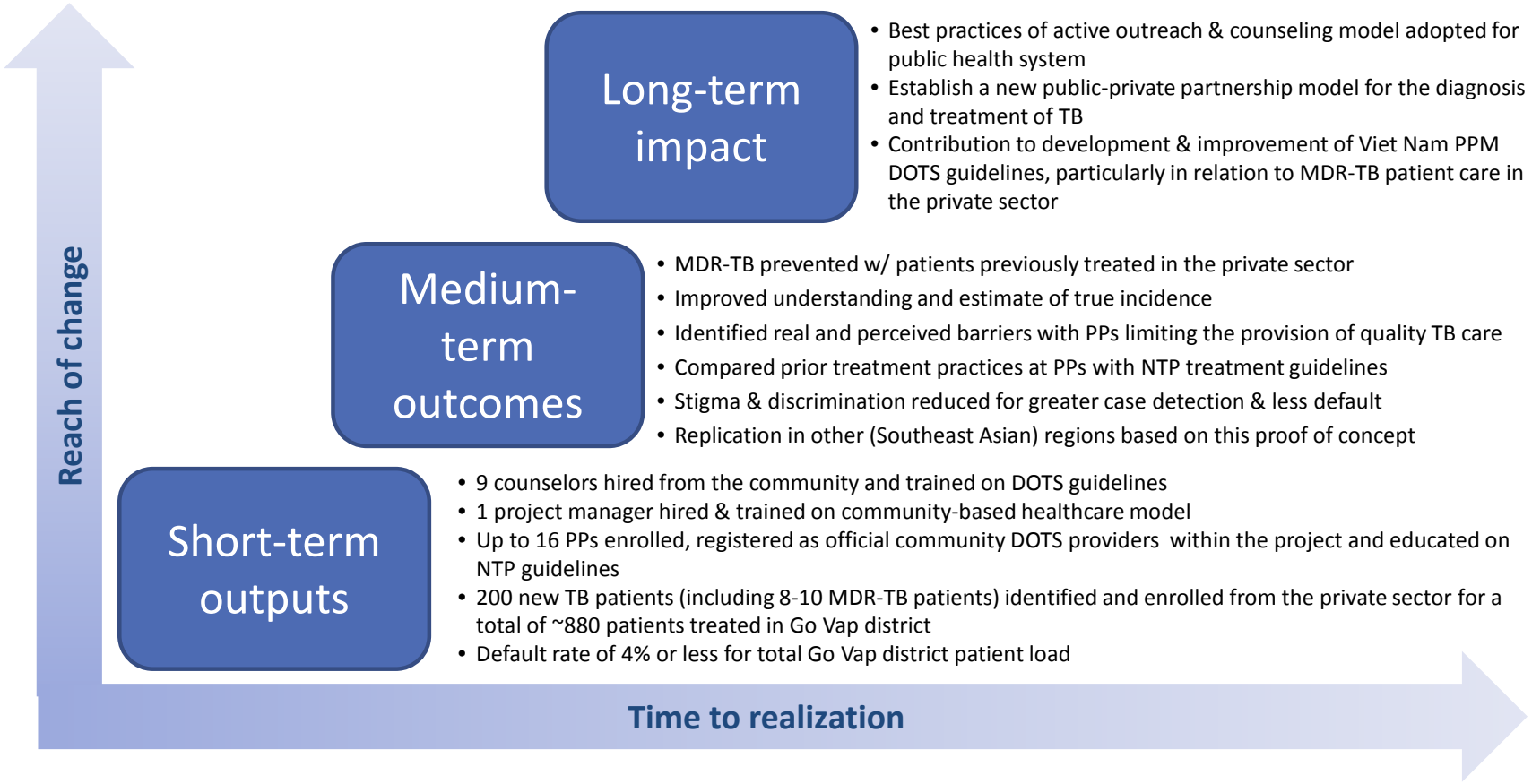
Plan of activities



⌂ = Key milestones

h. Outputs, outcomes & impact

The project is expected to yield various short-, medium- and long-term benefits for the overall TB care and control ecosphere – both from a local perspective as well as on a national scale. While the majority of benefits in the short-term will be directly measurable results on local TB care and control such as patients detected and cured, capacity built in the community and fewer defaults, in the medium-term, evaluation of project findings and experiences are expected to lead to a greater understanding of the private sector as it relates to TB treatment as well as real and perceived barriers to adherence to national and international guidelines. In the long-term, the project is expected to provide a platform for advocacy and to influence policy-making on a national scale, particularly with regard to proactive TB care and control, general PPM DOTS and specifically MDR-PPMD.



3. PROJECT BUDGET

The total budget for the pilot project is expected to be USD 50,929, which includes direct costs of USD 40,946 (80% of total budget), indirect expenses of USD 7,429 (15%) and one-time expenditures of USD 2,554 (5%).

DETAILED BUDGET						
	Unit	*Unit cost/ month*	*Unit cost/ year*	*Total (VND)*	*Total (USD)*	*%*
Program budget						
Direct costs						
Salaries and allowances						
Program manager	1	10,000,000	140,000,000	140,000,000	6,667	13.1%
Counselors	9	3,500,000	45,500,000	409,500,000	19,500	38.3%
Staff bonuses	1	n/a	75,000,000	75,000,000	3,571	7.0%
Diagnostics	1	16,280,000	195,360,000	195,360,000	9,303	18.3%
Local TB advocacy	12	n/a	2,000,000	24,000,000	1,143	2.2%
CDP incentives	16	n/a	1,000,000	16,000,000	762	1.5%
Indirect expenses						
Program management & oversight						
PHA HCMC	1	5,000,000	60,000,000	60,000,000	2,857	5.6%
PNT Hospital	1	3,000,000	36,000,000	36,000,000	1,714	3.4%
Facilities	1	3,000,000	36,000,000	36,000,000	1,714	3.4%
Other admin	1	2,000,000	24,000,000	24,000,000	1,143	2.2%
One-time expenditures						
Advocacy and conference fees	3	n/a	6,666,667	20,000,000	952	1.9%
Recruitment and training of staff	10	n/a	1,890,000	18,900,000	900	1.8%
Project registration	1	n/a	5,000,000	5,000,000	238	0.5%
Emergency provision	1	n/a	9,740,000	9,740,000	464	0.9%
Total - Program budget				**1,069,500,000**	**50,929**	**100.0%**

Direct costs

- Within the direct costs, USD 29,738 (58% of total budget) is used to pay the salaries, allowances and bonuses for employees managing and carrying out day-to-day operations.
- The PHA HCMC PM is budgeted a monthly salary of USD 476 and will commence one month before project kick-off to assist in preparation and recruitment efforts of counselors and CDPs. The PM's salary budget also includes a Tet (New Year's) bonus customary in Viet Nam of one month salary.
- 9 counselors are expected to be hired with project kick-off in April and will be paid a monthly salary of USD 167 including allowances. Similar to the PM, the budget includes a Tet bonus for counselors of one month salary.
- The budget includes staff bonuses of USD 3,571 (7%) for the year. The staff bonus breaks into monthly detection bonuses for counselors (and CDPs, if detections were via notification/referral) and year-end project achievement bonuses for counselors and the PM.
  - The monthly detection bonus is calculated based on the number of new detections minus the number of defaults among the public- and private-sector patients managed in the counselor's area of responsibility. These net detections are paid at a rate of USD 9.50 per detection.
  - For patients detected through a CDP, the bonus is split 50%/50% for CDP and counselors.
  - The project achievement bonus amount results from subtracting the monthly bonuses from the total bonus budget. It is awarded if the total number of gross detections surpasses the target of 880

and if a district-wide default rate of 4% or less is achieved. This bonus is paid out in relation to each counselor's individual detection and default rates. The PM receives the median bonus.

