

# **SITUATIONAL ANALYSIS**

**FRIENDLY CARE**

**MANILA DOCTORS HOSPITAL**

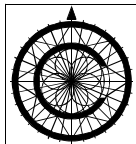
**PHILAM CARE**

**DE LA SALLE UNIVERSITY**

**PPM-TB DOTS CENTERS-FINANCIAL ASPECTS**



**USAID/Philippines**



**Chemonics International Inc.  
Contract No. 492-C-00-02-00031**

This study received support from the Office of Population, Health and Nutrition (OPHN), Philippine Mission, United States Agency for International Development, under the terms of Contract No. 492-C-00-02-00031-00. The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the U.S. Agency for International Development.

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# **FRIENDLY CARE CUBAO TB DOTS CLINIC**

## **SITUATIONAL ANALYSIS:**

### **A MULTI-PRACTICE NGO-LINKED CLINIC MODEL**

#### **A. HISTORICAL BACKGROUND OF THE PPM-TB DOTS CLINIC**

##### **DESCRIPTION OF HEALTH FACILITY BASE**

Friendly Care Foundation is a non-governmental organization (NGO). It started its operations as a multi-disciplinary practice in 1998. It offers adult medical, pediatric, obstetric, gynecologic, surgical and dental services. The concept of the FC is to make available quality health services to the community at very affordable prices. Early sources of funding to set-up the FC Foundation is mainly from the United States Agency for International Development (USAID). Its first clinic was set-up at Masinag, Marikina in February 2000. Since its inception FC has grown into a network of eight branches around Metro Manila. Its main office is at the Shaw Boulevard in Mandaluyong City. Its current branches include: Shaw, San Juan, Cubao, Masinag, Pasig, Lagro, Pasay and Sangandaan.. The Cubao clinic is considered its biggest clinic branch, established in 2001.

##### **TB-DOTS PPM PROGRAM DEVELOPMENT**

When the World Health Organization (WHO) called for the involvement of the private practitioners in the Directly Observed Treatment Short Course for Tuberculosis (TB-DOTS) program, FC responded positively. Under the FC leadership of Dr. Alberto Romualdez, then FC President; Dr. Juan Antonio Perez, then the Health Service Quality Division head and Dr. Raffy Liwanag, FC believed in the DOT strategy as an effective way to increase cure rate of TB and decrease drug-resistant and treatment failure cases. Work towards a DOTS program began as early as the second quarter of 2002. The FC TB Protocol was written on May that year. Dr. Liwanag made arrangements with DOH c/oDr. Lagahid regarding supply of anti-TB medications and training of personnel for a DOTS clinic. Medical technologists from all branches underwent a one-month training on the proper technique for sputum specimen handling and processing for acid fast bacilli (AFB) smear at the Research Institute for Tropical Medicine in June. The following month the FC TB DOTS package for prospective patients was put together. The FC core doctors, nurses and midwives underwent the National Tuberculosis Program (NTP) training in August. Subsequently the entire staff of FC in all its branches was oriented to the DOTS program. On September of 2003, the TB DOTS program of Friendly Care was officially launched and patient enrolment started.

##### **IMPLEMENTATION OF THE TB-DOTS PPM and PROGRESS THRU TIME**

There is a unified FC DOTS Program followed by the entire FC system. The anti-TB drugs are supplied by the Department of Health thru its central Shaw office. While the FC has applied for the PhilHealth accreditation of all its 8 branches, only the Cubao facility has been able to comply with the requirement of a dedicated area for TB DOTS and a trained DOTS physician and thus the only one inspected in

November 2002. In March 2003 the Philippine Coalition for Tuberculosis (PhilCAT) representatives also inspected the Cubao facility as part of the PhilHealth accreditation. Its recommendations included: adding an exhaust fan, separating the waiting area of TB patients with the general clinic patients and designating a sputum collection area. By June 2003, the FC TB DOTS program in the Cubao facility has been accredited to receive PhilHealth reimbursements for services it renders to PhilHealth members.

## **B. THE CURRENT TB DOTS CLINIC SYSTEMS OPERATIONS**

### **THE DOTS PROCESS: How FC Implements DOTS**

The FC DOTS program is now one year old. The FC Manual of Procedures describes in the detail the protocol followed by the FC DOTS staff.. The usual enrollment rate is two to four new patients per month. The clinic only charges P1000 for each patient for the entire TB treatment and this includes cost of sputum AFB on subsequent months and all consultations related to TB.

The approach to patient who comes to the FC Clinic for evaluation follows the algorithm shown below (Figure 1). An enlarged copy of this is hung on one of the walls at the TB DOTS Clinic in FC in front of the physician's working table.

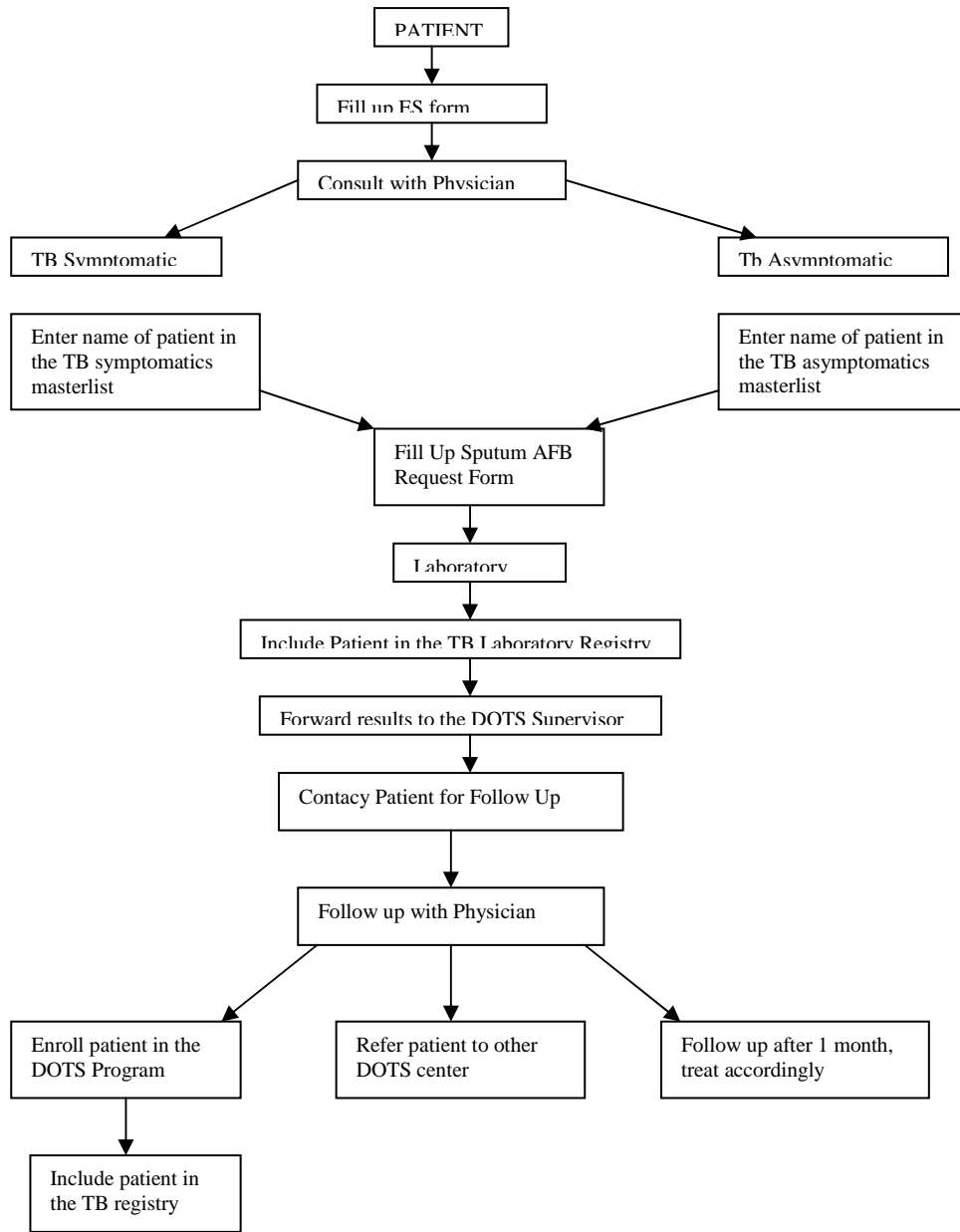


Figure 1. Algorithm for the Initial Evaluation of a Possible TB

The FC DOTS follows the core policies and procedures of the NTP.

- 1) Case Finding :
- 2) Case Holding

- 3) Recording and Reporting
- 4) Logistics Management
- 5) Monitoring, Supervision and Evaluation

### **CASE FINDING:**

- Most of the patients are walk-in clients who meet the criteria of a TB symptomatic: cough of two weeks or more with one or more of the following: Fever, sputum expectoration, significant weight loss, hemoptysis, chest or back pain, sweat with chills, fatigue, body malaise, or shortness of breath.
- Sputum microscopy is the principal diagnostic method adapted by the FC TB DOTS. A TB symptomatic is advised to submit three sputum specimens collected daily for three consecutive days. The need for good quality sputum is explained. While the protocol indicates first sputum be submitted on the day of consult, most patients opt to collect at home. Similarly, because there is no definite sputum collection area, some of the DOTS staff admitted advising their patients to collect at home. Patients are given one week to come back.
- Smearing, fixing, staining and reading of slides are performed by the trained medical technologist.
- Chest X-ray is used as an ancillary procedure.

### **CASE HOLDING**

- FC follows the definitions of Smear Positive Pulmonary TB, Smear Negative Pulmonary TB and Extrapulmonary TB outlined in the NTP.
- FC also follows treatment regimens by categories (I, II, III) which are based on disease classification, history of anti-TB treatment and patient's response to that previous treatment.
- To ensure that the patient will be consistent in his intake of medications, a treatment partner is assigned to each enrolled patient. Treatment partners are either family members, barangay health worker volunteers or a member of the FC TB DOTS staff.
- Patients are to take their medications daily.
- During the first two months patients are given only a week's worth of medications. They thus come every week. Subsequently patients are asked to return less frequently - every two weeks from 3<sup>rd</sup> to 6<sup>th</sup> month. All medications are taken at home and not at the FC facility.
- Medications for TB are all given free to the enrolled patients
- In cases of missed appointments to pick up next set of medications, the FC DOTS supervisor must locate the patient and ask him or her to come for re-visit.
- FC follows the recommended schedule of follow-up sputum studies based on category.
- FC also follows the NTP definitions of treatment outcome.

### **RECORDING AND REPORTING:**

- The following NTP recording forms are filled up and updated by this DOTS program and were available at the time of data collection:
  - ✓ TB Symptomatics Masterlist

- ✓ Laboratory Request Form for Sputum Examination
- ✓ Laboratory Register
- ✓ Treatment Card
- ✓ Identification Card
- ✓ TB Registry
- ✓ Referral/Transfer Forms
- The following NTP reporting forms have been previously prepared but were not available at the time of data collection:
  - Quarterly Report on New TB Cases and Relapses
  - Quarterly Report of Laboratory Activities
- The counting sheet of Laboratory Activities are available but the counting sheet for Treatment Outcomes are not available at the FC Facility.
- Some of the forms were incompletely filled up (more details below).
- Summary Reports are submitted to the Shaw Head Office.
- The last report submitted to NTP was in March 2003.

## **LOGISTICS MANAGEMENT**

- Anti-TB drugs are obtained from the DOH.
- Handled directly by an overall TB administrator.
- MOA between the DOH and the entire Friendly Care network

## **SUPERVISION**

- The external evaluation for PhilHealth accreditation was done by PhilHealth and PhilCAT representatives. Initial inspection was done by the PHILCAT in March 2003. The FC acted on the recommendations.
- FC received final approval for PhilHealth accreditation June 2003
- Submits report also to NTP.

## **ACTUAL OBSERVATIONS of the DOTS**

September 15 – 28, 2003

Three patients were seen at the FC TB DOTS clinic. All were Category I, in their first month of treatment. One was a new patient and two were revisits.

No waiting time for all consultations.

All immediately greeted in a friendly manner

Providers appeared very familiar with the patients

IEC materials available in the room were not used and distributed

Language was clear, simple and appropriate

Patients' concerns were addressed

Contact numbers of clinic were provided.

### **Patient 1: NEW PATIENT SEEN BY DOTS PHYSICIAN**

Asked about symptoms.

Informed he had TB

Encouraged to ask questions.

Examined patient thoroughly, explaining every procedure but



did not tell results of exam to patient  
Explained the TB DOTS  
Patient registered in TB symptomatics masterlist.  
Asked to collect 3 specimens of sputum at home  
No demonstration or advise on proper collection of sputum  
Assigned treatment card and 2 NTP cards  
Name entered into TB registry  
No written reminder of next appointment  
Prescribed the anti-TB meds but advised to consume stocks prescribed  
in a previous hospital before new supply given by FC  
Informed of possible adverse drug reactions and what to do  
Lasted about 15-20 min

**Patient 2: INITIATION OF TREATMENT with DOTS MD & NURSE**

Second FC visit of Patient and Treatment Partner  
Informed that he had TB  
Asked about symptoms of shortness of breath, chest pains.  
BP, HR and weight were obtained.  
Discussed possible adverse drug reactions and what to do.  
Discussed consequences of interruption of treatment.  
No written reminder of next appointment  
Lasted 15-20 minutes

**Patient 3: RE-VISIT WITH DOTS SUPERVISOR**

Unscheduled visit  
Asking about immunization  
Was not given drug supply because still had at home  
Lasted only 5 minutes.

**DOTS TREATMENT OUTCOMES:**

**Was FC Able to Reach the TB Targets thru DOTS?**

The Cubao DOTS has had a total of 38 enrollees from September 2002-September 2003.. Ten of these patients are still ongoing in their treatment.

During the one year period of implementation, the FC facility saw 38 walk-in patients who consulted for symptoms suspicious of TB. All of these 38 met the criteria for TB symptomatic and were thus included in the TB masterlist.

Among the 49 patients, as many as 26 (53%) had positive AFB smears and 1 was read as doubtful. Nineteen patients among the 26 AFB positive sought consult and included in the TB DOTS program, the facility had no information among 7AFB positive patients who only had their sputum examined and did not seek consult.

The characteristics of the TB symptomatics enlisted in the TB symptomatic masterlist are as follows (see table 1): the bulk of the patients came from the age groups 15-44 which comprised 66% of all patients. All 38 of them were eventually enrolled.

Table 1. TB Symptomatics by age and gender from September 2002-September 2003

Age Group (years)	MALE n	FEMALE n	TOTAL n (% of N)
0-14	0	0	0 (0%)
15-24	7	2	9(24%)
25-34	8	3	11(29%)
35-44	1	4	5(13%)
45-54	1	1	2(5%)
55-64	2	4	6(16%)
>65	4	1	5(13%)
<b>TOTAL</b> n (% of N)	23(60%)	15(40%)	38 (100%)

The 38 enrollees were all classified as cases of pulmonary TB. No extrapulmonary case was seen. Thirty three of the 38 enrollees were newly diagnosed: 19 were AFB positive and 14 were sputum smear negative (see Table 2). The sputum smear negative patients who are symptomatic with positive Chest X-ray findings of PTB were included in the TB DOTS program. Dr Lim made all the decisions regarding inclusion and exclusion of a certain patient to the DOTS program. The FC formed a Diagnostic Committee but only use it to discuss and decide on unusual and difficult cases. Four patients were relapse cases who were treated by private physicians before. One patient was a returnee from default.

Table 2. Characteristics of 38 Enrollees according to Previous History of TB Treatment

Type of Patient according to History of TB Treatment	n (% of 38)
New	33 (86.8%)
Smear (+)	19
Smear (-)	14
Relapse	4 (10.5%)
Return after Default	1 ( 2.6%)
<b>TOTAL</b>	38

Based on the NTP categorization of TB disease, the 38 enrollees consisted of:

Category I	29 (76%)
Category II	8 (21%)
Category III	1 ( 3%)

Interestingly, when the smear positive data from TB DOTS patients were compared to laboratory data, there were more than 38 sets of three sputum specimens which were processed by the medical technologist. A total of 49 patients submitted sputum for microscopy. The explanation for this discrepancy lies in the fact that some patients come to the FC Clinic to just have certain tests done at the laboratory. Thus of the 49 patients who had sputum specimens, only 38 of them self-reported symptoms. The rest came only to have a sputum test done without necessarily consulting.

Of the 49 patients with 3 specimens each, 26 had back smear positive sputum. Twenty-three of them were enrolled to the DOTS. Three were among those who came to the FC just to have laboratory done and the clinic does not know what happened to these patients.

Table 3: Treatment Outcomes of FC TB DOTS September 2002 – September 2003.

Outcome for the 28 who have finished the prescribed anti-TB medications are as follows (see Table 3 above): Eight patients successfully finished the anti-TB treatment but failed to give any more sputum at the end of the last month because they were not expectorating any sputum anymore and hardly coughing.

Seven patients defaulted. Reportedly, two to three patients went to the province and were not able to come back to the clinic again. One other patient defaulted after she became pregnant and did not want to take anti-TB medications anymore. The rest of the defaulters would not return to the clinic again even upon contact by the DOTS supervisor or the barangay health volunteers.

One patient was transferred to another FC TB DOTS program because of the geographic location of his residence. One died but the cause is said to be non-TB related. The patient was a 64 year old male who was in his fourth month of treatment. He died of upper gastrointestinal bleeding.

One continued smear sputum the fifth treatment thus “Failure” referred DOTS program

<b>Treatment Outcome</b>	<b>N</b>	<b>(n/28)%</b>
CURE	10	35.7%
COMPLETED	8	28.6%
DEFAULTED	7	25.0%
TRANSFER	1	3.6%
FAILURE	1	3.6%
DIED	1	3.6%
<b>TOTAL</b>	<b>28</b>	<b>100%</b>

patient to have positive even at month of and was labeled and to the PLUS at the

Tropical Medicine Foundation at Makati Medical Center.



### C. CURRENT PHYSICAL INFRASTRUCTURE SET-UP

<b>Name of Facility:</b>	<b>Friendly Care Cubao</b>
Address:	2 <sup>nd</sup> Floor Metrolane Complex, P. Tuazon St corner 20 <sup>th</sup> Avenue, Cubao, Quezon City
Telephone:	421-1660; 421-1678
Fax:	421-1684
Office/Clinic Hours:	Monday thru Saturday 9AM-6PM no lunch break

**Location:**

The Cubao FC TB DOTS is located within the FC Cubao facility which is located on the 2<sup>nd</sup> floor right wing of a small shopping complex called the Metrolane Complex. This complex is situated at the busy intersection of P. Tuazon and 20th Avenue, walking distance from the Araneta Complex and Alimall Shopping Mall, landmarks of the Cubao commercial district.

**Accessibility:**

The FC Cubao facility is easily accessible by public transportation. Various jeepney routes pass by the P. Tuazon road. For those with private transportation, parking spaces are available in the complex front at all times for free.

Being at the 2<sup>nd</sup> floor of the complex may be a limitation for potential patients with walking problems specially because no ramp, elevator or escalator is available.

In case of emergency or other unforeseen events, patients are given various contact numbers of the clinic. Additionally the mobile phone number of the DOTS supervisor is usually given to enrolled TB DOTS patients.

### **Visibility:**

The FC Clinic in Cubao is visible from the street, mainly thru a large signage on the building wall that reads “Friendly Care.” The inside portion of the clinic is seen from the outside of the second floor level thru glass walls to enclose the entire side facing P.Tuazon street. These glass walls are filled with posters of the various services offered by FC. Among these are posters on TB DOTS.

### **Physical Infrastructure**

The FC-Cubao is a well-designed, spacious, attractively colorful and clean health facility which gives a new visitor a welcome “homey” feeling. It has a floor area of 420 square meters..It is fully air-conditioned. The registration area is right across the only entrance to the facility. Immediately close to this is the general waiting area for as many as 35 patients and their companions at any single time. This is a spacious area with a television set airing cable TV. The rest of the clinic space is occupied by several subspecialty rooms for consultations separated by divider-like structures, comfort rooms with adequate handwashing facilities, laboratory and a kitchen-dining area.