- 18% of the budget (USD 9,303) is dedicated to facilitating diagnostic testing. This includes the cost to support sputum smear diagnosis for a ~2,000 tests (assuming a 10% conversion rate) at the Go Vap DTU of USD 143 per month. Furthermore, it includes budget for ~500 CXR and ~500 Xpert screenings of USD 152 and USD 480 per month. These estimates are based on costs of USD 3.80 and USD 12.00 per CXR and Xpert cartridge including shipping and wastage, respectively.
- 2% of the budget (USD 1,143) is reserved for ongoing ward-level TB advocacy and awareness efforts such as printing of fliers and posters, hosting small information events, etc.
- Lastly in terms of direct costs, the budget includes a USD 762 (2%) year-end incentive to the top three CDPs in terms of TB patient notifications.

Indirect expenses

- 9% of the budget (USD 4,571) is budgeted for overall program management and supervision by PHA HCMC and PNT hospital at a monthly rate of USD 238 and USD 143, respectively. The former amount is paid towards management of regulatory compliance, human resources and accounting. The latter is a contribution towards public-sector treatment management and supervision at the CHPs.
- A total of USD 2,857 (6%) is budgeted for facilities (USD 1,714) and admin charges (USD 1,143) for shared office space, internet, telephone, office consumables, etc. paid to PHA HCMC.

One-time expenditures

- The project will host two conferences prior to project kick-off and one at its end at a total cost of USD 952 (2%). One of the kick-off conferences will be held for PPs to introduce the project and solicit participation. The other two will involve government stakeholders from the Department of Health, the NTP and other relevant entities related to the project. The objective is first to sensitize and later to present results in anticipation of potential replication and city-wide expansion.
- One-time expenditures of USD 900 (2%) are budgeted for recruitment and training of staff. This includes translating and combining existing community-DOTS training material with NTP guidelines, covering recruitment costs and holding training sessions for PM and counselors.
- Registration costs of USD 238 include translation of documents, notarization & filing fees, etc.
- The final item is an emergency provision of USD 464 (1%).

APPENDIX

I. SITUATION ASSESSMENT

a. Viet Nam TB epidemiology

In Viet Nam, according to WHO estimates about 30,000 people die each year (one death every 18 minutes) from TB. Prevalence is cited to be 290,000 cases for a rate of 334 per 100,000 people. With an estimated 180,000 new TB cases per year and an estimated incidence rate of 199 per 100,000 inhabitants, Viet Nam ranks 12th among the 22 countries bearing 80% of the global TB burden. (1,2) These new annual cases include an estimated 3,700 new MDR-TB cases. (1) With respect to MDR-TB, Viet Nam ranks 14 out of 27 of the countries with the highest rate of drug resistance. (3)

Particularly within the segment of 19-25 year-old (male) patients, Viet Nam faces a significant challenge as TB incidence has grown quicker within this segment than most other nations, which is suspected to be in part driven by labor-related migration from rural and remote geographies to urban centers with poor living conditions and challenging employment. The other drivers of elevated TB incidence in this segment are cited to be potential drug abuse and HIV development, which in turn raises the proclivity towards the development of TB. (4,5)

b. TB control efforts in Viet Nam

The Government has recognized the impact of tuberculosis on poverty and development with TB control efforts cited as far back as 1957. It has included TB control in the interventions to implement the Poverty Reduction and Growth Strategy. Since the Government declared TB a national priority in 1995, Viet Nam's National TB Program has expanded the WHO-recommended DOTS strategy to all districts and communes, reaching 100% population coverage by 2003. This expansion has resulted in a three-fold increase of notification rate between 1995 and 2005. (4)

The NTP and partners are already reacting to the challenge of detecting more cases by planning rapid and effective implementation of new components of the Global Stop TB strategy. In 2010, the MOH launched the Viet Nam Stop TB Partnership, a coalition of national and international partners for TB control. (6) The WHO is expected to play a major role to assist the Partnership fulfill its role and expectations of a consultative and coordinating body. Similarly, since 2002 the WHO has actively supported collaboration between the national TB and AIDS projects, which in August 2007 led to a joint strategy for HIV and TB control. (7) Similarly, the ISTC has been translated into Vietnamese for easier propagation and education of providers with regard to standardized TB treatment regimen. (8,9) More recently, ACSM activities have also increased with some involving novel schemes such as monetary incentives for attendance. (10)

However, given the country's aim to eliminate the disease by 2030, Viet Nam is cited to need $340 million for a plan to halve the number of new tuberculosis patients in the 2011-2015 period of which currently only a fraction has been secured. (11) Furthermore, while a limited number of PPM DOTS pilot projects have been initiated with large multi-lateral organizations, sources recommend accelerating the number and growth of collaborative projects. (12,13,14)

c. Inhibitors to TB eradication

Unknown true incidence

Figures from Viet Nam's Ministry of Health show detection and cure rates well above the global targets set by the WHO – the only of the 22 high-burden countries to do so since 1997. (15) However, in spite of this excellent performance, notification rates have not shown any significant decline over the last thirteen years. (4,15) Furthermore, the national TB prevalence survey conducted in 2007 recently reported that Viet Nam's TB burden was 1.6 times higher than previously estimated with ~59% of patients not showing symptoms or even seeking care for them and thereby not captured by the passive public healthcare system. During a 2009 workshop the re-calculated case detection rate has been reduced from 82% to 62%. (2,16) Based on the latest WHO estimates, case detection rate seems to have been further down-adjusted to 54%. (1) However, given these developments, true incidence seems to suffer from a sizeable variance and uncertainty and may require more initiatives of TB control involving communities and private-sector.

Private provider failure

The private sector in Viet Nam constitutes a significant risk factor and inhibitor to successful TB control, particularly in urban sectors. According to several research studies, private providers (PPs) represent the first point of contact for the majority of patients – over half and up to 82% of patients in several studies – and over 40% of the TB cases in one study were treated entirely in the private sector. (14,17,18) However, treatment quality has been cited to vary with long diagnosis times and "doctor" delays as well as limited efforts applied to adherence and defaulter retrieval. (10,19,20,21)

As a result, despite the increase in detection observed in the PPM pilots in Ho Chi Minh City, ultimately, results were hampered by a high number of (initial) defaults resulting in part from poor contact information management and lack of DOTS application. (8,9,18) Meanwhile, the high cost burden for the patient due to the out-of-pocket payments and the economic conflict of interest of the PPs between service quality and profitability likely worsened the situation instead of improving it. (19,22)

Healthcare capacity restrictions

The healthcare infrastructure in Viet Nam seems to be highly developed down to the commune level with Commune Healthcare Posts (CHPs) present in approximately 11,000 communes in the country. (23) Particularly related to TB, commune health workers are also required to visit TB patients at their home once a month. Finally, the voluntary health insurance system alleviates cost burden for patients and all TB-related services and drugs free of charge through government institutions for qualifying patients. (23,24)

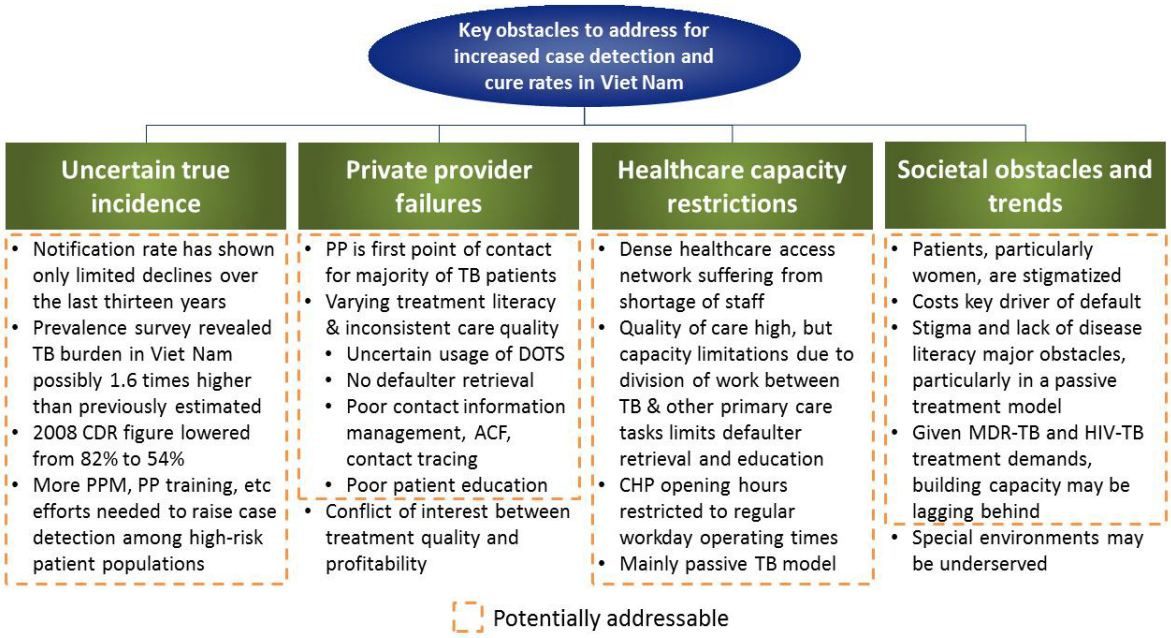
However, there may be capacity limitations impeding further gains in fighting TB. As reported by the Ministry of Health, Viet Nam continues to suffer from a paucity of staff with adequate treatment literacy, which is "affecting TB control project activities in the community." (25,26) Furthermore, the capacity for care of public health workers seems to be limited as they are required to divide their responsibilities due to various sources of funding for salaries from within the MOH. (10)

Compounded with the migration of public health workers into the private sector and other adverse factors, this may further limit efforts on defaulter retrieval and patient/community education. (25,26,27) Ultimately, the lack of staff limits health center opening hours, physician face-time and most importantly high patient care quality, which may inconvenience patients, impair trust in the public health system and impede progress in TB control. (10)

Societal obstacles and trends

As with many developing countries, stigma, poverty and limited disease literacy have been shown to represent a significant obstacle to successful TB control, particularly with passive treatment models. Women in particular seem to suffer from this root problem as research studies have shown that among female patients drivers of poor treatment compliance was mainly social stigma in addition to weaknesses in the provider system. (28,29)

In summary, these four factors represent four of the main root causes that serve as obstacles to increasing the effectiveness of TB control in Viet Nam. This project aims to address these obstacles through its community- and outreach-based model.



II. PROPOSED SOLUTION

a. The detailed treatment model

Counselors for outreach-based TB care

Counselors are the backbone of the project. They are recruited directly from the affected communities to ensure that local knowledge about people and culture is preserved, while providing patients with a familiar face and trusted point of contact to approach for TB and lung disease-related issues. Generally, these individuals are identified through three ways: a) referrals by the local TB control staff and other contacts, b) prior engagement in social work and community activities, particularly if related to TB or c) person who has been affected by TB directly or indirectly.

Hence, upon entering a new community, TB control staff and local community leaders are asked to identify socially active individuals, who might be interested in serving as TB counselors. If those individuals cannot easily be found, the local TB hospital is requested to provide a list of TB patients cured in the past year. Those are then contacted under the "pay-it-forward" premise, i.e., someone helped them overcome the disease, when they suffered from TB, so by serving as counselor to other patients they can reciprocate the help received with the community.

These counselors are subjected to an intensive training course with evaluative final assessment. The training material includes TB and DOTS, patient categories and treatment, counseling and communication, food and nutrition, the roles of NTP, NGO, CDPs, and PMs as well as common challenges encountered in the field. Additionally the training includes DOTS Plus as well as general reporting standards and requirements. Once the counselor's training is completed they are returned to the field, generally under close observation and supervision of their program manager and if available a more experienced counselor to shadow.

Once active in the field, their main tasks are to find patients, facilitate treatment adherence, retrieve defaulters, and educate the community about TB as well as informally train and monitor their CDPs. In particular, they undertake the following activities:

- **The foremost activity is to detect patients.** Counselors are thoroughly trained on symptom recognition and financially incentivized to "look" for and identify suspects daily, mainly through door-to-door detection or at community areas of congregation such as markets and temples. These suspects are encouraged to go to a nearby diagnostic lab for TB testing. If that is not possible, the counselor arranges transport and an appointment to take patients or their sputum sample to the lab. If public diagnostics capabilities are insufficient, it is possible to establish access to diagnostics capabilities through a partner such as a private laboratory or other entities with existing diagnostics capacities. Patients who test positive, as well as those who test negative but continue to display symptoms of TB, are taken to the chest specialist for free consultation in the public hospital. Those advised anti-tubercular treatment are first provided counseling and then enrolled in the therapy. To drive further active case detection, counselors engage in contact tracing of family members of patients currently under treatment. Counselors refer all patients to ICTCs for HIV testing and enroll high-risk patients, particularly children, in

chemoprophylaxis treatment (IPT), while all TB cases, if suspected of MDR-TB, are assessed and reported during each treatment stage.

- **Counselors retrieve defaulters and ensure compliance.** During intensive phase patients have to visit centers six days a week in Viet Nam to ingest their drugs under supervision. At days end, the counselor is expected to connect with the CDP and public health staff. If they report to the counselor that a dose was missed, the counselor goes to the patient's house the following day, gives the medicine and provides further counseling to ensure that the patient joins the therapy again. For repeat offenders, particularly common among retreatment patients, the counselor involves the CDP, the PM, DTU officials and the patient's physicians to enforce compliance. To facilitate defaulter retrieval, counselors are responsible for obtaining and meticulously managing patient contact information.
- **Counselors work to alleviate the burden of treatment for their patients.** The project may provide OTC drugs through the CDP free of charge whenever a patient complains of common side effects like pain in the abdomen, acidity or vomiting. These are given not just to TB patients but to anyone in the community who needs them to provide camouflage for patients uncomfortable with public knowledge of their disease. For patients too poor to afford food, on individual cases food assistance may be provided to facilitate digestion and absorption of the medicines. Sometimes, a TB patient may develop serious side effects; in that case, they are advised and if necessary accompanied to visit an NTP physician at PNT hospital. Similarly, leveraging the NTP's DOTS Plus training, intensive care and counseling is provided to MDR-TB patients due to the increased time commitment and drug regimen required.
- **Proactive education to patients, their families and the wider community.** Apart from their other duties, counselors visit conduct contact tracing and outreach work to educate the patient's family and wider community about symptoms of TB. Particularly for new patients, counselors hold multiple counseling sessions with the first session held immediately after detection of the patient, in which the family has to be present during this session. With regard to the wider community, counselors will engage in door-to-door detection activities and may lead ACSM and awareness events together with the wider project team and NTP members for disease literacy improvements.

Counselors are supported and monitored by our program managers, who evaluate counselor performance, assist in tracking and retrieving defaulters and coordinate project efforts with district and province NTP officers.

Community DOTS Providers

While counselors serve as the outreach capacity within this treatment model, the Community DOTS Providers' role consists of a stationary point of contact and treatment for private-sector patients during those hours in which counselors are performing their outreach work or are off-duty. They will serve as the private-sector counterpart to the CHP's and other public sector NTP infrastructure.