Of the total clinic space, approximately 7 square meters are devoted to the TB-DOTS clinic. This space is located at the right posterior side of the facility, not immediately seen from the entrance. This is a 3.5m by 2 m room with its own airconditioner, small airvent and exhaust fan. It is equipped with an examination table which functions also as a medication table, a sink and hand dryer, a table and three chairs. Educational materials on TB are kept here. It can comfortably accommodate at least three people: the TB-DOTS provider, the patient and the treatment partner. The door can be closed as necessary. The waiting area for TB patients is separate from the general waiting area and fronts the TB DOTS room.

As an auxiliary part of the DOTS set-up the original FC laboratory is now able to process sputum specimens for detection of acid-fast bacilli detection. Prior to the DOTS the laboratory has the capability to perform routine diagnostic tests such as complete blood count, pregnancy test, urinalysis, fecalysis, pap smear and chest radiographs.

The designated sputum collection area is the open space in the hallway outside the FC facility.

### **TB- Related Drug, Equipment and Material Inventory**

#### **Anti-TB Drug Stocks**

The facility uses urine specimen plastic cups with cover for collection of sputum. These are also numerous in number and three are given to each patient per sputum AFB request.

The anti-TB drugs all come from the DOH and thus dispensed to the enrolled patients free. Drugs that are allocated to an enrolled patient are placed in a box with proper label and cannot be used for other patients. The drugs available are the Blister pack type 1, Blister pack type 2, Ethambutol 400 mg tablets and Pyrazinamide 500 mg tablets. Pediatric anti-TB syrups are not available as well as the branded anti-TB medications. The facility also provides for antihistamines and antihypertensives but these medicines are not free anymore. Other medications such as anti-pyretics and analgesics are not available in the clinic. All drugs are stored and used with the “first expiry, first out” system. Storage facilities for the drugs are clean and protected from natural elements such as the rain, sun and floodwaters.

At the time of data was being collected (September 15, 2003), there was enough anti-TB medicine supply to complete the treatment of currently enrolled patients. Buffer stock is always available for at least 2-4 persons. Currently the buffer stock is for full courses of 5 persons.

FC experienced major problems with DOH-provided medications as supplies ran out and the DOTS clinic was unable to enroll any new patient between February and July of this year.

Inventory is done every quarter but no written inventory of drugs could be obtained at the time of data collection. They did have a listing of drugs received by the Cubao branch from the Shaw office.

There were expired drugs in a separate cabinet but the FC staff explained that these drugs were already beyond or close to expiry date at the time of delivery.

#### **IEC Materials Supply**

Various brochures, pamphlets, comic books, posters and calendars on the topic of TB and DOTS are present in the clinic for distribution to patients on their initial visits.

#### **Microscopy Needs**

The facility has the following for its TB program: 2 microscopes, 1 box of surgical masks, 2 pieces of N95 respirator, 1 sharps container, 9 boxes of cover slips, adequate supply of disposable needles, syringes, glass slides and AFB reagents.

#### **Waste Disposal**

Waste disposal is color-coded (yellow for infectious, black for non-biodegradable and green for biodegradable) but trash bins are not covered.

Collectors from the Shaw office collect the infectious waste every Friday for proper disposal.

## **D. HUMAN RESOURCE SET-UP: THE HEALTH PROVIDERS**

For the last twelve months, the FC TB DOTS has been manned by the following: One administrator, 1 full-time DOTS physician, 1 part-time DOTS physician, 1 part-time nurse, 1 medical technologist, 1 accountant, 1 radiology technician and 1 messenger. All of these personnel except the two physicians have other tasks in the FC facility.

### **a. DOTS Physician – Dr. Raquel Lim**

#### **i. Most Important Role in the FC TB DOTS Program**

Dr. Lim is the recognized head of the TB DOTS in FC. She was the one who drafted FC TB DOTS Manual of Procedures, the TB protocol of the

clinic based in the NTP guidelines. Operationally she takes charge in almost all aspects of out-patient care for TB suspected and confirmed cases. She must see all patients before treatment for TB is initiated.

ii. Training in TB DOTS

Dr. Lim had her medical school at the University of the Philippines (UP) and graduated in 1996. She finished her post-graduate training in Family Medicine at the UP-Philippine General Hospital where she had a lot of experience with issues on control and prevention of TB. To prepare herself well for the current position, Dr.Lim underwent a TB DOTS training in August 2002 at the Mandaluyong City Health Office, DOH-NCR. This training included topics as follows: NTP policies and procedures, case finding, case holding, recording and reporting, logistic management, monitoring and supervision. She feels adequately trained for the work that she is presently doing and feels that continuing education should be more workshop in format discussing management issues such as TB culture and sensitivity, adverse events from anti-TB medications and PhilHealth reimbursement.

iii. Knowledge and Practices in TB DOTS

Dr. Lim, being the author of the FC Manual of Procedures for TB is very knowledgeable of TB. She starts to suspect that a patient is a TB symptomatic when he or she presents with cough of more than 2 weeks duration, on and off fever, chest and back pain, lymphadenopathy and significant weight loss. She then sends symptomatic TB patients for sputum AFB at the FC clinic laboratory with proper laboratory requests and advise on good sputum collection. Occasionally she orders chest radiographs.

iv. Role in Diagnosis and Initiation of Treatment for TB

As above, patients are referred to her when he or she fulfills the description of TB symptomatic. Dr. Lim has the advantage of seeing sputum results early from the laboratory register. She gives the treatment category based on sputum results and determines what regimen to give. She also enrolls smear negative patients with suspicious chest x-rays. There is a Diagnostic Committee in FC specially for very complicated diagnostic dilemmas. Prior to enrolment Dr. Lim gives an educational session to the patient and his treatment partner where she emphasizes on the following concepts: 1) TB is infectious; 2) To achieve full cure regular intake of a combination of drugs for at least 6 months; 3) Importance of DOTS; 4) Household screening; 5) Need for follow-up sputum examinations; 6) Possible side effects of drugs; 7) Consequences of irregular drug intake.

Because of a basic charge of P1000 per patient, Dr. Lim would refer indigent patients to the health center to receive his or her DOTS there.

v. Role in Case Holding

Dr. Lim strongly believes that the chances of a patient fully complying with TB DOTS are increased if they are properly educated from the very start. She also recognizes the role of the treatment partner, that is why she takes first hand role in identifying, assigning and educating the treatment partner of each patient. She makes the patient sign an agreement form to

strengthen the commitment to the program. Contact numbers of the patients are included in the patient information sheet to reach patients who fail to follow-up on scheduled dates. She also monitors the compliance to follow-up sputum tests.

vi. Role in Treatment Outcomes

Dr. Lim is also the one who categorizes patient outcome. She oversees record keeping of outcomes. They submit a report every three months to the Area Manager, Dr. Raffy Liwanag.. Problematic patients such as treatment failure (defined as smear remaining after 5 months of treatment) is also immediately discussed with the Area Manager to facilitate referral to a DOTS Plus facility such as the Tropical Foundation at the Makati Medical Center. Defaulters who return must be seen by Dr. Lim for intensive counseling before their treatment can be resumed.

vii. Supervision

The immediate supervisor of Dr. Lim for TB DOTS matters is Dr. Liwanag. Dr. Lim on the other hand directly supervises the TB nurses and coordinates closely with the rest of the TB DOTS team.

viii. Performance Evaluation

The whole staff of FC is evaluated annually based on quality of work done, dependability and cooperation.

ix. Suggestions for Quality Improvement

Dr. Lim suggests a full time dedicated TB DOTS supervisor. Regular workshop for clinic personnel in the TB DOTS program would also be good to discuss issues mentioned above such as: TB culture and susceptibility, management of adverse drug reactions and Philhealth reimbursement. She also feels that round-table discussions with the entire FC staff will enlighten the whole staff on the program.

- x. Time in Facility: 14 hours a week or 3x per week as follows Monday and Saturdays 2pm-6pm and Thursdays 10am – 4pm

**b. TB DOTS Supervisor and Nurse – Benedict Roma RN**

i. Most Important Role in the FC TB DOTS Program

Mr. Roma is mainly responsible for making sure that the DOT component of the FC TB DOTS program is properly implemented. He is directly in charge of the regular dispensing of anti-TB drugs to either the patients or their treatment partners. Whenever patients fail to return on scheduled follow-up for the pick-up of medications, Mr. Roma is the one responsible for contacting them directly or thru volunteer barangay health workers.

ii. Training in TB DOTS

Trained formally in nursing (graduated in 1995), the only DOTS training he underwent was the August 2002 training at the Mandaluyong City Health Office, DOH-NCR as part of the preparation of FC for the implementation of the TB-DOTS program.

He feels he needs more training on TB DOTS, at least twice a year.



iii. Knowledge and Practices in TB DOTS

Mr. Roma is also very familiar with the NTP manual of procedures and CUPT and complies with all the recommended procedures.

iv. Role in Diagnosis and Initiation of Treatment for TB

He also helps in case detection by screening suspected patients for possible TB. Anytime a TB suspect comes to the clinic, Mr. Roma would order screening sputum AFB. He would refer TB symptomatics to the physician for further work-up. He helps identify and assign treatment partners. He also gives additional education and counseling to enrollees and ongoing patients.

v. Role in Case Holding

This is the most important task of the TB DOTS Supervisor. He is the one who sees patients or their treatment partners regularly when they come to clinic throughout the rest of the treatment program. He examines patients and takes the body weight at the start of treatment, end of 2<sup>nd</sup>, 4<sup>th</sup> and 6<sup>th</sup> months and refers them to the physician if there are problems. He also refers them to other subspecialties (ie obstetrician) as necessary. He takes every visit an opportunity to give education on TB and counseling to patients and treatment partners particularly the issue of development of multidrug resistant TB if drug intake is irregular.

He makes sure that there are medications enough to sustain all ongoing therapy. He is responsible for facilitating requisition and proper distribution of drugs and other supplies. He follows the *first in, first out* system and monitors drug expiry dates.

vi. Role in Treatment Outcomes

As TB DOTS Supervisor, Mr Roma records treatment outcomes as assigned by the DOTS physician. All records are kept within the FC Clinic.

vii. Role in Reporting and Record Keeping

Mr. Roma is the one responsible for updating treatment cards of each patient. He should be updating the TB symptomatics masterlist and the target client list regularly. He prepares the quarterly reports and drug inventory reports for submission to the FC Area Manager.

viii. Supervision

Mr. Roma is reporting to two people. For the TB DOTS Program he reports to Dr. Lim and for his other FC duties as a nurse he reports to the Clinic Head.

ix. Performance Evaluation

There is an annual performance evaluation done by the Clinic Head. The criteria for evaluation is not known to Mr. Roma.

x. Suggestions for Quality Improvement

Mr. Roma recognizes that it would be a great improvement to the FC TB DOTS program if the DOTS Supervisor is dedicated and fulltime to the program. He admits that many tasks are delayed including record upkeep

and contacting follow-up patients when they miss their appointments because of his other tasks in the FC Clinic.

He also has some specific suggestions on how to improve some of the NTP forms to capture more information: ie include whether patient is symptomatic or asymptomatic in the NTP register and have blanks to indicate signs and symptoms in the laboratory requests for sputum AFB.

xi. Institutional Commitment

Mr. Roma may be leaving the FC sometime in the middle of next year.

xii. Time in Facility: Monday to Saturday 9am to 6pm

**c. TB DOTS Supervisor reliever and Nurse – Evangeline Lantion RN**

i. Most Important Role in the FC TB DOTS Program

Ms Lantion has been with the FC clinic for only 3 months as clinic assistant. She takes over the tasks of the DOTS Supervisor whenever he is not available.

ii. Training in TB DOTS

Ms. Lantion has not had any training in DOTS or TB but looks forward to a possible training before the end of this year.

iii. Knowledge and Practices in TB DOTS

Very limited knowledge and currently follows instructions of the DOTS Supervisor or Physician.

iv. Role in Diagnosis and Initiation of Treatment for TB

She has been assigned to screen possibly TB symptomatics and has instructed proper collection of sputum at home to be brought back to the FC for processing. All patients she sees are also seen by either the DOTS supervisor or physician.

v. Role in Case Holding

To increase her hand-on knowledge of TB DOTS she has been assigned to be the treatment partner of one DOTS patient. This is her grandfather who she follows mainly at home.

vi. Role in Treatment Outcomes

None yet.

vii. Supervision

Reports to the Clinic Head.

viii. Performance Evaluation

Ms. Lantion has not had any performance evaluation yet.

ix. Suggestions for Quality Improvement

Ms. Lantion believes that the FC Program would be able to accommodate more patients if a DOTS physician is available during all clinic hours.

x. Institutional Commitment

Ms. Lantion is being groomed to replace the current DOTS Supervisor in the event of his resignation.

xi. Time in FC Facility: Monday to Saturday 9am – 6PM

**d. Medical Technologist – Maria Cecilia Aldahchan RMT**

i. Most Important Role in FC TB DOTS Program

Ms Aldahchan does most of the sputum Acid Fast Smear test requested by any of their physicians or DOTS staff.

ii. Training in TB DOTS

She finished her degree in MS Medical Technology in 1998 but fails to recall any training related to DOTS at that time. To prepare for the FC DOTS Program she underwent the TB DOTS Training with the rest of the TB DOTS staff in August 2002 at the Mandaluyong City Health Office DOH-NCR. She also underwent successful training at the RITM to improve her skills in doing sputum microscopy.in June 2002.

iii. Knowledge and Practices in TB DOTS

She claims not to be familiar with the FC Manual of Procedures nor the NTB nor the CUPT. When asked about specific points she is able to identify a possible TB symptomatic based on cough of at least 2 weeks, on and off fever, chest and back pain and significant weight loss. She advises proper sputum collection at home or any open space and would ask the patient to return with the specimen. She is also able to add additional counseling to the patients: emphasizing TB is infectious but can be cured with regular intake of medications provided by FC.

iv. Role in Diagnosis and Initiation of Treatment for TB

Ms Aldahchan is the only trained microscopist in the facility. She processes all sputum requests except in unusual occasions when there are too many request at the same time, in which case the specimens are sent to another FC branch for assistance.

She is the one responsible for maintaining the register of classification of patients according to their laboratory smear results. She updates the DOTS physician with the sputum results.

v. Role in Case Holding

She processes the follow-up sputum smears at the end of 2<sup>nd</sup>, 4<sup>th</sup> and 6<sup>th</sup> months of treatment.

vi. Role in Treatment Outcomes

She processes sputum specimens at the end of treatment and records results.

vii. Supervision

Her immediate supervisor is the pathologist.

viii. Performance Evaluation

She knows of an annual evaluation but does not recall criteria for evaluation.

ix. Suggestions for Quality Improvement

To improve safety of the laboratory environment, a hood would be most welcome. She also would welcome the hiring of another medical technologist dedicated to do TB-related work only.

x. Institutional Commitment

xi. Time in Facility: Monday to Saturday 9am to 6pm

**e. Radiology Technician – Valentin Carlos**

i. Most Important Role in the FC TB DOTS Program

Performs chest x-rays and other radiologic procedures requested by the physicians.

ii. Training in TB DOTS

Mr. Carlos finished his course in BS Radiology Technology in 1996. He has had no special training related to TB.

iii. Knowledge and Practices in TB DOTS

He does not participate in any of the actual clinical management of patients. He thinks it is common knowledge to refer to a physician a person who presents with at least two weeks of cough, fever, significant weight loss and poor appetite.

iv. Role in Diagnosis and Initiation of Treatment for TB

Carries out request for chest x-ray when necessary.

v. Role in Case Holding- None

vi. Role in Treatment Outcomes-None

vii. Supervision

All the films are read by the radiologist, whom he recognizes as his immediate supervisor.

viii. Performance Evaluation

The Clinic Head evaluates them twice a year but he does not know the criteria for evaluation.

ix. Suggestions for Quality Improvement-None

x. Time in Facility: Monday to Saturday 9am to 6pm

- f. Non TB DOTS personnel: The rest of the regular FC staff includes: 3 physicians: 1 pediatrician, 1 obstetrician, 1 family medicine specialist; 1 dentist; 1 family planning counselor, 1 accountant, 2 nurses, 1 medical technologist, 1 radiology technician, 1 encoder, and 1 security guard.

**E. CLIENTELE SERVED: TB PATIENTS**

Seven of the 10 current TB patients were individually interviewed after they saw the TB DOTS health provider.

The seven patients consisted of 2 new patients, 4 follow-up patients and 1 patient who already finished his treatment. All were pulmonary TB and most are classified under Category I (6- Cat I, 1-Cat II). Among the 4 follow-ups, 2 patients each are in the intensive and maintenance phase. The TB DOTS supervisor attended majority of these visits (5-nurse/DOTS supervisor, 1-doctor, 1-doctor and DOTS supervisor). Most of the patients were just following up for visit without problems.

The table 4 shows sociodemographic characteristics of the interviewed patients. Worthwhile to note in this data is half of them were currently unemployed. Also 6 of the 7 had chest x-rays done prior to consultation to the DOTS Clinic. The rest of the details are further discussed below.

### **Visit Experience**

Four patients came to the facility for consult, 3 were due to scheduled health education. Most patients learned about the facility through their relatives and they know that it offers almost all services- from family planning to dental services. Majority of patients had chest X-ray (6 patents) prior to consult. All patients were symptomatic before coming to the facility. Common symptoms were hemoptysis, cough of more than 2 weeks and shortness of breath. More than half (4 out of 7) of the patients went to the facility with a companion-all were family members.

All patients think they were able to get the services that they need during the visit and that the time of consultation given to them is just right. They know their TB supervisor in his first name and they can identify the name of their doctors. Among 7 patients, 4 asked their health providers some issues related to the disease and some other issues and their health provider discussed these concerns satisfactorily.

Only 3 out of 7 patients were examined physically, with the result of the physical examination/procedure clearly explained. One patient said the purpose of the examination was not explained to him before it was conducted but the result was explained fully. All patients think that the provider was able to explain to them clearly

Table 4. Characteristics of Seven Interviewed Patients, FC Clinic September 2003

<b>CHARACTERISTICS</b>	<b>N</b>	<b>%</b>
Sex Male	5	71
Female	2	29
Age – 20-35	4	57
>60	3	43
Marital status single	1	14
Married	4	57
Widowed	2	29
Educational background -elementary level	3	43
Vocational grad	2	29

College grad	2	29
Occupation- none	4	57
Private comp employee	1	14
Driver	1	14
Part time consultant of credit card	1	14
Household monthly income P 1,501-4,999	1	14
5,000-9,999	2	29
>10,000	1	14
DON'T KNOW	3	43
Reason for consult – Consultation	4	57
Health education	3	43
Knowledge of the facility – relatives	4	57
Company/ Health center	2	28
Signage outside	1	14
Services mentioned – other depts. (OB, Pedia, dental etc)	6	
CXR	3	
Consultations	3	
CXR done prior to consult	6	86
Symptoms - hemoptysis	5	
Cough >2 weeks	3	
Body malaise	3	
Duration of consult – just right	7	100
Perception of clients for TB DOTS services - Satisfied	7	100
Knowledge re getting TB – from TB patient	4	
Inhaling bad air	4	
Dirty surroundings	2	
Smoking	2	
Treatment partners - family member	6	86
BHW	1	14

that they have TB. It was explained to them that TB is contagious but curable and if a person has prolonged cough and back pains he should have a check-up. Everybody was satisfied with the privacy and confidentiality given by the FC TB DOTS facility. All agreed that the health providers involve them in making decisions about their health care.

#### **Accessibility of the FC DOTS Center**

All patients find the location of the FC convenient to them because it is near to where they live. Most patients (6) need one ride only to reach the facility and they travel for only about 5-10 minutes (2 patients have 30 minutes travel time). Six patients knew other facility near home that offers TB DOTS (hospitals and health center), but these facilities have long waiting time, their drugs are not free and it takes too long to get there. All were satisfied with their visit to the facility.