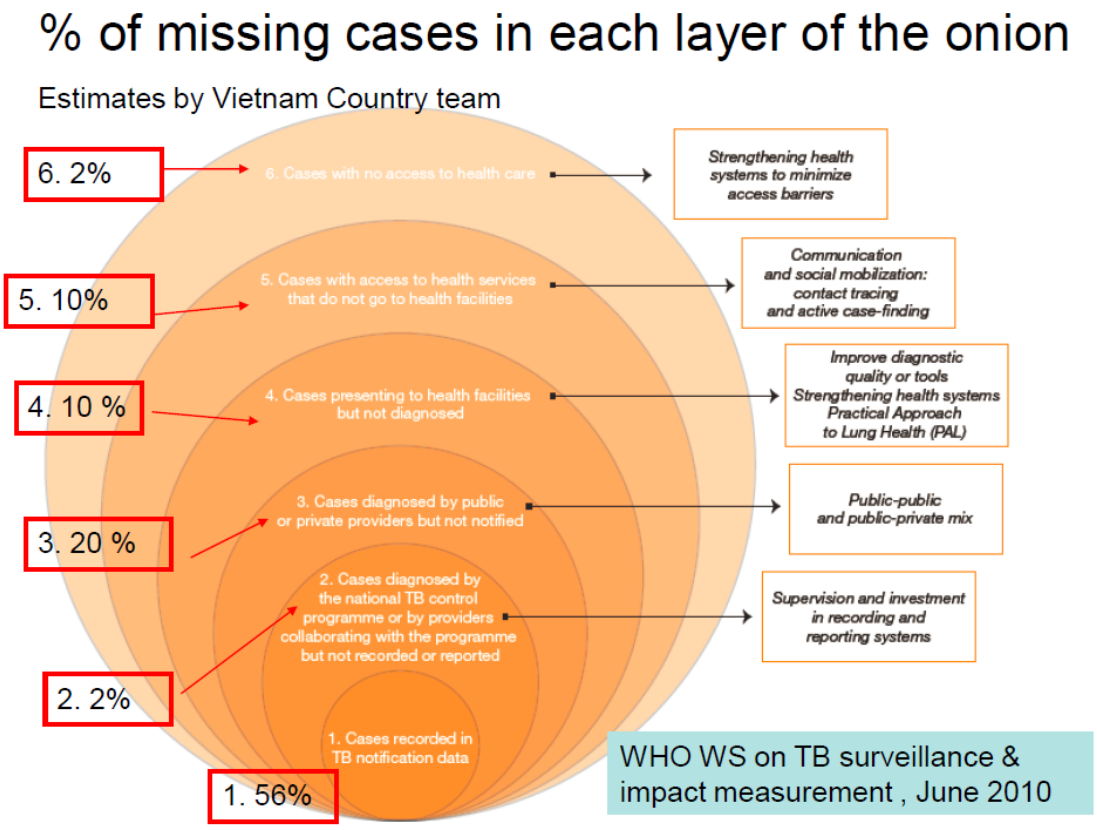
The idea is to establish a comprehensive, ward-level TB treatment network in urban slums by locating centers deep within the affected communities. Many of them may be accessible only on foot.

These CDPs are generally chosen from responsible and trusted, local healthcare providers or pharmacists with a long-standing position within the community and a history of community engagement and who are known to encounter a high volume of TB symptomatic suspects and TB patients. As opposed to other community leaders, private providers and pharmacists are chosen as CDPs, because they possess the valuable expertise in local healthcare provision, while offering further camouflage to patients from stigma and discrimination as they are approached by patients suffering from a multitude of ailments.

Once chosen, these CDPs receive informal training on DOTS and official NTP guidelines and are continuously monitored by the counselors. Enrolling CDPs offers a low-cost solution for establishing a treatment network for high-quality, NTP-approved TB treatment, while generating additional footfall, business and admiration for these providers. The prime benefit, however, is that CDPs offer extended opening hours that increase convenience for the patients to obtain treatment outside of working hours, so that they do not have to miss work to take their medicine.

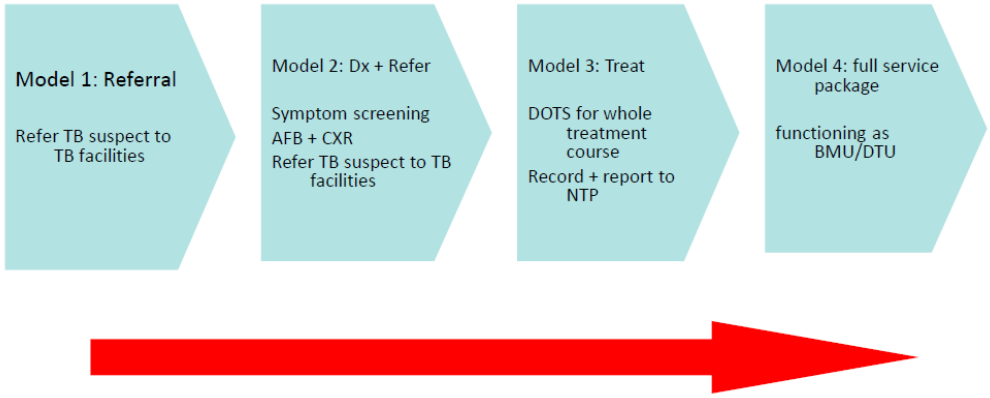
b. Addressing the gaps

The chart below illustrates an estimated quantification of the missing cases not receiving appropriate TB treatment due to the aforementioned inhibitors of TB care and control. Based on the description of the proposed intervention above, it may be postulated that the project may be able to address gaps 3-5 through its PPM DOTS, advanced diagnostics and ACSM/ACF activities with the potential to reach almost all of the missing cases identified by the WHO. (30)



c. What's the innovation – PPMD landscape & proposed structure

The current PPMD landscape in Viet Nam is categorized by four distinct models with increasing service-levels and responsibilities: 1) the referral model, 2) the diagnosis and referral model, 3) the treatment model and 4) the full service package as illustrated below. (30) However, upon further reflection it becomes apparent that none of these models may adequately address the key failures of TB control, which are 1) the passivity of the health system, 2) the patient's internal inertia and limited disease literacy to seek appropriate treatment and 3) the private provider's inherent economic conflict of interest in referring patients to NTP and public health facilities.



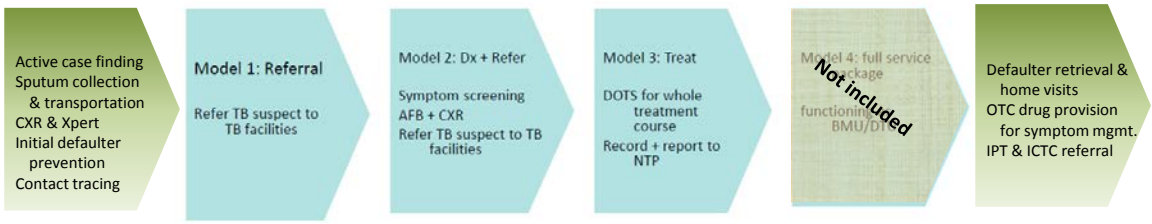
Furthermore, when reflecting upon these models, one may notice that while the segmentation attempts to drive vertical integration between the different models, it appears to leave the horizontal integration unaddressed. (30) Particularly, current PPM project may display a lack of establishing linkages and addressing gaps between public and private sector treatment as the landscape of current PPM projects outlined below illustrates. Aside from the low number of PPM initiatives in Viet Nam, few seem to cover multiple horizontals and or involve support of NTP efforts.

	Model 1: refer	Model 2: diagnose	Model 3: diagnose + treat	Model 4: Full service = DTU
Private pharmacy / clinic	NTP PATH URC PSI			
Private hospitals		PATH		URC – 1 site
Public non-NTP	URC	WHO-CIDA Life GAP NTP CDC	Medical Military University (MMU) – border areas	

Through this project, the plan is to address the shortcomings identified in the four PPM models as well as the lack of horizontal integration exhibit by current PPM projects.

Firstly, as shown below we propose a Model 5. Within this model the idea is to extend vertically further and achieve a pre-Model 1 and post-Model 4 value proposition. However, the intention is not to build the capacity to offer a full service model as proposed in Model 4, but leveraging synergies from existing infrastructure in support and complementation of these services with active outreach, detection and retrieval. Aside from addressing passivity, the model aims to address lack of awareness and disease literacy as well as the economic conflict of interest through continuous counseling and support, ACSM activities and the provision of economic incentives to PPs for referrals and greater collaboration with the NTP.

Model 5: Active outreach, detection and retrieval to leverage and complement existing infrastructure



Patient and contact counseling & psychosomatic support

ACSM & community awareness building

Financial incentives to PPs & counselors

Secondly, the model is intended to reach beyond the illustrated horizontals and be inclusive of NTP services. While the idea of a PPM project support NTP service may evoke a sense of creation of redundancy and unnecessary effort, as mentioned previously, government TB control institutions are reportedly underfunded and understaffed. Among other reasons, this lack of capacity may have resulted in a loss of confidence and subsequent avoidance of its service.

PPM Models in Vietnam plus Project PROPER CARE

	Model 1: refer	Model 2: diagnose	Model 3: diagnose + treat	Model 4: Full service = DTU	Model 5: active system strengthening
Private pharmacy / clinic	NTP PATH URC PSI				**PROPER CARE[a]**
Private hospitals		PATH		URC – 1 site	**POSSIBLE BUT NOT IN SCOPE**
Public non-NTP	URC	WHO-CIDA Life GAP NTP CDC	Medical Military University (MMU) – border areas		**PROPER CARE[b]**
NTP					**PROPER CARE[c]**

Notes: (a) FIT & PHA HCMC's enrollment of PP; (b) Go Vap CHP; (c) PNT Hospital/HCMC division of NTP

While these depictions may simplify the current PPM landscape and models employed, they serve to illustrate the innovativeness of the holistic value proposition of project PROPER CARE – benefits that have been recognized and welcomed by the country's Stop TB Partnership representative as well as members of the NTP from the national to the district level as a new addition to the PPM landscape of Viet Nam.

d. NTP collaboration

The project is designed to focus on a strong cooperation and partnership with Viet Nam's National TB Program. The intent is fill gaps and create synergies rather than to offer a substitute solution and to drive collaboration rather than competition. Hence, the project aims to integrate many of the already existing facilities and capabilities established by the government.

As such, part of the role of the counselors is to facilitate patient uptake of government services whether it is by educating patients about the value of government products and services offered or by arranging transport and physically accompanying patients to the appropriate facilities. In essence, the project's counselors represent nothing but an extension of the government's reach into underserved areas to make sure government services intended for the entire population in fact reaches everyone, particularly those often overlooked.

Furthermore, the project aims to assist the DTU and its health workers in assuming those time intensive tasks that may be deprioritized when workloads increase or those that are not routinely conducted, particularly in light of the shortage of staff experienced within Viet Nam's health system. Those tasks include intensive case finding activities (e.g., active suspect identification, sputum sample collection and diagnosis facilitation, contact tracing, etc), multi-level defaulter retrieval (i.e., involving multiple stakeholders ranging from counselors and program managers of the project team to DTU health workers, the patient's physician as well as their family and community), as well as conducting community education and TB awareness activities. In addition, we intend to make the training material and capacities available to the DTU to assist in capacity building and knowledge management efforts, if needed.

As mentioned previously the provision of OTC drugs to combat the side effects of treatment as well as other minor adjunct schemes may be explored. Those include a financial subsidy for parents with TB that would have otherwise forced their children to leave school and work to compensate for lost income as well as food subsidies for patients too poor to obtain sufficient nourishment to prevent regurgitation of the ingested the medicines.

In turn, the project depends on NTP cooperation to be able to access the existing healthcare infrastructure and be able to offer those to patients without placing additional financial burden on them. This healthcare infrastructure typically includes access to physician diagnosis services related to diagnosing TB, sputum smear testing for TB diagnosis and subsequently medicines for treatment of TB.

As part of the collaboration, government TB officers such as PNT staff are expected to be actively involved in the project's operations through monitoring & evaluation activities, quality audits and center visits. However, this could also include active data evaluation and feedback provision or even

conducting patient interviews regarding our service quality. NTP employees are also encouraged to attend staff meetings with counselors to gain a better understanding of the issues faced in the field and to provide insights, experiences and perspectives from the public angle.

While this NTP collaboration structure has been tested in other countries, ultimately, the collaboration aims to foster an active partnership between the different organizations involved, particularly between the public and private entities. The bottom-line is that there shall be continuous active communication between both parties to strengthen the partnership as well as optimize the impact of project PROPER CARE and the benefit to the patients.

e. Alignment with the NTP's Strategic Plan

As stated in the NTP's 2011-2015 strategic plan, "considering the large proportion of symptomatic suspects visiting pharmacies, private clinics, or general hospitals first, Public Private Mix projects seem to be very important activities for the Vietnamese NTP to reduce underreporting of notified cases, increase case-finding, and improve treatment outcomes." (31) The NTP expects that such projects could ensure better links between the NTP and both public and private health care facilities. One key component to achieving these better links would be by providing training and resources for proper diagnosis and treatment of TB and by improving notification of cases by these facilities to the NTP. Given this overarching mandate, project PROPER CARE seems to be seamlessly aligned with the NTP's near-term strategy and initiatives.

For the period from 2011-2015, the NTP has issued two main goals, which are:

1. In 2015 the TB prevalence in Viet Nam will be half of the estimated incidence in 2000; and
2. No increase in MDR rate in 2015 compared with 2010 DRS.

Given these goals, the associated objectives include:

1. To ensure access to and provision of equitable, high quality basic DOTS services at all levels of health service delivery, in accordance with NTP guidelines;
2. Address TB/HIV, MDR-TB, TB control in prisons, TECs;
3. Contribute to health system strengthening;
4. Increase (early) case finding, reduce patients going unreported, ensure that patients are managed in accordance with NTP guidance and ISTC, in public and private health facilities;
5. Engage people with TB and affected communities; and
6. Surveillance and research to monitor and evaluate performance and impact.

In light of these high-level goals and objectives, the alignment and applicability of the project for the advancement of the NTP's strategy and goal is easily recognizable. The project works towards both overarching goals and in the process contributes in part or in full to each of the subsequent objectives. Particularly, our work relates to the objectives by improving access to high-quality DOTS services in underserved urban slum areas, addressing the needs of private-sector MDR-TB patients, contributing to health system strengthening through education of patients and PPs to improve infection control, driving early case detection through active case finding activities, engaging people

with TB in affected communities down to the hamlet- and alley-level and providing greater transparency and data flow from TB control in the private sector.

With regard to alignment with particular targets, there are clear synergies between this project and the NTP's ambitions as well. While listing all commonalities between the project and the NTP's targets would exceed the scope of this section, a few examples are listed below:

- Within the first objective above, the NTP targets an increase of 5% of additional TB patients diagnosed through contributions from the private sector. Similarly, within objective 4, the NTP expects a 10% increase of TB detections through PPMD activities. Within the targets of Project PROPER CARE, the goal is to increase TB patient diagnosis by 15% over 2012 baseline, outpacing the expectations from the NTP for both objective 1 and 4.
- With regard to MDR-TB, after enrolling an estimated 500 MDR-TB patients in 2010 and 910 MDR-TB patients in 2011 at its 7 treatment sites, the NTP's goal is to treat 1,500 MDR-TB patients annually within its PMDT initiative by 2015. While the project's contribution with a detection of 10 MDR-TB new patients (0.6%) will be limited, they will have been patients found in the private sector – representing important additionality to the NTP's efforts.
- Within objective 5, one of the targets stipulated by the NTP is that by 2015 up to 90% of people will exhibit "correct knowledge of TB" based on a knowledge, attitude and practice survey to be fielded in that year. While it will be difficult to ensure 90% coverage, the project will certainly make its contribution through the active outreach and counseling work of patients and contacts by the project's field staff.