None of the patients ever experience being turned away from the facility during office hours. Most of them (5) do not experience waiting from arrival to the time services were received. A

patient had to wait for 5 minutes and one for 10 minutes, but these two patients think the waiting time is just reasonable.

### **Current Knowledge of TB**

Most patients (4 of 7) think that you can get TB from another TB patient and inhaling the TB bacteria. Some think you can get it from dirty surroundings, smoking, malnutrition, saliva and household contacts. They all know that TB is transmissible but curable and majority (6) know that cure is achieved by taking TB drugs in the right doses at the right intervals. They also know that completion of treatment will prevent further spread of disease. A patient is even informed of the possibility of developing MDRTB if drugs will not be taken regularly.

All patients know that they need to take the anti-TB drugs for 6-9 months. Four of them are aware of possible ADR of these drugs like change in color of urine, dizziness rashes, headache, sleepiness, alteration of hearing and sight. Six patients know that they need to have follow-up sputum examinations

All patients have treatment partners, 6 out of 7 treatment partners were relatives. Four of the treatment partners see and observe patients' drug intake daily, 2 were monitored weekly. Five TP keep the record of patient's drug intake.

### **IEC Materials**

During consultations, all patients said the provider explained their illness in a very clear manner. Only 3 patients remembered being given educational materials, one during his initial visit, another patient during the 1<sup>st</sup> month and the third patient on his last month of treatment. Among those given were brochures and comic books mostly dealing with TB and TB DOTS. Only one among 3 patients who were given educational material thinks these IEC were helpful because it increased his motivation for treatment. The 2 patients think otherwise, they said they already know the information given by the IEC materials, mostly from experience and other pamphlets that they read before. No group discussions were done in the facility.

### **Cost of DOTS**

Patients pay P1,000.00 for the whole duration of treatment as a package deal with option to pay in installment basis. Transportation cost per visit ranges from P8.00 to P50.00, majority below P30.00.

All thought cost is reasonable.

### **Follow-up Reminders**

Five patients were told to come back every two weeks but no specific date was given to them. One patient was not told to come back and one doesn't know that he has to come back. All patients think that the office hours of the facility is very convenient to them, although one said it would be better for him if the facility is open on weekends (Sunday).

### **Suggestions**

Two patients suggested that records should be updated and improved. Another patient want more participation on his treatment. The others are satisfied with the present situation.

## F. DOTS TREATMENT PARTNERS (TP)

The treatment partners are either staff of the FC, barangay health volunteers or relatives, household members or co-workers of patients. The distribution of treatment partner types is seen in Table 5 below.

Table 5. Distribution of Treatment Partners assigned to 38 Enrollees.

TREATMENT PARTNER	N	% of total
Family Member	29	76
Co-worker	3	8
FC Nurse	2	5
Barangay Health Center volunteer	2	5
Househelp	1	3
Neighbor	1	3
<i>TOTAL</i>	38	100%

In a very innovative move, the FC leadership planned a “Tribute to the Treatment Partners” on the occasion of the First Year Anniversary of the FC TB DOTS Program, September 18, 2003. The occasion was festive with balloons, catered food, a program and token gifts (paired mugs” for the pairs of patients and their treatment partners who made it to the celebration.

Ingeniously, seven of these treatment partners were gathered for a focused group discussion in a separate room during the dinner part of the program. The seven were: 2 FC nurses, 2 barangay health volunteer (BHW) and 3 household members.

### **Understanding of Primary Task as Treatment Partner**

All seven TPs considered “reminding the patient to take their medications on a daily basis” as the primary role of the TP. Some felt that they should also monitor the progress of the patient’s treatment response such as weight gain, adverse drug events and other illnesses. One TP considered giving encouragement , education and precautionary advise as part of her tasks as a TP.

### **Training to Become a TP**

Only 2 of the seven TPs had an orientation on the TB DOTS Program: the FC nurse understandably had the most training which consisted of three days of seminar. The other FC nurse, BHWs and one relative who is a retired dentist got information informally on TP from the interactions with doctors at the FC and other health facilities. The remaining two TPs who were both relatives were just instructed by their patients based on what the DOTS supervisor said.

### **Interaction with FC TB DOTS supervisor or physician**

The 2 FC nurses and 2BHWs regularly interact with the FC TB DOTS Staff. The three family members never reported to the clinic.

### **Strategies to Promote Adherence to Drug Regimen**

Health education was considered most important by the FC nurses and BHWs. The family members said that their patients were already well-motivated and giving reminders was the only



intervention needed. No additional incentive was necessary for patients. Show of concern is sometimes enough to motivate patients.

### **Confidentiality Issues**

Answers were varied: the 2FC nurses and 2 BHWs try not to talk about TB in front of other people. Some patients however are themselves very open about having TB and not embarrassed. The three relative TPs preferred to keep the information of TB disease within the family. One TP narrated the need of her husband-patient to resign from work because of the pressure of indifference and discrimination after they learned he had TB.

### **Need for Incentives/Pay to be a TP**

Unanimously not necessary. The gratitude expressed by the patients are enough.

### **Role Satisfaction as TP**

All felt happy as a TP and the opportunity to be able to help patients specially if they are family members.

### **Difficulties/Anxieties Encountered as TP**

Minor difficulties. For non-family members it may be sometimes difficult to reach patients' homes like during typhoons.

There were initially some fear of contracting the TB infection from the patients but the health information and education on TB allayed such fears and strengthened motivation to help patient complete treatment.

### **Improvements Suggested**

More training for TPs. More IEC materials that patients can bring home and share with relative TPs. One BHW who was handling up to 5 patients suggested that the ideal case is only 1TP per 1 TB DOTS patient. The recruitment of more community volunteers is something to work on.

## **G. REFERRING PHYSICIANS**

At present all the patients have been self-reporting patients or walk-in patients. They would usually consult for cough. One of the FC physicians, Dr. Lourdes Tilde, would see these consulting adults and decide whether referral to the DOTS is warranted. FC DOTS has not received referrals from other health facilities. Details of the key informant interview of Dr. Tilde can be reviewed in Appendix XI

### **Knowledge and Attitudes on TB and TB DOTS**

Dr. Tilde practices as an internist. She is familiar with the many issues that confront TB management. She reported having about 10-15 TB patients a week. The FC DOTS Program is a welcome development to her practice because it assures her that the many patients she diagnoses with PTB has a higher chance of achieving cure and being monitored throughout the duration of their therapy.

She was "amazed" that FC, being a multi-practice private clinic, adapted the TB DOTS program. She saw the improvement in the quality of sputum microscopy that resulted from the DOTS initiative. She continues to use chest x-rays as ancillary tests to diagnose and monitor TB.

### **Referral Practice**

Even if Dr. Tilde will see less of the patient again for future consultations she now refers all her diagnosed TB cases to the DOTS program.

### **Advantages and Disadvantages of DOTS**

Dr. Tilde agrees with all the DOTS procedures. She believes DOTS is most important for problematic and complicated cases. She finds no disadvantage to the program.

### **Incentives**

Dr. Tilde does not believe in incentives.

### **Role of Accreditation and Law**

Dr. Tilde agrees with accreditation as a means “to standardize things and encourage referral”. However before any law is conceived to mandate physicians to refer all TB patients to a DOTS facility, there should be enough DOTS centers. “But really, dissemination of information and enough discussion to around medical circles are really what’s important. You don’t really need a law.”

### **PPM Mix**

She could work with a public provider. She was once a general practitioner in a rural setting and worked closely with health centers.

### **Role of the Private Sector in DOTS**

1) To consolidate efforts of putting out guidelines for treating TB so that private physicians will know how to treat TB; 2) Ensure availability of DOTS centers that private physicians can refer to; 3) Physicians should continue medical education specially on TB; and 4) continue with their provision of services.

### **Suggestions**

More DOTS centers and expand laboratory capability to include TB culture.

## **H. SWOT(Strengths,Weaknesses, Opportunities, Threats) ANALYSIS**

### ***Comparison of the Recommended WHO DOTS Framework and the Current Friendly Care TB DOTS Program***

<b>Components of the DOTS</b>	<b>Recommended WHO Framework</b>	<b>FRIENDLY CARE TB DOTS Framework</b>
<b>Political commitment</b>	DOTS incorporated into the national health system	No Memorandum of Agreement between the FC and the DOH incorporating DOTS into the FC Care Health Services
<b>Quality sputum AFB microscopy</b>	Access to quality-assured sputum microscopy for case detection among persons presenting with symptoms in health services	1. The Clinic is open to serve all patients. 2. There is a designated sputum collection area outside the clinic but within the immediate area of

		<p>the facility complex.</p> <p>3. Observed to instruct patients to collect sputum at home and return with three samples.</p> <p>4. Sputum smear microscopy performed at site.</p> <p>5. One medical technologist trained on AFB microscopy who also performs other non-TB laboratory services.</p> <p>6. Initial AFB sputum is not free. Cost of follow-up sputum exams of enrolled DOTS patients is included in overall DOTS fee.</p>
<b>Standardized treatment regimen, including DOT</b>	Standardized short-course chemotherapy regimens of 6-8 months, for smear positive cases, with DOT during the intensive phase for all sputum positive cases, the continuation phase of rifampicin-containing regimens and the whole re-treatment regimens	<p>1. Patient, treatment partner and DOTS physician enter a written contract of agreement before enrolment to DOTS program</p> <p>2. Rifampicin-based short course chemotherapy</p> <p>3. FC Clinic does not do on-site DOT. Gives patients enough drugs needed until next follow-up. During first two mos, ff-up weekly; 3<sup>rd</sup> -6<sup>th</sup> mos, ff-up every two weeks.</p> <p>4. The supervision and implementation of DOT rests on the commitment of the TP and the motivation of the patient.</p> <p>5. Treatment partner rolemainly to remind patient.</p>
<b>Regular supply of anti-TB medications</b>	Uninterrupted supply of quality –assured drugs with reliable drug procurement and distribution systems	<p>1. Drug supply from DOH free of charge</p> <p>2. No explicit drug procurement system</p> <p>3. FC administrator is liason for drug procurement</p>
<b>Standardized recording and reporting</b>	Recording and reporting system enabling outcome assessment of each patient and assessment of overall program performance	<p>1. FC uses Standard NTP forms</p> <p>2. No explicit reporting system to the NTP</p> <p>3. Regularly reports to the FC administrator but no clear program evaluation system</p>

**STRENGTHS:**

1. The FC Clinic has a very friendly and caring atmosphere.
2. FC Leadership very supportive of TB DOTS program.

3. FC Leadership and TB DOTS team with continuing efforts to improve the implementation of DOTS in FC.
4. TB Physician committed, knowledgeable, articulate. Patients comfortable with her and trusts her.
5. FC clinic location very strategic and its catchment is a community with potential high TB rates (Marikina, Cubao)
6. FC Clinic location also within area of many potential referring physicians.
7. FC Clinic multi-practice also potentially a good starting point to detect symptomatic TB in the community.
8. FC has committed personnel (DOTS physician), physical space, room and equipment (microscope) for the TB DOTS Program.
9. Health education is regularly done, clearly delivered by the health providers and well-appreciated by patients.

### **WEAKNESSES:**

1. TB DOTS nurse and medical technologist with multiple tasks shared with rest of clinic.
2. Sputum collection area is ill defined outside the FC premises.
3. The DOTS staff themselves do not encourage patients to collect first sputum specimen at the first visit.
4. The Directly Observed Therapy component is not necessarily practiced on-site. Patients who come for their supply of meds take the dose for that day at home.
5. Follow-up schedule for next follow-up not regularly reminded.
6. Adherence to schedule of drug pick-up is very loose. Non-compliers are contacted many days after depending on the availability of the DOTS supervisor.
7. Early follow-up of Defaulters is not strictly enforced
8. Not maximizing the use of IEC materials
9. No program for educating Treatment Partners

### **OPPORTUNITIES:**

1. Increase number of referring physicians by distributing information materials ie pamphlets to private practitioners within catchment area.
2. Show health videos at regular times thru the TV at the waiting area. May increase case detection by encouraging self-reporting of symptoms by patients consulting for other problems.
3. Optimizing the use of IEC materials.
4. Improvement of Infection Control Measures in the facility to decrease risk of infection to staff and other patients ie masks.
5. Systematic and timely follow up of Defaulters
6. Orientation and closer monitoring of Treatment partners.
7. Strict implementation of DOTS policy especially during the first 2 months of treatment.

### **MOST IMPORTANT FINDINGS:**

- 1) Strong political will from leadership
- 2) Location is strategic.
- 3) External referrals have not been explored yet.

- 4) Target cure rate of 85% was not achieved.
- 5) High default rate of 25%.
- 6) Microscopy services need to be able to accommodate more specimens.
- 7) The observation of patient's daily drug intake (DOT) is not strictly complied with.
- 8) TP training is very loose and informal.
- 9) Follow-up to get free medications not strictly implemented.
- 10) Record Keeping is not complete.

# MANILA DOCTORS HOSPITAL TB DOTS CLINIC

## SITUATIONAL ANALYSIS

### A PRIVATE HOSPITAL MODEL

#### A. Historical Background

##### Profile of the Health Facility Base

Manila Doctors Hospital (MDH) is a 400-bed private tertiary hospital located at United Nations Avenue, Ermita, Manila. It has 500 active and courtesy physician staff members of varied fields of specialization. There are accredited training programs for Internal Medicine Residency and Pulmonary Medicine Fellowship. The hospital offers multi-specialty services both in the outpatient and in-patient departments.



##### PPM-DOTS Clinic Conceptualization

The idea of setting up a TB DOTS Clinic at MDH originated from the PhilCAT research project funded by the Centers for Disease Control and Prevention (CDC), which aimed to develop TB DOTS-PPM models in the country. Drs. Rodrigo Romulo and Abundio Balgos then conceptualized the clinic as the Private Hospital-Based DOTS Model. Preparatory activities started in March 2002. The team conducted a survey from a random sample of the hospital's active medical staff, stratified according to specialty on April 2002. This survey showed that of an average of 50-60 patients per week seen, PTB is diagnosed in about five patients. A review of charts of TB patients treated in the clinics of three pulmonologists of MDH revealed that despite diligent efforts to trace and follow-up patients, 30% failed to complete treatment. Contrary to common belief that

private patients are able to finance their medications, many patients actually, fail to finish therapy because of inability to shoulder out-of-pocket treatment-related expenses.

Dr. Abundio Balgos, the team leader of the Private Hospital-Based TB DOTS model project, spearheaded negotiations with MDH management to obtain approval for the operation of a TB DOTS clinic within the Prepaid Industrial Clinic. Dr. Balgos initially considered the industrial clinic site because it caters to health cardholders and the clinic is open up to 5 pm only. He wrote a letter to the Department head of the Prepaid clinic indicating the need for space for the DOTS Clinic. Dr. Garcia, the head of the clinic, agreed as this could be an opportunity for marketing the Prepaid clinic. She wrote the administration about the request, which was subsequently approved. This culminated in a Memorandum of Agreement between the MDH management and the PhilCAT Team.

### **Implementation and Progress through Time**

The MDH TB DOTS Clinic started operations on August 1, 2002. The Clinic was envisioned to serve patients referred not only by the physician staff of the hospital, but also by nearby hospitals and clinics. To facilitate follow-up and defaulter tracing, patients who live or work within the 2-km radius of MDH is the catchment population, which covers about half of the area of District V of the city of Manila. Through time modifications in case detection and recruitment strategies are now being implemented in an effort to target not just the low-income group but the upper income group as well.



## B. THE CURRENT TB DOTS CLINIC SYSTEMS OPERATIONS

The clinic has a manual describing the MDH DOTS Clinic staffing, including the duties and responsibilities of each member. The policies on patient diagnosis, procedures on initiation of treatment, case-holding activities, defaulter tracing plans, drug inventory and replacement are adapted from the NTP and are contained in the MDH DOTS manual also.

### *The DOTS Process*

A flowchart depicting the process that a patient goes through in the management of TB upon entry into the clinic is available for the DOTS providers and is strategically posted for patients to see. *See Appendix A.*

### **Case Detection**

<b>KEY PROCESSES – CASE DETECTION AND DIAGNOSIS</b>
1. Clientele – patients residing or working within the 2 km radius of MDH
2. Identification and assessment of TB suspects integrated in the doctors' clinics
3. Trained physician facilitates referral of TB suspects to the DOTS program
4. Trained DOTS nurse facilitates enrollment of eligible TB clients
5. Home sputum collection
6. Sputum smear microscopy at MDH Laboratory
7. Pre-existing chest x-ray service in the facility
8. TB Diagnostic Committee exists for smear negative cases

Staff physicians of MDH, the Prepaid Industrial Clinic and nearby hospitals and clinics refer TB suspects to the MDH-DOTS program. Patients who reside within the 2-km radius of MDH are eligible for enrollment into the program.

Initial assessment is done at the private doctor's clinic. Upon referral to the DOTS clinic, the patient is reassessed, sputum examination ordered, and the appropriate regimen is prescribed based on the NTP guidelines.

### Sputum microscopy

Patients are instructed to collect sputum at home. Sputum cups are provided in the clinic and the patient submits the specimen to the hospital's laboratory. There are no sputum collection booths or microscopes in the clinic. Sputum microscopy is performed at the hospital's laboratory facility. A medical technologist trained at the Research Institute of Tropical Medicine processes most of the sputum specimens from enrolled patients. A number of patients have their sputum AFBs done at the Philippine General Hospital, where the cost of the procedure is lower.

### Chest x-ray services

Radiologic procedures are readily available in the facility although some x-rays are done outside of the hospital because of the relatively higher cost at MDH.

### TB diagnostic committee



A TB diagnostic committee exists who deliberates whether sputum negative but x-ray positive patients should receive treatment or not. At present, the committee is composed of three pulmonologists and 2 infectious disease specialists. This committee convenes only if there is a problematic case that needs to be discussed.

## Case Holding

<b>KEY PROCESSES – TREATMENT AND CASE HOLDING</b>
<ol style="list-style-type: none"><li>1. Contract of agreement signed by physician, patient and treatment partner</li><li>2. Standard short-course rifampicin-based chemotherapy prescribed by physician</li><li>3. DOT supervised by DOTS nurse Monday to Friday in the clinic and by identified family member on Sundays and holidays at home throughout the intensive and continuation phase of treatment</li><li>4. Personalized patient health education sessions during clinic visits</li><li>5. Telephone numbers of the clinic available for adverse events and other concerns</li></ol>

### Standard treatment regimen

Treatment regimen consists of rifampicin-based short course chemotherapy given for 6-8 months depending on disease category. The DOTS health providers start the appropriate regimen according to the patient type and classification. Then, the health provider instructs patient to identify a treatment partner prior to referral to the DOTS program.

### Directly observed treatment

Before starting treatment, the patient, the treatment partner and the DOTS referring physician enters a contract of agreement. This contract contains the diagnostic and treatment policies and procedures, which the patient has to adhere. Patients are required to come daily during the intensive and maintenance phase of treatment except Sundays and holidays. The DOTS nurse watches the patient swallow his medication and records this in the treatment card. The DOTS nurse also reminds the patient of the next appointment. The family member serves as the alternate treatment partner during Sundays and holidays that the patient will not visit the clinic.

Schedule of sputum exam follow-up is in accordance with NTP guidelines depending on the bacteriology type and treatment category of the patient.

To date, majority of the patients enrolled in the clinic are either in the low-middle and low-income group. Starting August 2003, case finding and recruitment strategies were modified in an effort to target the upper middle and upper income group of patients. Three options are given to the patients as follows:

1. First option is the original scheme wherein DOT is conducted at the DOTS Clinic within the Pre-paid Industrial Clinic of MDH

2. Second option, if patient refuses the first option, is to do DOT in the clinics of the five pulmonary and two infectious disease specialists. Trained clinic secretaries will serve as treatment partners.
3. Third option, if patient refuses first two options, is a family treatment partner to do DOT at home, but still with weekly reporting and monitoring.