Whether through close collaboration on day-to-day operations or via alignment with strategic goals and objectives, Project PROPER CARE is designed to be highly integrated with the processes and ambitions of Viet Nam's NTP as evidenced above.

f. Monitoring & Evaluation

Monitoring will be a continuing process and will take place in order to ensure that project implementation is done according to the objectives set in the document. The project implementation team in collaboration with local NTP officers will develop a common understanding of a monitoring and supervision system. The program manager will be the main responsible party for composition of these reports, communication of the results and addressing any questions or comments pertaining to these reports.

Reporting will include activities implemented, process indicators, deviations from and revision to the work plan for the next quarter, problems encountered and outputs achieved. Particularly, Key Performance Indicators, if applicable, contained in these reports may include:

Objective	Key Performance Indicator
1. Increase community outreach activities to improve the detection rate of TB patients	• # of suspects identified • # of contacts traced • # of new enrollments (by TB-type & patient category)
2. Incorporate and support	• # of CDPs engaged

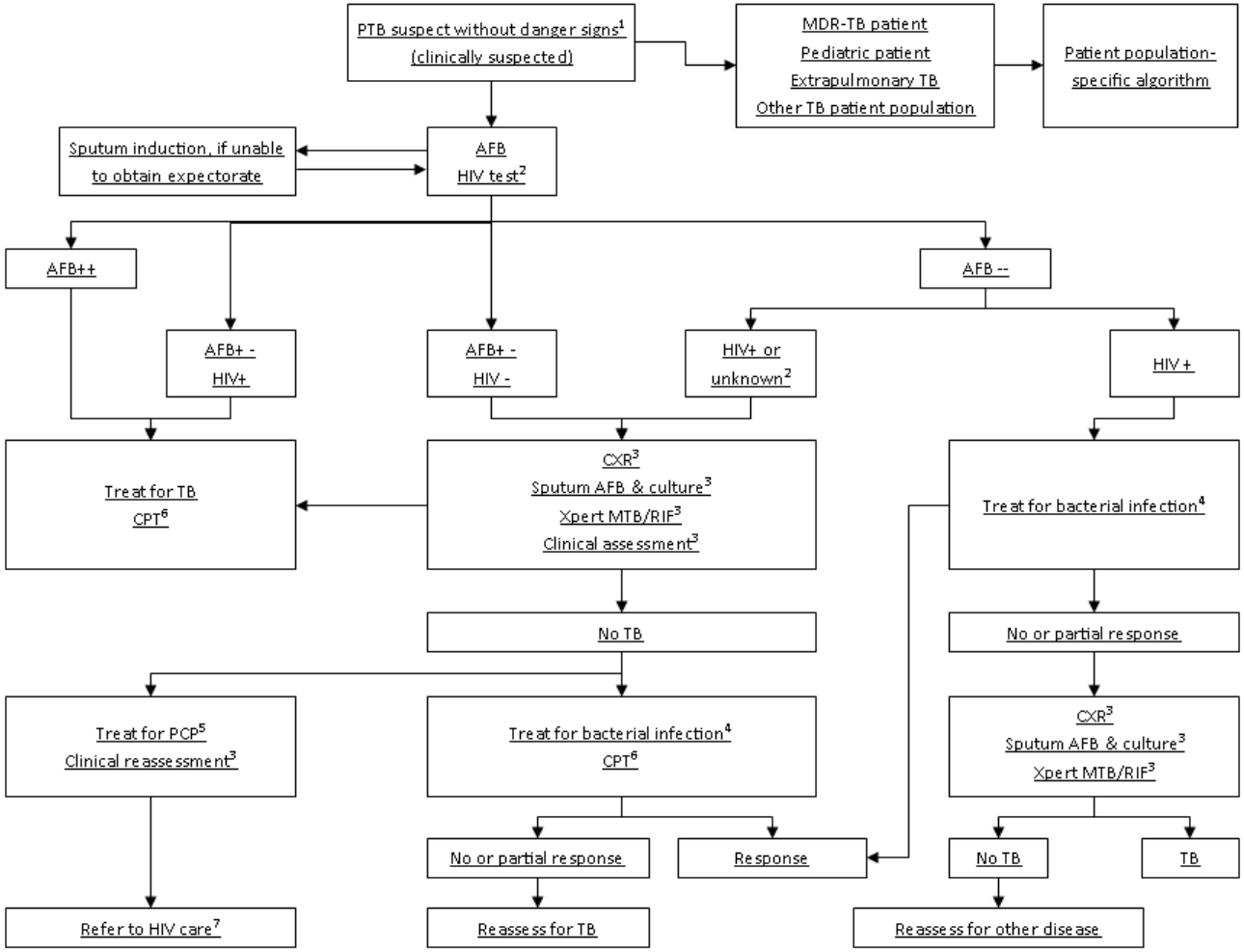
private-sector TB care	• # of mobile centers • # of referrals • # of (NSP) conversions • # of total cases • # of TC/cures • # of DOTS trainings & participants • # of quality audits • # of DTU officer visits
3. Ensure maximum treatment adherence and prevention of drug-resistance	• # of missed doses • # of times dose missed by patients • # of defaults • # of defaults prevented (TC/cure patients w/ >3 missed doses)
4. Improve access, capacity and quality for MDR-TB care within the guidelines of the NTP	• # of DOTS Plus trainings & participants • # of MDR-suspects • # of MDR patients enrolled/referred • # of MDR patients TC/cured

These progress reports will be sent to the DTU and the NTP on a regular basis. FIT and PHA HCMC will present quarterly progress reports to the regional NTP team and at year-end to central NTP leadership in Hanoi. Both parties further will participate on organized quarterly TB meetings held by district/ provincial TB units to review progress find constraints and solution to any problems encountered.

The managers of the project will conduct a monthly visit to the centers for the monitoring the project implementation through the indicators set in the project. For additional oversight, the program managers are responsible for conducting announced and unannounced visits to DOTS sites and evaluate counselor and private provider performance. Furthermore, province and district TB officials are encouraged to conduct regular quality control visits to the project's treatment centers and perform quality control interviews with its counselors and program managers.

III. DIAGNOSTIC ALGORITHM

Algorithm for the diagnosis of pulmonary TB in ambulatory patient (incl. HIV-patients)



Notes: 1) Danger signs include respiratory rate >30/minute, fever >39°C, pulse rate >120/min and inability to walk unaided; 2) For countries with adult HIV prevalence rate ≥ 1% or prevalence rate of HIV among TB patients ≥ 5%; 3) To be done at the same time to prevent multiple visits, resources, capacity and time permitting; 4) Antibiotics (except anti-TB drugs and fluoroquinolones) to cover both typical and atypical bacteria; 5) Pneumocystis carinii pneumonia; 6) Co-trimoxazole preventive therapy; 7) May include HIV clinical staging and determination of CD4 count if available.

IV. COUNSELOR TRAINING SUMMARY

The counselor training content roughly includes the following items:

- Tuberculosis: Types of TB, transmission of TB, infection vs. disease, symptoms of TB, TB suspect identification, diagnosis of TB, TB patient characteristics;
- MDR-TB: Spread of MDR-TB, reasons for drug-resistance, MDR treatment guidelines, MDR drugs, challenges in MDR treatment, prevention of MDR, XDR-TB;
- Epidemiology & national strategies: TB in Viet Nam, NTP, objectives and strategy of the NTP, DOTS;
- TB treatment: Basic features, TB medicines, treatment regimen under DOTS, category I treatment, number of doses and follow-up, weight-based medication, treatment monitoring, outcomes, terminology;
- Counseling and communication: counseling, how to change behavior, need for counseling in TB treatment, contact tracing in TB treatment, communication, do's and don't's in counseling and communication, content of the first counseling session, key counseling messages;
- Information, Education and Communication (IEC): What is IEC, national IEC strategy, project IEC;
- Food, nutrition and TB: Malnutrition and TB, carbohydrates, proteins, fats, vitamins, minerals, nutrition for TB patients;
- NTP & NGO partnership: government TB control program structure, characteristics of partnership with NTP, government support provided;
- Community DOTS providers: Selection of a CDP, duties of a CDP, incentives for a CDP;
- Counselor: Duties of a counselor;
- Program Managers: Duties of a PM;
- Challenges in the field: General challenges, side effects of TB medicine, sputum collection; and
- Other: Rules and regulations, paper work and record keeping, reports.