### Handling adverse events

Patients may call the DOTS provider through their mobile phone numbers or through the clinic telephone for adverse events.

### Defaulter tracing mechanisms

If patient is late or does not come, the DOT treatment partner should call patient at home or at work and notify the DOTS administrator. If the patient cannot be contacted, the DOT treatment partner personally visits home or workplace within 2 days of default. The referring physician should also be notified at this point. The cause of the patient's failure to come is discussed with project leader and facility administrator. Depending on the circumstances and needs, decision is arrived at whether to continue, transfer, or terminate treatment. Continuation of treatment is decided if the problem identified is transient or reversible. Patient may be transferred to another DOTS center if the problem is time and accessibility. Termination means sending back the patient to the referring physician for continuation with non-DOTS treatment.

### Health education

The clinic has posters on the wall (site map, IEC materials).



Pamphlets or brochures are available for patients (*see attachments*). Individual discussions are usually held during the initial consultations in the presence of the patient, relative or treatment partner. This was done last on September 8, 2003. Group discussions are held but not on a regular basis. The last one was on March 29, 2003. The key messages conveyed include transmission, adequate treatment (regular drug intake, combination of drugs, completion), consequences of inadequate treatment, side effects of drugs, prevention of spread, and importance

of follow-up sputum examination. The daily meeting during DOT is considered a consultation. The DOTS health providers conduct the health education discussions.

### Drug Supply

KEY PROCESSES – DRUG SUPPLY
1. Standard treatment regimen free of charge
2. Supply of essential anti-TB drugs from the Department of Health

The clinic provides the following drugs free of charge: Type I and Type II treatment regimens, ethambutol tab (400 mg), streptomycin injectable (1g), INH tab (100mg), PZA tab (500mg), 4-drug FDC tablets, and 3-drug FDC tablets. The oral preparations are in blister packs. Each patient's supply (6-9 months) is placed in individual plastic bags and stored in a metal filing cabinet. The storage is clean and protected from rain, sun, and floodwater.



The Department of Health supplies the TB drugs. There is enough supply for the currently enrolled patients although there was a time when the DOH temporarily ran out of stock and drugs were purchased using the CDC funds. There has not been any patient whose enrollment was held because of unavailability of drugs. There is an inventory policy to ensure that there is enough supply to commence and complete treatment per new patient enrolled. An inventory of drugs exists to ensure the availability of medicines. The “first expiry first out” policy is followed.

The TB facility administrator facilitates the requisition and distribution of drugs and other supplies, coordinates with the DOH, and ensures availability of drugs at all times. The administrator goes directly to DOH to get the drugs.

### Recording and Reporting

<b>KEY PROCESSES – RECORDING and REPORTING</b>
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|--|
| <ol style="list-style-type: none"><li>1. Standard NTP forms used and maintained by clinic administrator</li><li>2. Quarterly reports submitted to Manila City Health</li></ol> |
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Record keeping is both the responsibility of the clinic administrator and clerk. The following forms and sheets are available: TB symptomatics master list, laboratory request form, laboratory register, treatment card, identification card, TB register, referral/transfer form, laboratory quarterly report, counting sheet for laboratory activities, quarterly report on new cases and relapses, treatment outcome sheets, and quarterly drug inventory and requirements. These forms are legible, complete, and up-to-date except for the quarterly report on laboratory activities. These reports are submitted to the Manila City Health and PhilCAT. Starting June 2003, they have been submitting reports to the Manila City Health.

### **Service Fees**

Consultations in the clinic, whether they are initial or follow-up, are free of charge. However, the private physicians who saw them before referral charge professional fees. Initial sputum AFB smear costs PhP 200 while the follow-up smear costs PhP 100. Chest radiography costs PhP 385 at the MDH. All anti-TB drugs are free of charge. There is no system employed to determine which patients are charged or not.

### **Client-Provider Interaction – DOTS as observed**

We observed seventeen client-provider interactions. There were three newly referred patients coming for first consultation, 1 patient restarting treatment after default and 13 patients for follow-up. Twelve of 13 patients for follow-up were for DOT while 1 had problems. Three of 13 patients for follow-up were at the intensive phase of treatment while the rest were in the maintenance phase. One patient with problem is in the intensive phase while another in maintenance phase. Five were Category I patients, 5 Category II and 4 were Category III. The service providers present during the observation periods were the nurse in nine of 17 interactions and the physical therapist in 8 of 17 interactions. Duration of interaction ranged from 3 to 45 minutes with mean of 10.2, SD 10.4 minutes.

#### Assessment

Thirteen of 17 patients were not asked for symptoms during the interaction as most of the patient came just for DOT. Of those asked the following were mentioned: cough of 2 weeks or more, weight loss, health concerns, concerns about TB treatment, and for other questions. Of the follow-up, only one was asked about adverse drug reaction.

Physical examination was not performed in all encounters.

#### Request for sputum exam

Only one of three new patients was asked to undergo sputum examination because the others had theirs already requested on the first visit. One was asked if sputum was submitted already. Instructions on proper handling and transport were given. One patient was given a written reminder of the schedule of the next sputum examination. (Note: Although labeled as new patients, most of these actually had their first visit few days prior to day of observation.) In 9 of

13 patients, the provider indicated in the treatment card the schedule of the patient's next sputum exam. Sputum collection is usually done at home and not in the clinic.

#### Directly observed treatment

All patients for follow-up were given the necessary drugs. The provider observed all the patients take their drugs and marked the treatment cards. Except for one patient, the provider reminded all patients of their next appointment.

For new patients, the provider performed the following steps:

- Informed them that they have TB (2),*
- Gave information on TB (2),*
- Motivate patient to undergo and complete treatment (2),*
- Explained TB DOTS case management (2),*
- Opened treatment card/ID cards and started treatment (2),*
- Registered the patient in the TB register (2),*
- Assigned a treatment partner (1),*
- Showed and identified each pill to the patient (2),*
- Did DOT (2),*
- Informed patient about possible adverse reactions (1),*
- Recorded date of treatment start (2),*
- Recorded first follow-up sputum examination (2),*
- Contract signed (1)*
- Registered names of the new patients in the TB symptomatics Masterlist.*

#### Education

The provider imparted information about TB to two new patients. The key messages included were: TB is infectious, TB can be cured, cover mouth when coughing, regular drug intake, completion of treatment, consequences of irregular intake, side effects, hygiene and nutrition, follow-up sputum examination, family/treatment partner support, vigilance with symptoms among contacts, and need for symptomatic contacts to consult. The IEC materials used were pamphlet and comics.

All patients were greeted warmly. During conversation, the provider used clear, simple, and appropriate language. In 12 of 17 observations, the provider allowed the patient to ask questions. In nine of 11 instances, the provider responded to the questions. In six encounters, the provider gave her contact number in case the patient may have additional inquiries.

Other concerns mentioned were nutrition, health beliefs, social stigma, and work-related issues.

*Excerpts from an observation of a new patient - September 18, 2003*

*Observation started 7:30 pm*  
*Observation ended 8:05 pm*

- ❖ *Client works as a bank officer*
- ❖ *3<sup>rd</sup> visit to the DOTS clinic*
- ❖ *Found to have pulmonary TB on a routine x-ray performed as part of the physical exam, while applying for a new job in another bank.*

- ❖ *Explained to Health provider her disbelief when she found out that she had TB and immediately sought a 2<sup>nd</sup> opinion c/o Manila Doctor's. Same diagnosis given and was subsequently referred to the DOTS-CLINIC.*
- ❖ *During this visit, she was relating how she has dealt with her condition, her fears of infecting other people especially her kids, denials of the disease*
- ❖ *Attributed her condition to sharing an inhaler with a fellow officemate when she had an asthmatic attack in the office. Although, she also said that she had "weak lungs" even as a child.*
- ❖ *Her mother-in-law upon learning of her condition was vehement that she does not have TB. Probably, the x-ray was not clear leading to the misreading of the results.*
- ❖ *After knowing her illness and its infectiousness, client began refraining from kissing her kids; she also segregated her utensils and avoided her closest friends for fear of infecting them.*
- ❖ *She would also find herself crying and until now, she couldn't tell anyone in her office for the fear of losing her job.*

## **Performance Evaluation**

### External evaluation

The Manila City Health does external evaluation. The last evaluation was on May 2003 done by the City NTP coordinator. During this evaluation, the NTP coordinator interviewed the health workers and patients, conducted a physical inventory of logistics and other supplies, and taught the staff how to fill out forms.

### Internal evaluation

The project leader evaluates the staff by doing spot checks in the clinic on Mondays, Wednesdays, or Fridays. He uses the rate of case finding and clinic attendance as performance measures for evaluation.

For quality improvement, the project leader suggests improvements in the infrastructure to include sputum collection area with good ventilation; upgrading of the quality of AFB smear microscopy; and make the clinic self-sufficient through PhilHealth accreditation.

The TB Clinic Administrator also suggests improvement in ventilation.

## **C. STATISTICS**

### **DOTS Process and Outcome Indicators**

There are 43 TB symptomatics seen at the TB DOTS facility since August 2002 when the clinic started. Of these, 29 are male and 14 are female. Table 1 shows the distribution of patients according to age and gender. Most of the TB symptomatics seen are in the productive age group.

**Table 1. Total number of TB symptomatics by age and gender.**

Age Group	Male (N=29)		Female (N=14)		Total (N=43)	
	n	%	n	%	N	%

15-24	4	14	3	21	7	16
25-34	5	17	5	36	10	23
35-44	9	31	3	21	12	28
45-54	6	21	1	7	7	16
55-64	5	17	2	14	7	16
Total	29	100	14	0	43	100

There were 42 TB patients who were able to submit 3 sputum specimens. Of these, 5 were found to be sputum smear-positive (12% smear positivity rate) Of these five, 2 are new patients, one relapse and 2 are transfer-in patients from other clinics.

There are 43 TB cases registered. Forty-two of these are of the pulmonary type, with one extra-pulmonary TB.

Table 2 shows the breakdown by category of TB patients upon enrolment into the DOTS program.

**Table 2. Patient category on diagnosis**

Type of Patient	N	%
New: Smear (+)	2	5
Smear (-)	37	86
Relapse	1	2
Transfer in	2	5
Return after default	1	2
Failure	0	0
Total	43	100

Most of the TB patients enrolled in the clinic are in category III. (Table 3)

**Table 3. Treatment Category of enrolled TB patients**

Treatment Category	N	%
Category I	14	33
Category II	11	26
Category III	18	42
Total	43	100

The cure rate among five smear positive patients is 100% (Table 4). Completion rate is 52%. Treatment success rate is 74%. Default rate is 4% and transfer out rate is 22%.

**Table 4. Treatment Outcome**

Treatment Outcome	N	%
Cure	5	22
Treatment completed	12	52

Treatment failure	0	0
Default	1	4
Transfer out	5	22
Died	0	0
Total	23	100
<i>Ongoing treatment</i>	20	

The 2 new sputum-positive cases converted to smear negative at the end of 2 to 3 months (100% sputum conversion rate at 2<sup>nd</sup> to 3<sup>rd</sup> month).

Majority of the treatment partners for this clinic are family members, however, most are not active. The physical therapist and nurse, who are DOTS health providers in the clinic, function as treatment partners also. (Table 5)

**Table 5. Distribution of Treatment Partners**

Treatment Partner	N	%
Nurse	1	2
Midwife	0	0
Family member	43	96
Others: physical therapist	1	2
Total	45	100

## **D. TB DOTS CLINIC PHYSICAL INFRASTRUCTURE SET-UP**

### **Accessibility**

The Manila Doctors Hospital (MDH) DOTS Facility is located at 667 UN Avenue, Manila. It is within the Industrial Clinic, an outpatient clinic, which caters to pre-paid health cardholders who are employees of the Manila Doctors Hospital and other nearby establishments such as Metrobank and Shell. This facility is a walking distance from the corner of UN and Taft Avenues, where public transportation is available. The facility is accessible by public transportation and the Light Rail Transit along Taft Avenue. It has very limited parking.





## Infrastructure and Examination Facilities

The DOTS clinic is in a cubicle shared with the Industrial Clinic physician who occupies it from 8am to 2-4pm. The official time for the DOTS facility is from 1 to 9 pm. The cubicle may not be available until 4pm on weekdays. DOTS patients who arrive earlier are seen at their private doctor's clinic. The DOTS services are offered from Monday to Friday, 4-9pm and Saturday, 8am-12noon. Clinic sign and schedule are posted inconspicuously on the door of the Industrial Clinic. The clinic's telephone numbers are 5243011 local 3350 or 8140.

The entire Industrial clinic is 6 x12 sq m. The floor area devoted to DOTS is 3.5 x 3.0 sq m. This is usually sufficient for the clinic load. There is adequate visual and auditory privacy within the cubicle. The waiting area is just outside the cubicle. It is 2 x 1 sq m in size and has seats, which can accommodate up to six patients. The area is with air conditioning system. Electric and exhaust fans are provided. The whole area and its surroundings are generally clean. Lighting is adequate. There is no piped water supply or sink within the cubicle. There are three garbage cans-one each for biodegradable, non-biodegradable and infectious wastes.



## Equipment and Commodities Inventory and Management

The clinic has one each of the following: stethoscope, BP apparatus, and weighing scale. There are disposable needles and syringes and sharps are placed in narrow-mouthed plastic bottles before being discarded in the infectious garbage container. Drinking water and glasses are available.

In addition to a built-in cabinet, a metal cabinet is in place where drugs are kept. There is a doctor's table, chairs, and examination table. There is a stand fan, as well as an exhaust fan in the cubicle. A written inventory of equipment and supplies is not available.

## **E. HUMAN RESOURCES SET-UP**

### **The DOTS Clinic Staff**

The DOTS Clinic staff is composed of two full-time health providers and one project director. The health providers are Ms. Jean Balgos and Jorica Dagudag. Ms. Jean Balgos is nurse by profession and carries the title of facility administrator and research assistant. Ms. Jorica Dagudag is physical therapist by profession and is the accounts manager and clerk. Both Ms. Balgos and Dagudag function as drug supply managers and treatment partners as well. Dr. Abundio Balgos is the DOTS physician/project leader. He is a staff pulmonologist and has his own private clinic in MDH.

### **DOTS Center project leader/Physician**

**The project leader oversees the DOTS clinic operation and serves as liaison to the MDH Administration, PhilCAT, PPM partners, and other organizations. He is the medical consultant for day-to-day problems that need immediate attention. He provides initial assessment and follow-up, requests diagnostic examinations, prescribes TB drugs, manages adverse drug reactions, provides patient education and helps in the processing of medical benefits from GSIS/SSS. He has recently organized a committee of pulmonologists who can be called anytime although this group is apparently not yet active.**

### ***Experience and training in TB DOTS service delivery***

He has been involved in the preparatory phase of the private hospital-based TB DOTS model since March 2002. He graduated as a MD in 1980 and had further training in Internal Medicine and Pulmonology. His educational background included all about tuberculosis (clinical manifestation, diagnosis, prevention, and treatment) except DOTS, NTP policies/procedure and program management, and TB drug supply.

He underwent three TB DOTS training already, the first of which was in 2002. The training covered NTP policies and procedures, case finding, case holding, recording and reporting, logistics management, monitoring and supervision. He is familiar with the *Manual of Procedures for the National TB Control Program* and the *Comprehensive and Unified Policy on TB Control in the Philippines* and is a proponent of the latter. He is PhilHealth accredited.

### ***TB DOTS service delivery knowledge and practices***

He follows the NTP/WHO protocol in managing TB patients. The signs and symptoms that he considers to identify an individual as possibly TB symptomatic are the following: cough of two or more weeks, fever, chest and/or back pain, and poor appetite. Once he has determined that the patient is a TB symptomatic, he instructs the patient to collect sputum specimen during the first visit.

He has access to the classification of patients according to laboratory examination results kept at the patient's file. If the patient's sputum smears were found to be negative, the patient is still treated and assessed based on his clinical presentation and CXR. To him, the messages that must be emphasized to the patient are the following: TB is infectious, requires regular drug intake of a combination of drugs, and requires completion of treatment.

To ensure that a TB patient complies with treatment, he refers to the DOTS clinic. If a defaulter comes back for treatment within less than 3 weeks, treatment schedule is continued. If a defaulter has stopped treatment for more than 3 weeks, the regimen is restarted. Response to treatment is monitored through follow-up sputum examination, chest x-ray and regular weighing of the patient. He manages adverse drug reactions by discontinuing the drugs temporarily and reinstating them one at a time.

### **TB DOTS Clinic administrator/ DOTS nurse**

The facility administrator supervises and runs the day-to day activities in the clinic including patient recruitment, patient education, treatment, case holding, recording and stock inventory/accounting. She facilitates the requisition and distribution of drugs and other supplies, coordinates with the DOH, and ensures availability of drugs at all times, conducts one-on-one counseling of patients, and trains treatment partners. She checks the diagnostic work-up done by the referring physicians. If diagnostic work-up is not yet done, she requests for sputum AFB and CXR, explains DOTS, facilitates contract signing, and starts treatment. She has been working in the clinic for 6 months now.

### ***Experience and training in TB DOTS service delivery***

The TB DOTS facility administrator is a nurse by profession. She graduated in 1978 with BS Nursing and in 1986 with Masters in Hospital Administration. Her education covered TB prevention and control, signs and symptoms, diagnosis, treatment, management and distribution of drugs and supplies. It did not include DOTS, AFB smear microscopy, and laboratory quality assurance. She received DOTS training in May 14-16, 2003 conducted by PhilCAT. It covered NTP policies and procedures, case finding, case holding, recording and reporting, logistics, and monitoring and supervision. She does not think that she needs further training. She is familiar with the Manual of Procedures for the National TB Control Program and the Comprehensive and Unified Policy on TB Control.

### ***TB DOTS service delivery knowledge and practices***

She identifies an individual as a TB symptomatic by cough of 2 or more weeks duration, fever, hemoptysis or blood-streaked sputum, chest/back pains, and fatigue and/or body malaise. Once the patient is identified, she educates the patient about DOT and advises on the prevention of transmission of TB. Sputum specimen is not done on first visit but is requested. Patient collects sputum at home and sends it to the laboratory for processing. She has access to the classification

of patients according to the result of the smears. The record is kept in the patient's file. If all smears are negative, the patient is referred to the physician. She is familiar with the classification of patients according to their AFB smear results.

A defaulter who comes back is requested sputum smear examination if has been absent for > 2 weeks. Response to treatment is monitored through follow-up sputum examination and improvement in signs and symptoms. A patient with adverse reaction to drugs is advised to discontinue medication. The schedule of the 1<sup>st</sup> sputum smear follow-up exam for Category I patient is towards the end of the 2<sup>nd</sup> month of treatment. She records the treatment outcome and gives quarterly reports to PhilCAT and Manila City Health.

#### *Supervision*

Her immediate supervisor is the project leader. The project leader verifies the records, treatment cards, and laboratory register, and interviews health workers and patients.

According to her, there is no system of evaluating staff performance.

#### *DOTS treatment partner/Clerk/Account manager*

Based on the MDH DOTS manual, she acts as the main treatment partner of patients at the DOTS Clinic. She serves as the liaison to other treatment partners located in the private clinics of DOTS-certified physicians in MDH. She is responsible for data entry and updating of the NTP ID cards, TB registry, NTP treatment cards, stock inventory, and other records and forms. She assists the facility administrator in all other activities of the clinic. She contacts by phone and/or home visit the patients who fail to follow-up and coordinates with other designated treatment partners in tracing defaulters. During the interview, she said that the service she provides include dispensing of drugs, updating the TB registry, and submission of reports. She has been employed in the clinic for 1 year and 3 months now.

#### *Experience and training in TB DOTS service delivery*

The treatment partner/clerk/account manager is physical therapist by profession. She graduated in 1999. Her educational background included TB prevention and control, signs and symptoms, diagnosis, and treatment. She participated in the TB DOTS training conducted by PhilCAT in May 14-16, 2003. It covered NTP policies and procedures, case finding, case holding, recording and reporting, logistics, and monitoring and supervision. She does not think that she needs further training. She is familiar with the Manual of Procedures for the National TB Control Program and the Comprehensive and Unified Policy on TB Control.