After the training, counselors should be able to carry out the following activities:

- screening of suspects among disadvantaged people who are predisposed to TB because they are malnourished, suffer recurrent infections, etc;
- enlisting support from "commune leaders," who are highly respected in communities in Viet Nam;
- keeping in regular contact with the microscopy centers and obtain details of patients detected;
- systematic screening of contacts of TB patients in households, neighborhoods and workplaces;
- recording and registering patients and contacts/suspects;
- transport sputum samples to the lab. If the sputum is negative, ensure that the suspect consults a government chest specialist;
- ensure 14 day course of antibiotics. If the symptoms still persist, explore alternative diagnostics such as Xpert MTB/RIF and culture;
- take the patient, wherever necessary, to the government hospital; and
- comprehensive counseling and education of patients, contacts, families and communities to reduce and ultimately eliminate stigma and the myths attached to TB.

Apart from theoretical training about TB, the counselors also learn practical skills like how to observe disadvantaged people for TB symptoms, how to approach them with understanding and empathy and how to provide counseling. The counselor is also taken to the field and is asked to observe and support the work of the existing counselor responsible for that community.

V. OPERATIONAL TARGETS & INDICATORS

Indicator	Target	Target rationale
Indicator 1: Additional number of new TB enrolled with or reported to the NTP	200	• Active outreach work conducted by counselors on a daily basis, visiting urban slums and boarding house communities to identify suspects, provide counseling and conduct general education activities. • Additionally, counselors and program managers will conduct ACF & ACSM activities in underserved communities in Go Vap district
Number of people screened for signs and symptoms of TB (target population)	100,000	• On average, a counselor is expected to conduct daily door-to-door visits to at least 15 households per day spending on average 5-10 minutes per household for an average of 2 hours per day. • At an average household size of 3-4 members, the goal is to reach on average ~52 people per day or at a five-day work-week ~260 people per week. • At 48 working weeks per year (excluding holidays and vacation), the theoretical coverage for 12 months of active outreach is 12,600 per counselor or 113,400 for all 9 counselors allowing for an additional ~13% contingency above the target. • Furthermore, enrolling PPs as CDPs into the program and incentivizing notifications and referrals will help drive up the number of people screened for TB.
Number of people identified tested for TB	2,000	• Counselors are tasked to identify at least 5 suspects per week from the ~260 screened for sputum sample collection, testing and diagnosis. • Following the same methodology as above, this should yield above 2,160 suspects for the 12 months of operation, allowing for a contingency of 8% above target. • Additionally, assuming the 16 enrolled PPs encounter about 50 TB suspects per year, this adds another 800 suspects for a total number of suspects of 2,960 or 48% above target.
Number of Bacteriologically confirmed TB cases found	200	• Anticipating a target conversion rate of 10% between suspect and detection, the resulting target is 216 from ACF activities and 80 from PP notifications. • To facilitate the achievement of the target and increase sensitivity of the active case detection work, the budget includes allowances for CXR and Xpert MTB/RIF examination each for 25% of suspects to be tested. With regard to Xpert capacity, the project has the option to build incremental Xpert MTB/RIF capacity or leverage the one unit with the Oxford University Clinical Research Unit in HCMC.
Indicator	**Target**	**Target rationale**
Indicator 2: Additional number	35 MDR-TB (8-10 from the	• For patients not responding to first-line treatment, MDR-suspect reports are submitted to the NTP and Xpert

of MDR-TB patients enrolled with or reported to the NTP	private sector)	MTB/RIF diagnosis is facilitated for those patients.
Total number of public- and private-sector patients to be managed in the project	880	• As stated above, the number of additional TB patients enrolled from ACF activities and PP referrals is expected to be at least 200. • This figure is incremental to the 2012 baseline of 660 patients treated in Go Vap for a total of 880 patients.
MDR-TB proportion of the national patient population	NSP: 2.7% Retreat.: 19%	• These figures are based on the WHO country statistics for Viet Nam's TB burden and were used as a proxy for the prevalence of MDR-TB in Go Vap district
Number of estimated MDR-TB patients within target patient population in Go Vap district	Total: 36 Private: 8-10	• Assuming a breakdown of about 8.6% retreatment and 91.4% new patients in Go Vap district based on national statistics, this yields about 804 new patients and 84 retreatment patients. • Projecting the WHO's national MDR-TB prevalence assumptions to this breakdown, this yields about 22 new MDR-TB patients and 14 retreatment MDR-TB patients for a total of 36 in Go Vap district. • Applying the proportion of 200 private-sector patients over the total figure of 880, this yields roughly 8 MDR-TB patients from the private sector. However, given the traditionally poor treatment quality and compliance enablement in that sector, an increment of ~25% is assumed to be possible for a total of 8-10 MDR-TB patients found in the private sector.

Indicator	Target	Target rationale
Indicator 3: Default rate reduced to 4% for target patient population	4% default rate	• Through proactive defaulter retrieval efforts, the project expects to be able to reduce defaults by at least one percentage point overall. • This figure does not include MDR-TB patients as those will not have completed treatment by the end of the pilot project period. • Furthermore, this figure does not apply to all 880 patients enrolled as a portion will not have completed treatment. However, it will apply to patients currently under treatment as the project begins. • As a result, 4% default was targeted for the outcomes in the project year, which will likely not equal 880. However, for the analysis, the number of outcomes is assumed to be 880.
Total number of outcomes	Public: 680 Private: 200	• Assuming a stable 2012 baseline in public-sector notifications, there were 680 patients enrolled in 2012. • Adding to this, there is the private-sector-sourced enrollment target of 200. • As discussed above, for the sake of simplifying the analysis, notifications are treated as outcomes.
Default rate baseline	Public: 5% Private: ~40%	• The public sector default rate was the default rate quoted by the HCMC division of the NTP for 2012. • The private sector default rate is an estimate by the NTP based on experience and past research studies conducted in HCMC.
Number of patients at risk for default	Public: 34 Private: ~80	• Applying the default rate estimates from the NTP to the public- and private-sector patient populations, there may be ~114 patients for risk of default throughout the course of the project.
Number of patients to be closely managed and proactively retrieved to achieve default target	Public: 7 Private: ~72	• To reduce the number of defaults in the public sector from 5% to 4%, the counselors will have to avoid default for at least 7 patients. • Applying the same logic to the private-sector patient population, the number of defaults to be avoided through defaulter retrieval efforts is estimated to be about 72. • Given the total of ~79 patients and 9 counselors to achieve this default reduction, each counselor is expected on average to manage and retrieve 9 patients at risk of default or less than one patient per month.