### *TB DOTS service delivery, knowledge and practices*

She identifies a TB symptomatic through the presence of cough of two or more weeks duration, weight loss, and back pains although she claims that most of the patients are actually asymptomatic. Once a patient is identified or referred, she instructs sputum collection, educates, and advises on the prevention of transmission of TB.

She has access to patient's classification and starts treatment based on this. She consults the physician if she has questions about which treatment regimen to give the patient. If a patient is sputum smear negative, treatment is started anyway if CXR is positive. Patient with two positive smears is "smear-positive". Positive smear at 5<sup>th</sup> month of treatment is "treatment failure". Health education message emphasized is that TB can be cured. New pulmonary smear-positive case is started with regimen I. Regimen II is given to treatment failure case.

To ensure patient compliance, she performs the following: explain the importance of compliance, regularly motivate patient by emphasizing key messages, and immediately try to retrieve patient if he fails to report as expected. If a defaulter comes back, he gets re-educated, sputum exam repeated, and referred to the physician for re-evaluation and re-treatment. Response to treatment is monitored through follow-up smears, CXR and follow-up with the physician health provider. In case of adverse reactions, the patient is referred to the physician. First sputum follow-up is done towards the end of 2<sup>nd</sup> month. Outcomes are recorded and reported quarterly to the NTP coordinator.

Her immediate supervisor is the facility administrator who reviews treatment cards, and interview health workers and patients.

To her, there is no system of evaluating staff performance.

### **Medical technologists**

#### *Experience and training in TB DOTS service delivery*

There are 2 medical technologists assigned for the DOTS clinic. Both of them graduated in 1977. Their educational background included TB prevention and control, signs and symptoms, and AFB smear microscopy. Both never had basic DOTS training although one had training at RITM mainly on AFB staining and sputum microscopy. They both think that they need DOTS training as they do not know anything about DOTS. Training should include DOTS and the latest developments about TB. The medical technologist who trained at RITM heard about the Manual of Procedures for the NTP and the Comprehensive and Unified Policy on TB but do not remember details.

They are not aware of the DOTS clinic operations as their duty is limited to performing AFB smears. Their immediate supervisor is the head of the Microbiology section (Dr. Velmonte).

For quality improvement, the suggestions include separate sputum collection area, separate DOTS clinic area, separate materials and equipment for TB patients only, biological safety cabinet, and use of safe "stain" (reagents) for smear.

### **Baseline KAP of Physicians at MDH**

The baseline KAP survey conducted by the team in April 2002 (Balgos 2002) prior to setting up the clinic revealed that adherence to standard management guidelines for PTB is poor. All physicians (n=41) utilize chest x-ray as the initial diagnostic test for TB suspects. Only 15% of the respondents request sputum AFB for 100% of their patients whom they suspect to have TB. Adherence to NTP guidelines was only 18% and only 10% are aware of DOTS.

## ***F. THE DOTS PARTNERS' PERCEPTIONS***

### ***Referring Physicians' Perspectives***

The referring physicians interviewed included one infectious disease specialist, one family physician, and 2 pulmonologists, one of whom is the head of the Industrial Prepaid clinic where the DOTS facility is located.

#### Stimulus for referral

The head of the Prepaid clinic learned about DOTS from the project leader himself who approached her because of the need for space for the DOTS clinic at MDH. The other pulmonologist, a private physician at MDH, is actually the project leader of another DOTS model (PhilAm) and thus, was already aware of it even at the planning stage. The infectious disease specialist, who is also the head of the microbiology laboratory of the hospital, learned about DOTS from the project leader as well. The family physician is actually a Prepaid provider who was present when the project leader spoke at the Industrial clinic.

For the head of the Industrial clinic, the DOTS Clinic serves as an advertisement for the Prepaid clinic. Patients who come in are made aware of the other services of the clinic. Others refer because of the free medicines that patients, who can not afford, can avail of. Another mentioned that the supervision, follow-up, and recording are better done in the DOTS set-up.

#### Knowledge on TB DOTS

All are aware that TB is a priority disease in the country, with millions afflicted and dying from it. All of them see TB patients regularly in their clinic. One interviewee claims that many practitioners still do not know about the burden of the disease.

All believe that DOTS is more effective than self-administered treatment although one emphasized the difficulty of complying and difficulty in recommending it. One of them suggested that proper administrative sanction, adequate motivation, and education should accompany its implementation.

Only one of the four interviewees probably knew exactly what the five components of DOTS are. Among the five components of DOTS, according to one pulmonologist, the most difficult is the "political will". This was explained more from the perspective of the patient's will and attitude

(patients come late and others are impatient). It was also mentioned that “sputum microscopy” is a problem, i.e. test result takes awhile unlike CXR, which is readily available. Another physician mentioned that the hospital is not equipped to process sputum AFB smears. One mentioned “drug supply” is the most important component. Three of four said that adequate information dissemination or education is needed about the burden of the disease and to dispel misconceptions about the disease.

### Attitude and perception

Advantages of DOTS to the patients include free drugs, increased likelihood of success, and friendly health providers were mentioned. Advantages to the physician include potential marketing strategy to attracting patients in the Prepaid clinic although to another, it does not really increase personal prestige nor income. Physicians are assured of monitoring and recording.

Disadvantages to the patients include interference with work schedule, need to travel especially for those living far from the clinic and thus, DOTS is limited for those who live nearby), and a “hassle” especially to those who can afford to buy their medicines anyway. Only one mentioned potential loss of patients as a disadvantage, although this would apply to private patients only and not to cardholders wherein physicians still get paid on a retainer basis.

### Referral practice

The range of patients seen is 1-3 per week. However, the highest referred thus far is three per physician since the onset of the program. The ones referred are the middle class to lower class with more of the latter. Most do not even offer it to the upper class, as they already know that these patients would not be agreeable to it. Two (the Industrial clinic head and the ID specialist) claimed they offer DOTS to all their TB patients. One offers “family DOTS” especially for those who live far from the facility. For those referred, there are no specific arrangements with the DOTS clinic regarding monitoring but most implied that regular follow-up (every 2 weeks to bimonthly) of referred patients would be good for the physician. One family physician mentioned that her patients still go back to her for other problems or report to her how they are doing.

There is consensus that practitioners in general are not aware of the program. There is need to educate, hold conference (even though not all invited attend), distribute flyers, train the doctors and allied professionals, certify the doctors, make the training be part of the requirement for PMA renewal, incorporate DOTS in the medical curriculum, involve the administration, advertise in TV (especially by the DOH secretary) to increase referral or recruitment. A common suggestion is a scheme where patients do not have to go to the clinic everyday. This is particularly suggested for patients in the upper class who are more difficult to convince.

All agreed to the proposed accreditation of DOTS providers. Three of four agreed that there should be a law to mandate referral to DOTS center. One said that physicians cannot be mandated. Another mentioned that although he agrees with a law, he does not think that it will ever be passed. Another mentioned that although there is a similar law for AIDS patients, physicians either are not aware or do not follow.

One of four is not aware that DOTS is implemented in public health centers. Three have mentioned referring patients to public DOTS centers near their place of residence. One physician thinks that the government centers are less friendly because the personnel are overloaded with other tasks and thinks that NGO-ran DOTS are better because of the inherent “social conscience”

the NGO workers have. One had heard the government doctors' claim that the public DOTS is successful. Another mentioned that there are areas where it is working well while in other places it is not. He does not believe government reports because reports could be generated and that there should be a third party to monitor.

One interviewee who is familiar with different DOTS models since their inception, believe it is both the public and private doctors should share responsibility to treat TB patients. Referring patients to the DOTS clinic is a social contribution.

#### Fee schedule

Professional fees range from PhP300-600 for initial consultations. The follow-up visits are around PhP300. There is no formal socialized schemes but most give discounts or do not charge those who could not afford or relatives of the hospital employees.

#### **Treatment Partners' Perspectives**

The designated treatment partners (TP) of the 17 currently enrolled patients were mostly family members (11). The family members involved include wife (4), mother (2), husband (2), sister (2) and 1 not mentioned. Other treatment partners were friend (1), sister-in-law (1), and physical therapist/health provider (4).

The focus group discussion with treatment partners was participated by 4 treatment partners (2 spouses, an officemate, and a clinic health provider who is considered the DOTS clinic treatment partner) and a patient (spouse of one of the TP).

#### Knowledge and training on the role of the treatment partner in the delivery of DOTS

The roles and responsibilities identified by the treatment partners are the following: 1) to ensure continuous medication, especially during holidays by observing intake of drugs, reminding, and motivating the patients; 2) to encourage completion of treatment; 3) to identify drug reactions and bring patient for consultation; and 4) to guide and educate.

None of the treatment partners underwent training and all signified need for training to increase knowledge and apply what they learned. One TP mentioned taking care of his sick children as training by experience.

The relationship with the health providers is perceived as a partnership in making sure that drugs are taken, that drug reactions are watched out for, that progress of patient is reported, that patient follows up regularly, that results of examinations are known, and that doctor's advices are known and followed.

Most TP mentioned that they could take care of more than one patient as long as the patients are within the household, workplace, or neighborhood although one mentioned that there may be a problem with the availability of time.

#### Strategies to promote adherence to treatment completion



One of the participants mentioned the use of text message as a strategy to check on or communicate with the patient. Another scolds and force the patient to take medicine. Another TP scares the patients about the threat of MDRTB to the extent of saying... *"mas mabuti pang bumili ng kabaong dahil mas mura pa ito kaysa magkaroon ng MDR-TB"* Another one stated in jest *"niyaya ko siya sa Jones Bridge, itutulak na lang kita"*

Incentives are not perceived to be needed. None is given to the patients. One mentioned that the free drugs are already an incentive.

Some patients bring the drugs to the province during holidays or weekends. The TP ensures drug intake by either observing or communicating through text messages.

Young patients are easier take care of according to most TP as long as they are informed about their disease and the need for treatment because they are still fear disease. One reiterated the need to educate them since they are young and feel strong and thus, they usually take things lightly.

On the discussion about ensuring confidentiality, one TP said that usually the information about the patient is not spread to others because sometimes, even relatives, avoid getting near or visiting a TB patient. This is considered offensive. Others do not understand that TB is curable. An opinion that visiting the patients at home regularly (instead of them going to the clinic) may be better and more effective (but more work for the DOTS personnel) came up. A patient who joined the discussion feels that confidentiality is important because other people are squeamish (*"pandidiri"*) about the illness. Her husband, who is her treatment partner, disagrees, as according to him nowadays confidentiality is no longer necessary unlike in the olden days. Having a DOTS sign on the door of the clinic is acceptable as it encourages other patients because of the knowledge that free drugs are available.

There are no material incentives received by the treatment partners. Nonmaterial rewards mentioned were favors done by the patient, recognition from the patient, seeing the patient getting cured of the illness, and being able to recommend or give advice. One TP mentioned that he is doing the job for service and therefore, does not need incentive.

### Role satisfaction

In general being a treatment partner is "easy and difficult". It is easy if the TP is around or near the patient but difficult when not because the TP worries about the patient. One patient recalls her father getting sick but feels good about being able to apply what she learned and being able to give advice.

The suggestions given to improve their performance include: seminar or training, tools for recording drug intake, pamphlets (on "how to make patient take the medicines"), TV advertisements or public education, and mechanism to monitor the patients (to check for inconsistencies").

### **Clienteles' Perspective**

Seventeen clients were interviewed. There were 3 newly referred patients coming for first consultation, 1 patient restarting treatment after default and 13 patients for follow-up. Twelve of 13 patients for follow-up were for DOT only while one had problems.

Three of 13 patients for follow-up were at the intensive phase of treatment while the rest were in the maintenance phase.

### Demographics

The mean (SD) age of respondents was 36.2 (13.8), range of 18-60 years. Highest educational attainment was elementary in 3, high school in 4, undergraduate college in 6, vocational in 1, and 4/5 year course in 3. The main occupation was government employee in three, private company employee in 10. The household monthly income was 1,501 to 4,999 in 3 patients, 5,000 to 9,999 in 7 patients, 10,000 and over in 5 patients. Eleven of the patients were male.

### Patients' history

Twelve patients had symptoms before being enrolled in the clinic. Specific symptoms mentioned were the following: cough (7), fever (2), hemoptysis (3), chest/back pains (6), fatigue (3), body malaise (1), shortness of breath (2), weight loss (2), dizziness (1), and lack of sleep (1).

All patients had CXR taken before coming to the clinic.

Fifteen patients were referred by a health provider, mostly physicians while 2 learned about the clinic services through a relative, friend or neighbor. Patients are aware that the following services are provided in the clinic: consultation (1), DOT (6), health education (7), chest xray (1), and weighing and BP monitoring. Four did not know of other services.

### Patients' visit

Two out of 17 went to the clinic for consultation while the rest were there for DOT only. Two patients had a companion, one had a family member while another had a friend. All patients received the services they came for. Fifteen felt that the time spent was just about right, one felt it was too short and another too long. During the visit, seven mentioned that they had concerns about TB or other health issues that they wanted to discuss with the health provider. All seven were attended by the health provider to their satisfaction. Four had specific questions, which were addressed adequately by their health providers.

During the visit, the health provider examined two patients. The provider explained the examination procedure and results to the patients. All said that the provider involved them in making decisions about their health care and treatment.

All were satisfied with their visit.

### Patients' education

The provider explained to all patients what their illness is. The patients know the following about their illness: curable (2), infectious (2), PTB (2), “namamaga ang baga” (1), “spot sa lungs” (1). During the consultation, all patients felt that the provider was easy to understand.

Nine patients received educational materials at any one point during treatment. Five received pamphlets, three had comics, and 1 had a poster. The contents of the educational materials were TB (9), DOTS (3), and transmission (1). Educational materials were given out mostly during the first few weeks of treatment. Eight thought that the materials were helpful because it is an application of what was learned (1); emphasized on regular intake of medicine (1), great tool in information technology about TB(1), how to handle TB and to share information with others (1), increased knowledge on TB (2), learning about his condition (1), prevention of transmission (1).

Fifteen patients said that they did not attend a group talk in the facility. The two who were able to attend did so in March and April of this year. Messages in the talk included the following: TB is infectious (1), TB can be cured (1), cover mouth when coughing and sneezing (1), regular drug intake (1), and hygiene and nutrition (1).

#### Patients' knowledge (See Appendix C)

A significant percentage of patients still have misconceptions on how TB is acquired. Only 40% (7 patients) correctly stated transmission from a TB patient and another four patients stated inhaling the bacteria. The misconceptions are: smoking, alcohol intake, dirty surroundings, fatigue, lack of sleep, noxious acids in work, poverty, kissing, hand contact, ‘natuyuan ng pawis’, ‘panghina ng resistensya’, weak lungs, ‘over-sex’, usok sa sasakyan, weak immune system, shared utensils.

All patients believed that TB is curable. Majority thought that TB is transmissible. Most of them replied that the best treatment for TB is taking drugs in right doses and intervals (12). Majority also stated that it is necessary to complete treatment to cure TB (13) and the duration of treatment is 6-9 months (14).

Twelve know that TB drugs have side effects. Adverse effects include skin reactions (3), orange colored urine (3), GI intolerance (2), flu-like symptoms (1), others (headache, nausea, “madaling matunaw and pagkain”, “malakas kumain”, sleepiness, stool discoloration, weight gain), and one did not know.

All patients know that it is necessary to undergo follow-up sputum examinations.

#### *On quality of care*

All patients felt they had enough privacy during consultation. They all agreed that the TB DOTS facility ensures that the patients can talk privately with the provider. One patient felt that their personal information is not kept confidential.

The health provider reminded all patients when to come back for follow-up. All patients thought that the clinic hours and days are convenient. Three patients experienced being turned away from the facility during official working hours. Fifteen patients claimed that there is no waiting time while one waited for 15 minutes and another for 20 minutes. Both patients who waited thought that the waiting time was reasonable.

The location of the facility is convenient to all patients. Most of the patients walk to the clinic or take 10 to 30 minutes to reach the clinic. Longest travel time was 90 and 120 minutes for two of the patients. Six require one ride only while five take 2 rides.

Fifteen did not know of any DOT facility near their home. Two mentioned the following as nearby DOTS facilities: Friendly Care clinic and DOH/San Lazaro. The main reasons for not going to these facilities were referral to MDH and hearing about the facility but not knowing about it.

#### *On cost of care*

Consultation fees ranged from free-of-charge to PhP500 per visit. Medicines and other items were free of charge. Other services e.g. microscopy, CXR cost free to PhP600 per procedure. Transportation expenses ranged from none to PhP34 per trip. Fifteen felt that the expense was acceptable, one felt that it was “a little too expensive” and one did not know.

#### *For returning patients after default*

One defaulter was interviewed. Reason for treatment interruption is patient felt better (felt okay). He says that he will continue treatment in the facility.

#### *For revisit patients with problems*

One revisit patient had problems concerning treatment i.e. headache and nausea associated with drug intake. Patient felt that appropriate assistance is being given for the problem.

#### *For continuing patients*

Eleven were aware that they have someone assigned to ensure their medications were taken regularly. Seven had family members as treatment partners, 3 mentioned the nurse, and 1 a friend. During weekends and holidays, those with nurse (provider) as partner mentioned that they are responsible for themselves. Nine stated that treatment partners record their drug intake.

For improvement of services, two patients suggested distribution of IEC materials to family members and an outreach program with discussion on TB prevention.

## **G. INSTITUTIONAL COMMITMENT**

The Memorandum of Agreement between PhilCAT and MDH management formalizing integration of TB DOTS services in MDH was signed on August 2002. The administration is supportive of the TB DOTS concept.

The CDC through a research grant funded the setting-up of the hospital-based DOTS clinic at MDH. The annual budget supports supplies and materials, salary of clinic staff, training, IEC materials, TB educational campaigns, incentives for patients, maintenance and operating expenses, and transportation.

The Department of Health supplies the essential anti-TB drugs. During times when the DOH runs out of stock, the CDC funds or pharmaceutical companies cover temporarily.

The health providers in the clinic ensure that the supply of drugs is uninterrupted.

MDH does not provide a regular annual budget for the implementation of TB DOTS. Other types of support from MDH include space, furniture, personnel and use of equipment. Specifically Manila Doctors Hospital, as the mother organization allows free use of clinic space, overhead (light, water, air-conditioning system), computer, fax, and phone. It also allowed the training of the medical technologists and pays for their salaries.

The DOTS physicians are PhilHealth-accredited, while the facility is not yet accredited. The two DOTS providers are considered dedicated personnel for DOTS services after undergoing DOTS training sponsored by the PhilCAT team.

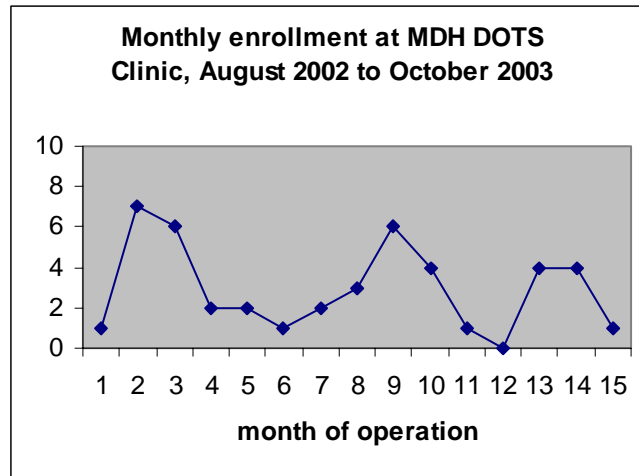
## H. ANALYSIS AND DISCUSSION

The MDH TB DOTS Clinic is operational for 15 months now. Cure rate is 100% and default rate is low. However, the global target of 85% treatment success rate has not been achieved yet. Below are the key findings on the performance of the program.