VI. DETAILED WORKPLAN

Objective	Activity	Quantitative and verifiable outcome	Timeline
1. Increase outreach activities to improve the detection rate of TB patients with focus on disadvantaged and hard-to-reach populations	1.a Hire 9 community-based counselors from local community members	- 9 counselors added to the project	Start: 15-Feb-2015 End: 15-Mar-2015
	1.b Provide training on suspect identification, patient counseling and education	- 9 counselors and PM have undergone training process and passed final evaluation by PNT Hospital, PHA HCMC and FIT	Start: 15-Mar-2015 End: 31-Mar-2015
	1.c Conduct ACF activities in areas of high incidence and low access to TB control services	- At least 15 households (45-60 people) per day per counselor visited for a total of ~472 people per day or 2,360 people per week - At 48 working weeks per year (excluding holidays and vacation), the theoretical coverage for 12 months of active outreach is 113,400	Start: 1-Apr-2015 End: 31-Mar-2016
	1.d Collect and transport sputum and rapidly communicate results to TB suspects	- Counselors identify 5+ suspects per week for sputum sample collection, testing and diagnosis - Suspects are referred to go to a DMC or the DTU. - If suspect is unwilling to go, the counselors' responsibility includes carrying samples of all suspects in lieu of the patients - If suspect is willing but unable to go, counselors are to facilitate transportation and appointment as needed - Following the same methodology as above, this should yield above 2,160 suspects from ACF activities for the 12 months of operation	Start: 1-Apr-2015 End: 31-Mar-2016
	1.e Facilitate ancillary and clinical diagnosis to symptomatic SS- patients	- Based on the share of pulmonary negative TB patients and mediocre sensitivity of sputum microscopy, the budget includes CXR examinations for 25% of suspects at government or non-government facilities - These CXR examinations shall	Start: 1-Apr-2015 End: 31-Mar-2016

		complement clinical diagnosis by a qualified NTP or private lung specialist, which the counselor will schedule and organization for qualifying patients - The project also plans to facilitate access to Xpert MTB/RIF diagnostics 25% of patients to raise sensitivity and in the case of suspected SS- and MDR-TB patients through building human and equipment capacity or outsourcing to 3rd-parties	
	1.f Register new patients with the NTP and counsel patients, families and community members	- At least 200 new patients, including 8-10 MDR-TB patients, registered with the NTP from the private sector - All 880 patients and up to 2,640 patient contacts & family members counseled on TB - Other community members educated and counseled on TB through ongoing awareness building efforts in key underserved communities in Go Vap district to increase disease literacy and aid in the proactive self-notification of suspects	Start: 1-Apr-2015 End: 31-Mar-2016
2. Incorporate and support private-sector TB care to enhance treatment outcomes, holistically strengthen the TB control landscape and improve understanding of true disease burden	2.a Identify and enroll 16 private providers as Community DOTS Providers (CDP)	- 16 private providers enrolled as CDPs	Start: 1-Mar-2015 End: 30-Mar-2015
	2.b Organize training courses on NTP guidelines for TB patient management for field staff and CDPs	- 10 field staff and 16 CDPs educated/refreshed on NTP guidelines, TB treatment standards, DOTS, etc. and engaged in TB control	Start: 1-Mar-2015 End: 30-Apr-2015
	2.c Refer TB suspects to CDPs, if requested, for diagnosis and treatment	- Private-sector enrollment offered to all 2,160 suspects identified through ACF activities	Start: 1-Apr-2015 End: 31-Mar-2016
	2.d Support CDPs through counseling for private-sector patients as needed	- For at least 200 patients treated with 16 CDPs, support CDPs with counseling and patient education activities	Start: 1-Apr-2015 End: 31-May-2015
	2.e Register enrolled CDPs with the NTP as	- 16 CDPs registered with the NTP as official government-approved DOTS	Start: 1-Apr-2015 End: 31-Mar-2016

	official DOTS providers with access to free medicines and diagnostics for treatment of patients enrolled in the project	providers - Anti-TB drugs and basic, ancillary and advanced diagnostics provided for at least 200 patients treated by CDPs in the private sector	
	2.f Compile and report monitoring results of patient treatment activities with CDPs	- Counselors and PM to obtain and aggregate patient data from 16 CDPs for at least 200 private-sector patients for reporting to the NTP - Monthly and quarterly summary reports sent to the DTU containing metrics such as: - # Households visited - # Suspects identified - # Patient referrals for testing - # Sputum samples collected - # Patients tested total - # Patients enrolled - # Outcomes (Cure, TC, Default, Died, Transfer out, Failure - Final comprehensive summary report sent to all project stakeholders	Monthly Start: 1-Apr-2015 End: 31-Mar-2016 Quarterly 1. 30-Jun-2015 2. 30-Sep-2015 3. 31-Dec-2015 Final 31-Mar-2016
3. Incorporate and support private-sector TB care to enhance treatment outcomes, holistically strengthen the TB control landscape and improve understanding of true disease burden	3.a Hire a full-time program manager (PM) to oversee operations as well as to monitor and improve treatment adherence in the public and private sector	- 1 PM added to the project	Start: 1-Feb-2015 End: 31-Mar-2016
	3.b Obtain and manage patient contact information meticulously	- Phone numbers collected for all households visited - Addresses, phone numbers or descriptions of residence collected for all suspects collected	Start: 1-Apr-2015 End: 31-Mar-2016
	3.c Train all field staff on treatment adherence and compliance enablement methods	- 9 counselors and PM have undergone training process and passed final evaluation by PNT Hospital, PHA HCMC and FIT	Start: 15-Mar-2015 End: 31-Mar-2015

	3.c Conduct home-visits for treatment administration and targeted counseling with every missed dose	- At 880 patients, 6 days per week for 2 months of intensive phase (IP) results in 42,240 doses - In addition, with one visit per month for 6 months of continuation phase (CP) results in 5,280 doses - Within the total of 47,520 interactions, 20% missed doses are expected to occur for a total of 9,504 home visits. Given 9 counselors and 48 weeks, this corresponds to about 22 home visits per week or 4-5 patients per day based on a 5-day week representing ~2-2.5 hours of work including travel and counseling	Start: 1-Apr-2015 End: 31-Mar-2016
	3.d Involve PMs, DTU officers, public health staff and patient physicians for repeat defaulters	- With an expected missed dose rate of 20% of 880 patients, PMs, public health staff and patient-preferred providers may have to be engaged for up to 176 cases	Start: 1-Apr-2015 End: 31-Mar-2016
4. Improve access, capacity and quality for MDR-TB care within the guidelines of the NTP	4.a Notify NTP of MDR-suspects after completion of each treatment stage (IP & CP)	- Based on WHO MDR-TB rates among new and retreatment cases of 2.7% and 19%, respectively, and 804 new and 84 retreatment cases, we expect to file about 36 MDR-TB suspect notifications to the NTP.	Start: 1-Apr-2015 End: 31-Mar-2016
	4.b Provide DOTS Plus refresher training and education to counselors CDPs, and other public healthcare staff, if necessary	- 9 counselors trained on DOTS Plus, characteristics and counseling of MDR-TB patients - Up to 16 CDPs refreshed/ educated on DOTS Plus - DTU & public health staff refreshed/educated, if necessary	Counselors & CDPs Start: 1-Mar-2015 End: 30-Apr-2015 DTU & gov't staff Start: 1-Apr-2015 End: 31-Mar-2016
	4.c Enable advanced diagnostics for qualifying patients such as retreatment patients and MDR-suspects unresponsive to first-line treatment	-The project includes budget for ~500 Xpert MTB/RIF cartridges, which breaks down as follows: - Assuming a conversation rate of 10% for TB patients that are MDR-suspects, ~260 tests may be required to achieve detection of 26 public-sector MDR-TB patients - An additional ~200 tests are intended for the 200 targeted enrollments from the private sector	Start: 1-Apr-2015 End: 31-Mar-2016

		- As per WHO guideline, budgets for Xpert MTB/RIF should include a ~10% reserve for losses due to damage/incorrect use	
	4.d Report and enroll private-sector MDR-TB patients with the NTP's PMDT facility, if so desired by the patient	- Register all 8-10 privately-enrolled MDR-TB patients with NTP - Offer referral to NTP PMDT sites for government care free of charge	Start: 1-Apr-2015 End: 31-Mar-2016
	4.e Provide specialized, intensive care and counseling for private-sector MDR-TB patients	- Collaborate with CDP on intensive counseling and close monitoring of MDR-TB patient care - Offer or enable access to psychosomatic care and side-effect management	Start: 1-Apr-2015 End: 31-Mar-2016
	4.f Monitor CDPs for responsible use of MDR-TB regimen in accordance to NTP guidelines	- Sensitize CDP and provide NTP-mandated MDR-TB treatment regimen and related guidelines - Attend in-office treatment and validate correct treatment regimen with patients during counseling sessions	Start: 1-Apr-2015 End: 31-Mar-2016

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