<b>KEY FINDINGS - MANILA DOCTORS HOSPITAL TB DOTS CLINIC</b>
1. 100% cure in one year
2. 52% treatment completion rate
3. 74% treatment success rate
4. 4% default rate
5. 22% transfer out rate
6. 100% sputum conversion rate at 2 <sup>nd</sup> to 3 <sup>rd</sup> month of treatment
7. Supportive administration
8. Dedicated leadership and staff
9. Target population not reached and maximized

The figure below depicts the monthly trend of enrollment in the clinic from onset of DOTS operations in August 2002. The first peak in August 2002 occurred right after Dr. Balgos, the project leader, delivered a lecture on DOTS to the medical staff of MDH. The second peak in March 2003 was observed after another DOTS lecture by the PhilCAT president, Dr. Charles Yu. A third peak is seen in August 2003 when the modified DOT was introduced. In this modified

scheme, the family treatment partner does DOT at home, but still with weekly reporting and monitoring.



The table below summarizes the capacity of the MDH TB DOTS facility in providing DOTS services, compared with the recommended WHO framework for DOTS.

**Table 6. Comparison of the Recommended WHO DOTS Framework and the Current MDH TB DOTS Program**

Components of the DOTS	Recommended WHO Framework	MDH TB DOTS Framework
Political commitment	DOTS incorporated into the national health system	<ul style="list-style-type: none"> <li>Memorandum of Agreement incorporating DOTS into the MDH Health Services</li> </ul>
Quality sputum AFB microscopy	Access to quality-assured sputum microscopy for case detection among persons presenting with symptoms in health services	<ul style="list-style-type: none"> <li>Clientele – patients living or working within the 2-km radius of MDH</li> <li>No provision for sputum collection within the facility</li> <li>Sputum collection usually done at home</li> <li>Sputum smear microscopy at the MDH laboratory</li> <li>Medical technologist trained on AFB microscopy</li> <li>MDH laboratory has no provision for a biosafety cabinet</li> </ul>

<b>Components of the DOTS</b>	<b>Recommended WHO Framework</b>	<b>MDH TB DOTS Framework</b>
Standardized treatment regimen, including DOT	Standardized short-course chemotherapy regimens of 6-8 months, for smear positive cases, with DOT during the intensive phase for all sputum positive cases, the continuation phase of rifampicin-containing regimens and the whole re-treatment regimens	<ul style="list-style-type: none"> <li>• Patient, treatment partner &amp; DOTS physician enter into a contract of agreement before patient's enrolment to DOTS program</li> <li>• Rifampicin-based short course chemotherapy</li> <li>• DOT supervised by clinic nurse daily and family member on Sundays and holidays at home throughout the intensive phase and continuation phase</li> </ul>
Regular supply of anti-TB medications	Uninterrupted supply of quality –assured drugs with reliable drug procurement and distribution systems	<ul style="list-style-type: none"> <li>• Drug supply from DOH free of charge</li> <li>• No explicit drug procurement system</li> </ul>
Standardized recording and reporting	Recording and reporting system enabling outcome assessment of each patient and assessment of overall program performance	<ul style="list-style-type: none"> <li>• Standard NTP forms</li> <li>• Quarterly reports to Manila City Health</li> <li>• No systematic monitoring, evaluation and supervision</li> </ul>

### **SWOT Analysis of Manila Doctors Hospital TB DOTS Clinic**

It is through SWOT analysis that strategies and business plans are crafted. We recognize the following potential strengths, weaknesses, opportunities and threats of the existing DOTS framework of PhilamCare from which recommendations and implementation plans will be based.

#### Strengths

##### *Case detection*

- The process of identifying a TB suspect is incorporated in the referral doctors' clinics
- Sputum smear is performed in the MDH laboratory
- Medical technologist trained on AFB microscopy
- Chest x-ray is a pre-existing procedure readily available within the facility
- A diagnostic committee is available on call
- Clinic set-up within the Industrial Clinic potentially provides opportunities for referral
- Modifications in the DOT options to attract upper middle and upper income groups started in August 2003
- Supportive administration

##### *Case holding*

- DOTS staff are knowledgeable and well trained.
- DOTS staff are accommodating and dedicated to their work.
- Contract of agreement prior to initiation of treatment

- Daily DOT with clinic DOTS provider as treatment partner and family member as the alternate treatment partner at home during weekends throughout the intensive and continuation phase of treatment
- Patients have the prerogative to choose their treatment partner.
- Defaulter tracing mechanism in place
- Free drugs
- Personalized health education and provision of IEC materials
- Standard NTP forms are used.

#### Weaknesses

- There is no designated sputum collection area. Opportunity to collect spot sputum on the first visit is lost.
- Out-of-pocket expense for sputum microscopy services unless patient is a health card holder
- MDH laboratory not yet accredited because of lack of biosafety cabinet
- No quality assurance mechanisms in the laboratory
- DOTS services not advertised/marketed
- DOTS Clinic not yet PhilHealth accredited
- No explicit drug procurement system
- No training and supervision for treatment partners
- No systematic monitoring, evaluation and supervision
- No dedicated budget from MDH for DOTS operations
- Multi-tasking of DOTS providers as treatment partners

#### Opportunities for improvement

- Upgrading of the laboratory with potential return of investment
- Opportunity to contribute to public health responsibility
- Opportunity to upgrade infection control measures
- Opportunity to establish quality assurance mechanisms
- Securing Philhealth accreditation not only to avail of the DOTS benefit package but also to assure clients that DOTS services meet NTP standards
- Strengthening linkage with DOH for drugs and other NTP supplies

#### Threats

- Health risk to personnel
- Physician autonomy
- Patient autonomy



Appendix C  
 Assessment of Patients' Knowledge on TB  
 MDH TB DOTS Clinic September 2003

Questions	Responses	Number of patients who gave the response N= 17 patients
<b>How does one get TB?</b>	<b>Smoking</b>	<b>8</b>
	<b>Drinking alcoholic beverage</b>	<b>5</b>
	<b>Inhaling air with TB bacteria</b>	<b>4</b>
	<b>Dirty surroundings, pollution</b>	<b>4</b>
	<b>Transmitted from TB patient</b>	<b>7</b>
	<b>Overfatigue</b>	<b>5</b>
	<b>Lack of sleep</b>	<b>3</b>
	<b>Relapse</b>	<b>1</b>
	<b>Weak immune system</b>	<b>2</b>
	<b>Weak lungs</b>	<b>1</b>
	<b>“Natuyuan ng pawis”</b>	<b>1</b>
	<b>Poverty</b>	<b>1</b>
	<b>Sharing utensils</b>	<b>1</b>
	<b>Noxious acids in work</b>	<b>1</b>
<b>Oversex, kissing</b>	<b>2</b>	
<b>Hand contact</b>	<b>1</b>	
<b>Is TB curable?</b>	<b>Yes</b>	<b>17</b>
<b>Is TB transmissible?</b>	<b>Yes</b>	<b>15</b>
	<b>No</b>	<b>1</b>
	<b>Do not know</b>	<b>1</b>
<b>What is the best treatment for TB?</b>	<b>Taking anti-TB drugs in the right doses at the right intervals</b>	<b>12</b>
	<b>Rest and nutrition</b>	<b>2</b>
	<b>Good hygiene</b>	<b>1</b>
	<b>Continuous treatment</b>	<b>2</b>
	<b>Follow doctor's advice</b>	<b>1</b>
	<b>Injectables</b>	<b>1</b>
	<b>Do not know</b>	<b>1</b>
<b>Why is it necessary for people with TB to complete their treatment?</b>	<b>Cure TB</b>	<b>13</b>
	<b>Prevent spread</b>	<b>4</b>
	<b>Prevent development of MDR-TB</b>	<b>4</b>
	<b>Prevent relapse</b>	<b>1</b>
	<b>Need to follow doctor's advice</b>	<b>1</b>
<b>How long is the treatment for TB?</b>	<b>6 months</b>	<b>14</b>
	<b>1 month</b>	<b>1</b>
	<b>1 year</b>	<b>1</b>
	<b>Don't know</b>	<b>1</b>
<b>Do anti-TB drugs have</b>	<b>Don't know</b>	<b>1</b>

<b>adverse effects?</b>	<b>Yes</b> <b>Mild skin reactions, itching, rash</b> <b>Gastrointestinal intolerance</b> <b>Nausea</b> <b>Flu-like symptoms</b> <b>Orange-colored urine</b> <b>Stool discoloration</b> <b>Weight gain</b> <b>Increased appetite</b> <b>Increased food absorption</b> <b>Headache</b> <b>Sleepiness</b>	<b>12</b> <b>3</b> <b>2</b> <b>1</b> <b>1</b> <b>3</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>2</b>
<b>Is it necessary for TB patient to undergo follow-up sputum examinations?</b>	<b>Yes</b>	<b>17</b>

# **PHILAM CARE TB DOTS CLINIC**

## **SITUATION ANALYSIS**

### **A HEALTH MAINTENANCE ORGANIZATION MODEL**

#### **A. Historical Background**

##### **Profile of the Health Facility Base**

PhilamCare Health Systems, Inc., the biggest pioneering health maintenance organization (HMO) in the country since 1985, maintains 16 clinics nationwide, five of which are Manila-based, servicing around 300,000 Filipinos. It has affiliated more than 2,950 physicians of varied fields of specialization, in 27 of the better-equipped hospitals in Metro Manila and 184 hospitals in key cities nationwide. It mainly caters to private patients who have availed of a health insurance policy with the PhilamCare Health System, Inc. as individual or group members. Unique to PhilamCare, its clinics are freestanding, owned and managed by the HMO itself. The clinics are equipped with basic laboratory and radiology equipment, and have access to specialized private medical and diagnostic centers. Diagnostic and treatment services for tuberculosis are one of the major reasons for consultation in their clinics.

##### **PPM-DOTS Clinic Conceptualization**

The inception of the PhilamCare TB DOTS Clinic stemmed from a PhilCAT research project funded by the Centers for Disease Control and Prevention (CDC) that aimed to pilot various PPM-TB DOTS models in the private sector. PhilamCare, with its freestanding clinics and broad client base, was chosen as the model for a health maintenance organization system.

Dr. Camilo Roa, the team leader of the HMO-TB DOTS model project, spearheaded talks and negotiations with PhilamCare management represented by Dr. Erlinda Tiuseco, to obtain the approval for the operation of a TB DOTS clinic within the PhilamCare health system. This culminated in a Memorandum of Agreement between the PhilamCare management and the PhilCAT Team signed on August 1, 2003. The PhilCAT study team conducted preliminary activities to prepare the facility for DOTS service delivery. These included a baseline survey on the knowledge, attitudes and practices of the HMO physicians on the diagnosis and management of TB and the development of a Manual of Procedures and administrative forms, which were integrated into the existing records system. PhilamCare physicians, nurses and medical technologists also attended the Basic DOTS training workshops.

##### **Implementation and Progress Through Time**

Of the six PhilamCare clinics included in the project, the one in Manila was the first to launch its TB DOTS services on August 1, 2003. The other five clinics followed successively in the following weeks. Within this HMO-TB DOTS Model is an operational research designed to determine whether family-based DOT is a feasible and effective case-holding strategy. Thus, three clinics were randomly assigned to provide clinic-based DOT (Manila, Quezon City and Calamba, Laguna clinics) and the other three were assigned to offer family-based DOT namely the Makati, Ortigas, and Las Pinas Clinics.

The PhilamCare facility in Manila is the focus of this situational analysis.

## **B. THE CURRENT TB DOTS CLINIC SYSTEMS OPERATIONS**

The DOTS Clinic has written policies of operating procedures contained in the TB DOTS Manual of Procedures. The Manual covers case finding and diagnosis algorithms, case definitions, treatment regimens, guidelines for managing side effects and procedures on assigning treatment partners. These operating procedures are in accordance with the NTP policies.

### ***The DOTS Process***

A flowchart depicting the process that a patient goes through in the management of TB upon entry into the clinic is available for service providers but not posted for patients to see. (*Appendix A*)

### **Case Detection**

<b>KEY PROCESSES – CASE DETECTION AND DIAGNOSIS</b>
9. Clientele – eligible health policyholders
10. Identification and assessment of TB suspects integrated in the general health services
11. Trained PhilamCare physician facilitates referral of TB suspects to the DOTS program
12. Trained DOTS nurse facilitates enrollment of eligible TB clients
13. Home sputum collection
14. Sputum smear microscopy contracted out to accredited laboratory (Quezon Institute)
15. Pre-existing chest x-ray service in the facility
16. Operational TB Diagnostic Committee for smear negative cases

Unlike most health facilities wherein there is no distinction on who can avail of health services, the PhilamCare DOTS Clinic caters only to policyholders and their eligible dependents diagnosed with TB within at least 4 months of health insurance coverage. They have the option to avail of health services from any of its clinics based on proximity to their residence or place of work. Those with pre-existing TB illness within one year of the effectivity of membership are excluded from coverage. New TB patients who cannot be covered by the health plan are referred to other health facilities outside the PhilamCare system.

### Sputum microscopy and collection

The nurse in the Basic Services Area initially assesses the TB suspect (patient with cough for 2 weeks or more) and a physician examines the patient. Upon physician referral of the patient to the TB DOTS Program, the DOTS nurse then requests for sputum AFB examinations.

Since the facility is an enclosed space with centralized air-conditioning system, sputum collection within the premises is not possible. The PhilCAT group suggested installation of a makeshift cubicle to serve as the sputum collection booth in the open space of the building near the parking area. However, PhilamCare management opposed the idea due to cost and lease agreements constraints; i.e. PhilamCare is only a lessee of Philamlife.

Because of this limitation, the DOTS nurse instructs the patient to collect sputum at home. The DOTS nurse explains the importance of sputum collection, provides the sputum receptacle and instructs TB suspect/patient on the proper collection technique.

PhilamCare has contracted out the laboratory at the Quezon Institute to do AFB smear microscopy services. Laboratory charges in QI are three times lower than that in the Manila Doctors Hospital, which is located just across the facility. When the patient submits the sputum specimen, the nurse packs it in an ice bag sends it to the QI Laboratory for examination through a messenger. This messenger, who regularly delivers mail, packages, and other materials, now has sputum specimens in his schedule. Cut-off time for specimen submission is 12 noon. The nurse obtains the results by phone within one day after submission to the laboratory.

Two medical technologists in the PhilamCare network (1 from Manila and 1 from Makati) underwent training on AFB microscopy at the Research Institute for Tropical Medicine for one week. However, the PhilamCare laboratories are not equipped at this time to deliver sputum microscopy services because of the absence of a biosafety cabinet in the laboratory.

On a long-term plan, the PhilCAT team would like to see the six PhilamCare clinics providing independent sputum microscopy services. One option to consider is to set up a centralized laboratory within the network (e.g. PhilamCare Makati) that will serve all six centers.

#### Chest x-ray services

Chest x-ray is a pre-existing procedure that is readily available in the clinic. Two full-time radiological technologists and one reliever perform X-ray procedures in the facility.

#### TB diagnostic committee

A TB diagnostic committee exists who deliberates whether sputum negative but x-ray positive patients should receive treatment or not. At present, the committee is composed of the three pulmonologists in the project and PhilamCare's radiologist. The committee functions on an on-call basis. The PhilamCare physician decides whether to refer a patient to the committee. The diagnostic committee has not met since the clinic started its DOTS operations.

#### Case Holding

#### **KEY PROCESSES – TREATMENT AND CASE HOLDING**

6. Contract of agreement signed by physician, patient and treatment partner
7. Standard short-course rifampicin-based chemotherapy prescribed by physician
8. DOT supervised during the intensive phase by DOTS nurse 3x/week in the clinic and by identified family member on alternate days at home
9. During the continuation phase, monthly follow-up at clinic for monitoring and procurement of medications; DOT entirely supervised by family member at home
10. Personalized patient health education sessions during clinic visits
11. 24-hour hotline number for adverse events and other concerns

#### Standard treatment regimen

Treatment regimen consists of rifampicin-based short course chemotherapy given for 6-8 months depending on disease category. The physician prescribes the appropriate regimen according to the patient type and classification. The physician instructs patient to identify a family supervisor prior to referral to the DOTS program. The family supervisor is the patient's choice personal choice and is usually the one who is willing to check on the patient's treatment regimen schedule until completion. The physician records criteria fulfilled in selecting the family supervisor.

#### Directly observed treatment

Before starting treatment, the patient, his/her treatment partner who is a family member and the DOTS referring physician enters a contract of agreement. This contract contains the diagnostic and treatment policies and procedures, which the patient has to adhere. Patients are required to come at least thrice a week on agreed dates and time during the intensive phase of treatment. The patient brings his own drinking water when taking medicines from the Clinic. The DOTS nurse watches the patient swallow his medication and records this in the treatment card. The DOTS nurse also reminds the patient of the next appointment. The family member serves as the alternate treatment partner during the days that the patient will not visit the clinic, and is required to accompany the patient once a week during the intensive phase.

During the maintenance phase, the patient will come to the clinic once a week for monitoring and procurement of medications. The family member, as the treatment partner, is required to accompany the patient at least once a month.

Schedule of sputum exam follow-up is in accordance with NTP guidelines depending on the bacteriology type and treatment category of the patient. Schedule of follow-up with physician is monthly.

#### Handling adverse events

When side effects of anti-TB drugs do occur, a patient has the option to call PhilamCare’s 24-hour service hotline or the nurse’s private mobile phone number. Health providers in the clinic manage minor side effects. For major adverse events, patients are advised to go to the emergency room of the nearest affiliated hospital.

The Guide for Managing Adverse Events (*Appendix B*) is a useful tool for handling side effects.

### Defaulter tracing mechanisms

A defaulter is a patient whose treatment is interrupted for two consecutive months or more. The DOTS nurse contacts all defaulters by phone at least twice to ascertain status and reason for failure to comply with clinic visits. It is the responsibility of the treatment partner to inform the clinic if the patient does not wish to comply further with the directly observed treatment so that remedial measures can be planned.

### Health education

Situated centrally in the waiting area of the facility is a bulletin board where TB messages are posted. A sole poster is visible in the DOTS corner.

Leaflets on TB DOTS are also available for patients. There are no group lectures but the DOTS nurse and physician hold individual discussions with TB patients and treatment partners during consultation visits. The key messages conveyed during consultations include transmission, curability, importance of treatment completion and follow-up visits, consequences of inadequate treatment, side effects of drugs, preventive measures such as good hygiene and proper nutrition.

### **Drug Supply**

<b>KEY PROCESSES – DRUG SUPPLY</b>
3. Standard treatment regimen free of charge
4. Regular supply of essential anti-TB drugs from the Department of Health
5. DOTS nurse facilitates requisition of drugs

Patients enrolled in the DOTS program receive free anti-TB drugs. The Department of Health (DOH) supplies these drugs. Type I (isoniazid, rifampicin and pyrazinamide), Type II (isoniazid and rifampicin) blister packs and ethambutol 400 mg – parceled in zip-lock plastic packs and apportioned for the whole treatment duration of a 50-kg patient are available in the clinic. There are adequate stocks to complete treatment of the three currently enrolled patients and to commence and complete treatment of five more new patients. If the physician prescribes drugs in addition to the standard treatment regimen, the patients will have to buy out-of-pocket wherever available. In situations where physicians prescribe antihistamines and antipyretics, these are also available and the patients get the initial doses free of charge. Drugs are stored in a clean and protected cabinet.

The DOTS nurse facilitates requisition of drugs and reports to the Clinic Operations Manager the status of availability of drugs. There is no written inventory and storage policy for the above drugs. PhilCAT procures the drugs from the DOH, the quantity of which constitute a buffer stock of complete treatment course for at most 10 patients.

### **Recording and Reporting**

<b>KEY PROCESSES – RECORDING AND REPORTING</b>
<ol style="list-style-type: none"> <li>1. Standard NTP forms are used and maintained by the DOTS nurse</li> <li>2. Customized PhilamCare forms were developed</li> </ol>

For recording and monitoring purposes, the attending DOTS nurse fills out all the necessary forms. The following NTP standard forms are available in the clinic: TB Symptomatics Master List, Laboratory Request Form for Sputum Examination, NTP Treatment Card, NTP Identification Card and NTP Referral/Transfer Form. Entries in the NTP Treatment Card are up-to-date, legible and complete while that in the Master list are readable but not updated.

Customized forms for PhilamCare purposes include the Registry Sheet for Patients Examined by an Affiliated Provider and the TB Case Management Kit composed of Pre-Enrollment Form, Contract of Agreement (in English and in Filipino) and Consultation Summary Form. (*Appendix C*)

The DOTS Clinic does not have the following: laboratory and TB register forms, quarterly report forms, counting sheets and summary report. Since the program is in its initial stages, no mechanism for reporting is in place.

### **Client-Provider Interaction – DOTS as observed**

Three currently enrolled TB patients and six TB suspects were observed when they consulted the TB DOTS Clinic. The attending service provider was the nurse. The duration of the client-provider interaction ranged from 3 to 31 minutes (mean=13.3, SD=8.5).



For the enrolled TB patients, the DOTS nurse provided the necessary drugs, observed their intake, marked the treatment card and reminded them of the next appointment.

For TB suspects, the DOTS nurse instructed them to collect sputum specimens at home, provided them with sputum cups, and were registered in the TB Symptomatics Masterlist. In two TB suspects who were on repeat visit, the nurse indicated in the treatment card the schedule of the next sputum examination and gave a written reminder of the said schedule. For the rest of the new clients, the nurse explained the purpose of sputum collection and demonstrated how to produce good sputum. Sputum cups were labeled with the client's complete name and the name of the referring unit. In addition, the nurse instructed these patients on the proper handling, storage and transport of the specimen.

In most of the consultation visits, the nurse imparted some information about TB to the client. The key messages varied for every transaction, which consisted of the infectiousness of TB, curability and transmission, adequate drug intake and treatment completion, side effects of anti-TB drugs, maintenance of good hygiene and proper nutrition, and the importance of family/treatment partner support. The patients raised a number of other concerns like cost of care, nutrition and work-related issues during some visits. Not all patients were provided with contact numbers in case of additional inquiries.

The reception for all patients was generally warm. The nurse was able to communicate in clear, simple and appropriate language, allowing clients to ask questions and responding to their queries. Overall, the DOTS nurse performed the necessary procedures for TB suspects and enrolled patients to facilitate diagnosis, treatment and case holding.

## **Performance Evaluation**

### **Internal evaluation**

**Performance evaluation is done routinely every 6 months based on an evaluation tool used uniformly for all staff, excluding relievers. The Clinic Operations Manager (COM) performs biennial performance appraisals.**

**The Performance Appraisal tool has two parts: one measuring the efficiency and competency relating to functions and responsibilities, and the other looking into values and behavioral characteristics. (*Appendix D*) There is no supervision tailored specifically for TB DOTS Program operation and staff, mainly because the program is still in its preliminary stages.**

### **External evaluation**

**As relayed by the DOTS nurse, the CDC, represented by Dr. Wells, accompanied by the PhilCAT team and Philhealth personnel, conducted an external evaluation last August 26, 2003. The purpose of the visit was to observe the actual operation of the TB DOTS program. During the evaluation, the team reviewed the treatment cards, interviewed health workers and patients, conducted physical inventory of logistics and other supplies, and observed patient management. There was no official documentation of the visit.**

## **C. STATISTICS**

### **DOTS Process and Outcome Indicators**

Twenty TB symptomatics (11 male, 9 female) were examined as of September 23, 2003. Fourteen were seen in August and six in September. Six submitted three sputum specimens but no one was smear-positive. Of the six, three patients were registered in the DOTS Clinic. Two patients were excluded because their policy contract expiry date is less than four months. One patient refused inclusion because of non-proximity of the clinic to his place of residence and he also refused referral to a local health center because he can afford to buy his medications.

The enrolled patients are all smear-negative pulmonary TB and undergoing treatment as Category III. Two are on the second month of treatment while the other has just started. The patients have family members for their treatment partner at home. When in the clinic, the nurse performs DOT on them.

Table 1 shows the service statistics of the DOTS Clinic from August 1 to September 23, 2003.

**Table 1. Service Statistics from August 1 to September 23, 2003**

INDICATORS	NO.
1. Total number of TB symptomatics examined	20
Male	11
Female	9
2. Number of TB symptomatics who submitted 3 sputum specimens	6
3. Number of sputum smear-positive cases	0
4. Total number of TB cases registered	3 enrolled
5. Age of TB cases (in years)	
Male	
25 – 34	1
35 – 44	1
Female	
15 – 24	1
6. Disease classification	
Pulmonary TB	3
Extra-pulmonary TB	-
7. Type of patient	
New: Smear-positive	-
Smear-negative	3
Relapse	-
Transfer in	-
Return after default	-
Failure	-
8. Treatment category	
Category I	-
Category II	-
Category III	3
9. Treatment outcome	Not available yet since 2 patients are just on the 2 <sup>nd</sup> month of treatment and 1 just started
10. Number of new sputum-positive cases which are smear-negative at the end of 2- 3 months treatment	Not applicable at this time
11. Treatment partner	
Nurse (Observes patient 3x a week at clinic)	2 (for the 3 patients)
Family member (Observes patient at home)	3

## **D. TB DOTS CLINIC PHYSICAL INFRASTRUCTURE SET-UP**

### **Accessibility**

The PhilamCare Clinic is located at the Ground Floor of the Philamlife Building situated at the corner of UN Avenue and Ma. Orosa Street. It is open from Monday to Friday at 8:00AM to 5:00PM and Saturdays at 7:30AM to 3:30PM. The facility is accessible by public transportation and the Light Rail Transit along Taft Avenue. The Philamlife

Building has a designated parking area for clients. Parking in surrounding areas is also available at a premium.

PhilamCare offers a 24-hour telephone service support for inquiries and crisis intervention. Liaison officers have been assigned at designated affiliated hospitals in Metro Manila.

Policyholders also have the option to avail of health services from any of the six clinics based on proximity to their residence or place of work.

### **Infrastructure and Examination Facilities**

The PhilamCare Clinic has a conspicuous signage. A security guard checks on clients at the clinic entrance.



The entire PhilamCare facility has an area of about 600 square meters. It is a modern, multi-specialty outpatient clinic that provides diagnostic and treatment services. There is a basic services cubicle where a nurse obtains the patients' history and vital signs. Eleven examination rooms (six at the ground floor, five at the mezzanine) afford patients with reasonable visual and auditory privacy. The facility is equipped with a basic diagnostic laboratory and radiology equipment. It has an area for minor surgical procedures. It houses an information area, a pharmacy, a cashier counter, and a records section. The facility also has a staff lounge area and a conference room.

The health facility has a common large reception/waiting area that offers comfortable seats and TV viewing. It is generally clean with centralized air-conditioning system and adequate lighting. Clients have easy access to the toilet and lavatory, which are equipped with hand washing facilities and running water. Soap and hand drying equipment are not available.

There are covered waste bins in each section of the facility, except in the waiting areas. Toxic wastes are transferred after clinic hours to a designated covered container in one corner of the facility. Integrated Waste Management, Inc. staff collects the toxic wastes

thrice a week. Non-toxic wastes, on the other hand, are transferred every afternoon to a common garbage site near the building's parking lot, from where it is then collected by the waste management team.

The TB DOTS area is situated inconspicuously in a corner of the facility that occupies an area of about 10 square meters. No signage is visible. It is used particularly for performing DOT and for consultations with the DOTS nurse. There are three seats for clients. There is no specific area for sputum collection.

### **Equipment and Commodities Inventory and Management**

The entire facility has routine examination equipment such as stethoscope, BP apparatus, examination table, thermometer, and weighing scale. The laboratory has two microscopes (but only one is used), several sputum collection containers, disposable needles and syringes, a sharps container, and boxes of glass slides and cover slips. Acid-fast bacilli (AFB) smear microscopy is not available in the facility because of lack of a biosafety cabinet. For radiological services, the facility has a portable x-ray machine for radiographic procedures for the chest and extremities.

The TB DOTS corner has a reception/consultation table, a medicine cabinet, and a low bookshelf for the recording forms, sputum containers, and some reading materials.

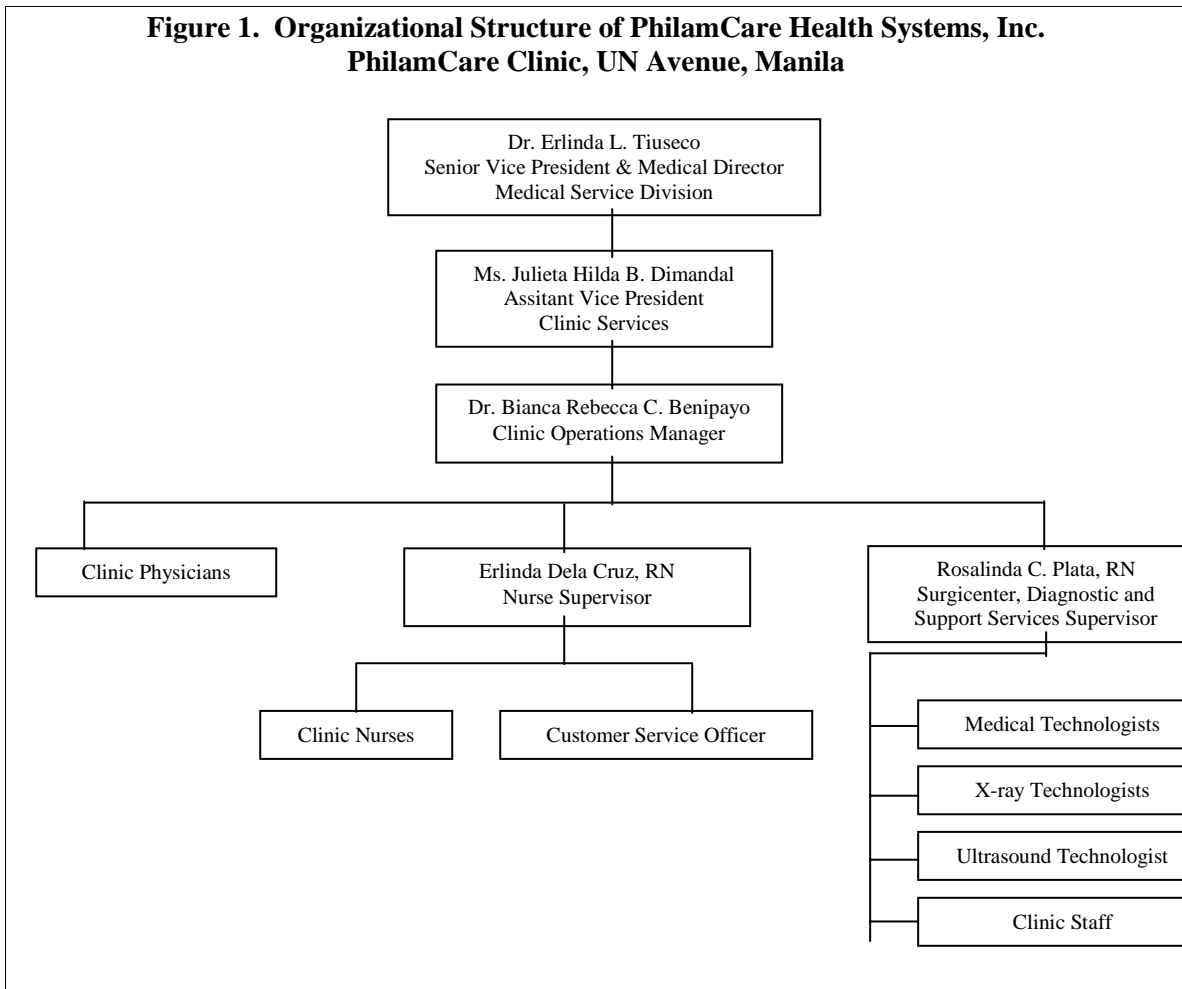


A written inventory of equipment and supplies is not available.

## E. HUMAN RESOURCES SET-UP

### Organizational Structure

The overall administrator of the PhilamCare Clinic System is Dr. Tiuseco. Ms. Dimandal is in-charge of the services of all PhilamCare clinic facilities. A clinic operations manager (COM) in the person of Dr. Benipayo heads the entire clinic facility. Directly under the COM are 24 physicians and 2 supervisors. The nurse supervisor takes charge of 10 nurses, while the diagnostic and support services supervisor monitors 3 medical technologists, 2 x-ray technologists, 1 ultrasound technician and 4 clinic aides. The 24 physicians are composed of 2 primary care doctors and 22 specialists in fields of internal medicine (5), cardiology (1), endocrinology (1), dermatology (3), surgery (1), obstetrics and gynecology (4), pediatrics (2), otorhinolaryngology (1), ophthalmology (1) and family medicine (3). All clinic staff works full-time while the specialists are part-time employees.



### The DOTS Staff

The TB DOTS staff is composed of Dr. Benipayo, the COM and TB DOTS Facility Administrator, Dr. Jalandoni, the DOTS Physician, and Nurse Gomez as the DOTS Nurse. Nurse Gamboa is the alternate nurse when Ms. Gomez is unavailable.

#### **Clinic operations manager (COM)/TB DOTS facility administrator**

The functions of the COM and TB DOTS facility administrator include overseeing the operations of the entire clinic as well as conducting routine performance evaluation of all staff. The responsibilities are mainly administrative in nature, and do not include any clinical work.

#### ***Experience and training in TB DOTS service delivery***

Relatively a newcomer in the clinic, Dr. Benipayo is on her second month as an employee of Philam Care. Having missed the DOTS workshops by virtue of her recent employment, she is still at the stage of familiarization with the concepts and procedures of the DOTS program in the clinic. She relies mostly on her fund of information from her medical background and years of practice as a General Practitioner since she had no opportunity yet to attend the DOTS workshops.

#### **DOTS physicians**

The central role of the PhilamCare DOTS physician is on case finding and case holding. Under case finding, the physician screens and assesses patients suspected of having TB. He further evaluates these patients and gives out requests for sputum AFB smear. As regards case holding, he prescribes the appropriate treatment regimen, manages adverse drug reactions (ADRs) during clinic hours and provides health education during consults.

#### ***Experience and training in TB DOTS service delivery***

Being the sole physician who has completed the DOTS workshops, the PhilamCare DOTS physician is familiar with the NTP policies, the system of recording and reporting, logistics management, as well as monitoring and supervision done within the DOTS program. He is also acquainted with the Manual of Procedures for the National Tuberculosis Control Program as well as the Comprehensive and Unified Policy on Tuberculosis. For Dr. Jalandoni, the workshops equipped him with information regarding standards of treatment as well as updates much needed for his clinical work as DOTS Physician. Dr. Jalandoni has been the DOTS Physician for the past month but previously worked in PhilamCare as a COM. He is currently on his fifth year as an employee of the company.

### *TB DOTS service delivery knowledge and practices*

The two PhilamCare physicians in the DOTS program correctly enumerated the signs and symptoms that will help identify an individual as a TB suspect. Both of them will appropriately request for sputum AFB smear for TB suspects either on the first visit or on the first early morning after the consult. They also believed that chest x-ray is part of the diagnostic work-up. Dr. Benipayo added the need for PPD in children. They are aware that the sputum specimens are sent outside the facility for examination but Dr. Benipayo classified this laboratory as private whereas Dr. Jalandoni knew it to be a public facility.

Comparing responses to questions on diagnosis, initiation and monitoring of treatment of a physician who has undergone the workshop with one who has not revealed the following information. For smear-negative patients, Dr. Benipayo will consider improper sputum collection, and will look at the available chest x-rays. She states that a patient with three negative smears may still need treatment if the patient is symptomatic. Dr. Jalandoni will also consider ordering an x-ray for comparison with previous plates, if available. Dr. Jalandoni also stated that cases that do not fall under Categories I, II or III should be referred to the TB Diagnostic Committee. Both correctly identified a TB suspect with two sputum positive smear results as smear-positive, and a patient who is sputum positive at the fifth month of treatment as a case of treatment failure. Dr. Benipayo added the latter could be a case of resistance to treatment. Both are aware of the treatment regimens for the different patient categories. However, when asked for the schedule of the first sputum smear follow-up, the two physicians gave inappropriate answers.

In counseling patients, Dr. Jalandoni would stress on the need for completion of treatment and the maintenance of good hygiene, proper nutrition, getting enough sleep, and in general, building up one's immune system. In addition to these messages, Dr. Benipayo would like to emphasize that TB is infectious, and thus, the importance of covering the mouth when coughing/ sneezing, as well as the avoidance of crowded places. Aside from completion of treatment, she would emphasize the importance of regular drug intake as well as the consequences of irregular drug intake.

To ensure compliance to treatment the two physicians will monitor response to treatment through follow up sputum smear examination and alleviation of symptoms. Dr. Benipayo would convince patients by explaining the necessity of compliance and advising them to take advantage of the free medications offered to them.

In the event that there is non-completion of treatment and a defaulter comes back, both would correctly ask for a sputum AFB smear. Dr. Jalandoni stressed on determining the number of months missed while Dr. Benipayo would refer the patient to a physician for re-evaluation and possible re-treatment.



The two physicians are knowledgeable on the proper management of mild and severe ADRs to TB drugs.

Patient records, including laboratory results and treatment outcome, are within the access of the physicians through the DOTS nurses and the Records Section inside the clinic. To date they have not done any formal reporting.

### DOTS nurses

Case finding duties of the DOTS nurses include screening patients by doing initial history and physical examination, after which, they refer the patient to the physician for further evaluation.

Case holding responsibilities include assigning and supervising treatment partners for the DOTS patients and providing DOT in the clinic. They impart health education through one-on-one counseling and distribution of IEC materials to both patient and treatment partner during consultation visits.

For patients needing diagnostic work-up, they refer and follow-up sputum smear examinations at the Quezon Institute Laboratory. They maintain and update a laboratory logbook, which contains information on the status of sputum samples and their results. For patients on treatment, they monitor the response to drugs and are capable of managing minor adverse drug reactions.

They are also responsible for maintaining and updating the records prescribed by the NTP. It is part of their job to prepare and submit reports to the Facility Administrator or any party concerned. In terms of logistics, they facilitate requisition of anti-TB drugs and report the status of their availability to the COM to ensure a regular drug supply.

### *Experience and training in TB DOTS service delivery*

The nurses' obtained their knowledge and practices on TB prevention and control, signs and symptoms, diagnosis and treatment from their nursing background and years of practice. Knowledge on DOTS and NTP policies were acquired from the Basic DOTS training workshop. However, only Nurse Gamboa is familiar with the Manual of Procedures for the National Tuberculosis Control Program, while both are unfamiliar with the Comprehensive and Unified Policy on Tuberculosis Control.

Ms. Gomez has been employed for 14 years at PhilamCare prior to her assignment as DOTS nurse. Ms. Gamboa, worked for 1 year and 4 months before being tasked to become the alternate DOTS nurse.

### *TB DOTS service delivery knowledge and practices*

The nurses correctly identified the signs and symptoms that would make one suspect a patient to have TB. They are well versed on the appropriate procedures to take once a patient is identified a TB symptomatic.

Upon receipt of sputum smear results, the nurses are cognizant of what to do for patients with three negative sputum smears. They also know how to classify properly patients based on sputum smear results. With regard to treatment, both are aware of the treatment regimens for the different categories of patients. Following treatment, the two nurses are familiar with the sputum follow-up schedule. Other means of monitoring response to treatment is by weighing the patient regularly and taking note if there is an improvement in signs and symptoms.

Both nurses correctly stated the health education messages that they should inculcate in a patient diagnosed with TB. The DOTS nurses were also able to identify the important measures necessary to ensure that the patient complies with treatment. They even go as far as contacting the patient through their mobile phones, at their own expense, to remind their patients. For defaulters who come back for treatment, both nurses will appropriately refer the patient to a physician for re-evaluation and re-treatment.

Both nurses are knowledgeable on how to manage patients with adverse reactions to anti-TB drugs.

The task of filling up and keeping records falls into the domain of these nurses although as of yet, they have not been asked to submit reports. However, one of them stated that in the future, they would be submitting quarterly reports to the PhilCAT team.

TB patients or suspects who cannot be enrolled in the Philam DOTS Program due to lapsed policies are referred to other health facilities. The nurses keep a list of DOTS health centers (provided by PhilCAT) from which a client can choose for treatment continuity.

### **Medical technologists**

**Two medical technologists in the PhilamCare network (1 from Manila and 1 from Makati) underwent training on AFB microscopy at the Research Institute for Tropical Medicine for one week. However, sputum AFB microscopy service is not yet available at Philam because the laboratory is not equipped yet with a biosafety hood.**

### **Radiology technicians**

Two full-time radiology technicians and one reliever provide X-ray procedures in the facility. The duration of their employment ranges from as short as 2 months to a maximum of 13 years. The full-time technicians have some knowledge on TB prevention and control, signs and symptoms, diagnosis, and treatment from their college courses. However, the reliever is unfamiliar with these topics, as these were not taught in her 3-year course as Associate in Radiological Technology. All three lack information on DOTS and NTP policies.

## **Baseline KAP of Physicians in the PhilamCare System**

*The PhilCAT team conducted a study in 2001 (Roa 2001) to determine the knowledge, attitudes and practices of PhilamCare physicians in the diagnosis and management of TB. The study revealed that majority of the physicians are not informed of the WHO/NTP guidelines. On diagnosis, the physicians preferred chest x-ray for initial diagnostic work-up of TB suspects, either alone (50%) or in combination with AFB microscopy (27%), PPD (9%) or both (14%). There were varying regimens prescribed for different patient classifications. Physicians appropriately prescribed Category I regimen in 11% of patients, Category II in 36% and Category III in 59% patients, giving an average adherence rate of 36%.*

*Physicians follow up patients after start of treatment mainly to check for adverse reactions. However, the patient monitoring schedule varied. Physicians ask patients to follow up after 1 week (9%) 2 weeks (23%), a month (50%), 2 months (14%), and 6 months (5%) of treatment. More importantly, there was no mention of sputum AFB microscopy as a test for monitoring patients' treatment response. Chest x-ray was the predominant examination used to monitor patient's response to treatment. None utilized sputum AFB microscopy.*

Almost all physicians monitor patient compliance to drug intake but the manner by which this was done varied, such as subjective verification with the patient or his/her relative, presence of clinical improvement, checking of spoiled blister packs and of refilled PhilamCare prescriptions for anti-TB medicines.

## **F. THE DOTS PARTNERS PERCEPTIONS**

### ***Referring Physician's Perspective***

**As the designated PhilamCare DOTS Physician, Dr. Jalandoni is obliged to follow DOTS. If a patient fulfills the criteria for enrolment into the DOTS program, he refers to the clinic. Otherwise, he refers to other centers. He added that a patient might refuse enrollment in the DOTS program because of not desiring to use the free generic drugs. DOTS, according to Dr. Jalandoni, is beneficial especially to the poor or low-income earners as it provides free drugs. A disadvantage though, is that employed patients would have to miss work for their clinic visits. His recollection of the five DOTS components escaped him during the interview.**

**Dr. Jalandoni believes that increased awareness through mass media of TB DOTS and the mechanisms on how to avail of this service is important to motivate physicians to refer their TB patients to a DOTS center. Private-public linkage should be strengthened such as disseminating a list of public health referral centers to private clinics. On benefits and incentives for referral, Dr. Jalandoni considers the current fee of PhP400 per referred patient sufficient. This fee, he said, is taken from the PhP 4,000 TB DOTS Benefit Package of Philhealth-accredited DOTS centers. He maintained that while the TB Benefit package covers diagnostic and consultation fees, health providers should at least get some hazard pay for handling TB patients since they are at risk of being infected. As a matter of social responsibility, he says he would not charge indigent patients for consultation.**

### **Treatment Partners' Perspectives**

#### Family members

The treatment partners of the three currently enrolled TB patients are family members who have not undergone training but are well aware of their role of supervising the patient's drug intake and nutrition. Although they do not report to the DOTS nurse or doctor, the home partners keep a record of the patient's drug intake. They find satisfaction and ease in their role since the patient himself/herself wants to get well.

#### DOTS Clinic nurses

In the clinic, Nurse Gomez is in-charge of providing DOT. In her absence, she delegates her duties to Nurse Gamboa. The nurse as the treatment partner does not only check whether patients comply with their medication schedules but also whether patients have improved on their health status from the last visit. During the visit, the nurse has the opportunity to educate the patient about the benefits and side effects of taking anti-TB drugs, the duration of treatment and the importance of completing treatment.

Nurses Gomez and Gamboa regularly report to Dr. Jalandoni, the DOTS Physician about patient visits. According to Nurse Gomez, she attends to all TB patients and suspects in the Clinic. She estimates that she can manage a maximum of 35 patients a day if patients come on time at their designated appointments. On confidentiality, Ms. Gomez does not seem to be conscious about the stigma attached to TB. She gave an account of one patient who does not mind having the curable disease. On the subject of incentives, Ms. Gomez asserts that even if the company does not provide inducements, patients send her some token of appreciation for her service. She further suggested that good communication skills and sensitivity to patient's feelings could improve her role as a treatment partner.

### **Clienteles' Perspectives**

Three TB patients and five TB suspects were interviewed. Their ages ranged from 21 to 37 years old. One is a high school graduate; one with undergraduate college education; and the rest are college graduates. They are all employees of private companies, with

monthly household income brackets ranging from a low PhP1,501-4,999 to PhP10,000 and over.

All but two of the patients had chest x-ray before they sought initial consult at the PhilamCare Clinic. Four of them experienced symptoms such as cough of 2 weeks or more, fever, colds, sputum expectoration, and sweat with chills, back pains, poor appetite, and poor sleep.

#### *On accessibility and convenience*

The patients learned about the DOTS services of the facility only when the attending PhilamCare physician referred them. The days and hours of operation of the clinic are convenient to them. No one of them has ever been refused service from the facility during official clinic hours. Two of the patients, residents of Caloocan City and Parañaque, find the location of the facility inconvenient for them, with travel time of 2 hours and 1.5 hours, respectively. The rest of the patients reside 30 to 60 minutes, or one to two rides, away from the facility. Four patients said that there are other places near their homes where they can go for TB DOTS, but they chose to come to PhilamCare because of preference for its health service providers, easier access, use of their benefits as PhilamCare employees, and because they have never tried the services of other places. Some of the patients were aware of the other services offered by the PhilamCare Clinic such as consultation, laboratory examinations, ECG, and all medical services except major operations. Three patients were not aware of the other services available in the facility.

#### *On quality of care*

**All of the patients were satisfied with their visit with regards to reasonable waiting time the duration of their consultation, the health service provider's willingness and competence to discuss their health-related concerns and other issues as well, their involvement in making decisions about their health care and treatment, and the privacy during consultation. They feel assured that their personal information will remain confidential. However, they claimed that the health provider did not explain the health examinations or procedures performed on them and the results were not discussed except for one patient. Three patients also stated that their health providers did not explain their illness or condition to them.**

**The three enrolled patients are required to visit the clinic thrice a week for the DOTS nurse to observe their drug intake. They were assigned treatment partners of their choice to make sure that they take their medications regularly on the days when the DOTS nurse cannot observe them. The treatment partners keep a record of the patient's drug intake.**

**Aside from the sole poster in the DOTS area, and health education messages imparted by the DOTS nurse during consultation, another source of information for the patients is the TB leaflet given on their initial visit. Patients stated that the content of the leaflet was helpful in providing details about TB, particularly on prevention and control, as well as on treatment. The facility does not conduct other means of information dissemination and education on TB.**

**Assessment of what patients remember from the TB information provided by the health service provider and from the educational materials they received revealed that these have not been so effective in improving knowledge and correcting some misconceptions about the disease. A number of patients still think that one gets TB by smoking, drinking alcoholic beverage, sharing of utensils and through pollution. One patient considered rest and nutrition as the best treatment for TB. Others were unaware of the duration of TB treatment, of the side effects of the TB drugs and of the necessity to undergo follow-up sputum examination. (Appendix E)**

*On cost of care*

**PhilamCare's benefit package covers the services provided by the clinic to all its patients. Thus, patient's out-of-pocket expenses during consultation consist only of their transportation (PhP8.00 to PhP53.00), plus cost of additional drugs (not more than PhP100.00). This is acceptable for all patients except for the one whose transportation fare is PhP53.00.**

## **G. INSTITUTIONAL COMMITMENT**

The Memorandum of Agreement between PhilamCare and PhilCAT formalizing integration of TB DOTS services in Philam Care's health services underwent corporate bureaucracy and scrutiny by the legal department of Philam before the management finally approved and signed it on August 1, 2003.

The PhilamCare management made it clear from the start that DOTS may be implemented in the facility as long as there would be no additional personnel and cash outlay, and no infrastructure repairs or reengineering. Interview with Ms. Dimandal (Assistant Vice-President for Clinic Services), revealed that PhilamCare does not provide a regular annual budget for the implementation of TB DOTS. The budget for the clinic facilities is derived from HMO fees, which support supplies and materials and salaries of clinic personnel. Other types of support from PhilamCare include space, furniture, personnel and use of equipment.

TB drug supply is obtained from the DOH, which is sufficient for the complete treatment of eight patients. The PhilCAT team ensures that there is uninterrupted drug supply for the patients by acting as liaison for drug procurement.

The DOTS physicians are Philhealth-accredited, while the facility is not yet accredited. PhilamCare, according to Ms. Dimandal, has no plans to link up with the public sector.

The referring physician and two nurses are considered dedicated personnel for DOTS services after undergoing DOTS training sponsored by the PhilCAT team.

## H. ANALYSIS AND CONCLUSIONS

<b>KEY FINDINGS – PHILAMCARE TB DOTS CLINIC</b>
<ol style="list-style-type: none"> <li>1. Low compliance rate to sputum microscopy – 30%</li> <li>2. Corporate bureaucracy</li> <li>3. Potentially wide catchment population</li> <li>4. Accessible, strategically located facility</li> <li>5. Effectiveness of modified family-based DOT still to be determined</li> </ol>

We summarize the capacity of PhilamCare’s DOTS Clinic, which is barely two months in operation, by assessing the relevant components of WHO’s recommended strategy of DOTS.

The Memorandum of Agreement forged between PhilamCare and PhilCAT that integrates DOTS into PhilamCare’s health services system signifies political commitment, i.e. institutional commitment to control tuberculosis.

Sputum microscopy is a reliable diagnostic approach, which is required on all TB suspects for diagnosis. Since sputum collection is not allowed in the facility for lack of an open space, a patient is instructed to collect sputum at home. Then the sputum specimen is brought back to the Clinic for AFB microscopy in an accredited laboratory. The DOTS Clinic is not equipped to do sputum microscopy at this time.

The clinic also follows the WHO recommendation of a rifampicin-based short course chemotherapy. The DOT component is modified and adapted to the HMO clientele lifestyle. A patient is required to visit the clinic three times a week during the intensive phase, and weekly during the maintenance phase, where a DOTS nurse supervises the drug intake. A family supervisor acts as the treatment partner at home on the days when the nurse is unable to supervise the patient.

As stipulated in the Memorandum of Agreement, PhilCAT is responsible for sourcing drugs from DOH. A buffer stock of ten complete treatment courses will ensure uninterrupted drug supply. Upon enrolment, a patient is allocated a pack containing the full course of treatment. The drug procurement system is not explicit.

Accurate records keeping on all individual patients, maintenance of registers and regular reporting are minimum staff requirements. While the nurse tries to be efficient in recording, the task of reporting is not very well understood. Reporting and supervision is not yet in place as manifested by the lack of summary forms.

The table below summarizes the capacity of the PhilamCare DOTS facility in providing DOTS services, compared with the recommended WHO framework for DOTS.

**Table 2. Comparison of the Recommended WHO DOTS Framework and the Current PhilamCare DOTS Program**

<b>Components of the DOTS</b>	<b>Recommended WHO Framework</b>	<b>PhilamCare DOTS Framework</b>

Political commitment	DOTS incorporated into the national health system	<ul style="list-style-type: none"> <li>• Memorandum of Agreement incorporating DOTS into the PhilamCare Health Services</li> </ul>
Quality sputum AFB microscopy	Access to quality-assured sputum microscopy for case detection among persons presenting with symptoms in health services	<ul style="list-style-type: none"> <li>• Clientele – eligible PhilamCare policyholders</li> <li>• No provision for sputum collection within the facility</li> <li>• Sputum collection done at home</li> <li>• Sputum smear microscopy contracted out to an accredited laboratory (Quezon Institute)</li> <li>• One medical technologist trained on AFB microscopy</li> <li>• PhilamCare laboratory has no provision for a biosafety cabinet</li> </ul>
Standardized treatment regimen, including DOT	Standardized short-course chemotherapy regimens of 6-8 months, for smear positive cases, with DOT during the intensive phase for all sputum positive cases, the continuation phase of rifampicin-containing regimens and the whole re-treatment regimens	<ul style="list-style-type: none"> <li>• Patient, treatment partner &amp; DOTS physician enter into a contract of agreement before patient's enrolment to DOTS program</li> <li>• Rifampicin-based short course chemotherapy</li> <li>• DOT supervised by clinic nurse 3x/week and family member on alternate days at home during the intensive phase</li> <li>• Maintenance phase supervised by family member at home; weekly follow-up and procurement of medications</li> <li>• Treatment partner keeps a diary of patient's drug intake</li> </ul>
Regular supply of anti-TB medications	Uninterrupted supply of quality –assured drugs with reliable drug procurement and distribution systems	<ul style="list-style-type: none"> <li>• Drug supply from DOH free of charge</li> <li>• PhilCAT as liaison for drug procurement</li> <li>• No explicit drug procurement system</li> <li>• A buffer stock of at most ten complete treatment courses</li> <li>• Each patient is allocated a pack at the outset containing the full course of treatment</li> </ul>
Standardized recording and reporting	Recording and reporting system enabling outcome assessment of each patient and assessment of overall program performance	<ul style="list-style-type: none"> <li>• Standard NTP forms and customized PhilamCare forms which underwent review and approval of corporate management</li> <li>• No explicit reporting system to the NTP</li> <li>• No summary forms and register</li> <li>• No systematic monitoring, evaluation and supervision</li> </ul>

### SWOT Analysis of PhilamCare TB DOTS Clinic



In assessing the strengths, weaknesses, opportunities and threats of the existing DOTS framework of PhilamCare, one should take into consideration that the clinic has just recently started its operations. It is currently on its third month of operations and outcome indicators are not yet available to be able to make any definitive assessments. We recognize the potential strengths, weaknesses, opportunities and threats of the DOTS Clinic, as follows:

### Strengths

#### *Case detection*

- Wide clientele base potentially provides large catchments for case detection.
- Freestanding clinics with a large network of physicians potentially provides a large catchment for case detection and opportunities for referral
- Case detection is integrated into the general health services of the clinic, i.e. the process of identifying a TB suspect is incorporated in the general patient flow at the Basic Services Area where initial history and physical examination is done.
- Sputum smear is performed in an accredited laboratory at an affordable price.
- Medical technologist at PhilamCare laboratory is trained on AFB microscopy
- Chest x-ray is a pre-existing procedure readily available within the facility.
- Diagnostic committee is available on call

#### *Case holding*

- Accessible clinic
- Well-maintained health facility with multi-specialty services
- DOTS nurses are knowledgeable and well trained.
- DOTS nurses are accommodating and dedicated to their work.
- TB client enters a contract of agreement prior to initiation of treatment
- Modified DOT with family member as the alternate treatment partner during the intensive phase
- Patients have the prerogative to choose their treatment partner/family supervisor.
- Patients can choose their follow-up time and days
- Free drugs
- Personalized health education and provision of IEC materials
- Standard and customized forms

### Weaknesses

- There is no designated sputum collection area. Opportunity to collect spot sputum on the first visit is lost. This may account for the low percentage of TB symptomatics who submitted sputum specimens (30%)
- Sputum microscopy service is not available within the facility. This is a potential source of delay in the release of results.
- DOTS services not advertised/marketed
- Eligibility to the DOTS program limited to active policyholders
- No established referral system/network for non-eligible clients
- Crude defaulter tracing mechanism
- No training and supervision of family member treatment partners
- No explicit drug procurement system
- No policy on drug management and inventory
- Out-of-pocket payment for additional drugs

- No systematic monitoring, evaluation and supervision
- Fast turnover rate of physicians
- Corporate bureaucracy
- No dedicated annual budget for DOTS operations

#### Opportunities for improvement

- Upgrading of the laboratory with potential return of investment
- Training of more physicians on DOTS
- Opportunity to institute infection control measures in the facility
- Opportunity to contribute to public health responsibility
- Formalizing the referral mechanism to other DOTS centers for ineligible patients
- Securing Philhealth accreditation not only to avail of the DOTS benefit package but also to assure clients that DOTS services meet NTP standards
- Strengthening linkage with DOH for drugs and other NTP supplies
- Opportunity to institute quality assurance mechanisms

#### Threats

- Occupational exposure to TB
- Physician autonomy – need to adhere to NTP guidelines
- Patient choice – need to adhere to policies to avail of benefits

## **I. RECOMMENDATIONS**

Based on the situational and SWOT analyses, the following recommendations are made:

- Improve access to DOTS services by
  - reviewing referral mechanisms on ineligible patients
- Improve quality of DOTS service delivery by
  - establishing a system for ensuring quality of sputum collection
  - upgrading laboratory for AFB microscopy
  - developing and maintaining the skills of DOTS providers
  - providing continuous training and supervision for DOTS providers
  - instituting a system for procurement, storage, distribution monitoring of anti-TB drugs
  - setting up a standard system of recording and reporting in line with the NTP
- Improve health care financing by
  - strengthening partnerships with PhilCAT and DOH
  - working towards Philhealth accreditation to avail of the DOTS benefit package

Appendix E

Assessment of Patients' Knowledge on TB  
 PhilamCare TB DOTS Clinic, U.N. Avenue, September 2003

Questions	Responses	Number of patients who gave the response N= 8 patients
<b>How does one get TB?</b>	<b>Smoking</b> <b>Drinking alcoholic beverage</b> <b>Inhaling air with TB bacteria</b> <b>Dirty surroundings, pollution</b> <b>Transmitted from TB patient</b> <b>Overfatigue</b> <b>Droplet Infection</b> <b>Relapse</b> <b>Weak immune system</b> <b>Poor nutrition</b> <b>Sharing utensils</b> <b>Transmitted through saliva</b>	<b>1</b> <b>1</b> <b>1</b> <b>2</b> <b>4</b> <b>3</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b> <b>1</b>
<b>Is TB curable?</b>	<b>Yes</b>	<b>7</b>
<b>Is TB transmissible?</b>	<b>Yes</b>	<b>7</b>
<b>What is the best treatment for TB?</b>	<b>Taking anti-TB drugs in the right doses at the right intervals</b> <b>Rest and nutrition</b> <b>Avoid vices</b>	<b>6</b> <b>1</b> <b>1</b>
<b>Why is it necessary for people with TB to complete their treatment?</b>	<b>Cure TB</b> <b>Prevent development and spread of multiple drug-resistant TB</b> <b>Prevent relapse</b> <b>Kill TB microbes</b>	<b>2</b> <b>2</b> <b>2</b> <b>1</b>
<b>How long is the treatment for TB?</b>	<b>6 months</b> <b>Don't know</b>	<b>6</b> <b>1</b>
<b>Do anti-TB drugs have adverse effects?</b>	<b>Don't know</b> <b>Yes</b> <b>Mild skin reactions, itching, rash</b> <b>Gastrointestinal intolerance – hypersensitivity, gastritis</b> <b>Gastrointestinal intolerance – vomiting</b> <b>Jaundice</b> <b>Hepatic effects</b> <b>Blurring of vision</b> <b>Dizziness</b>	<b>2</b> <b>5</b> <b>4</b> <b>1</b> <b>1</b> <b>2</b> <b>1</b> <b>1</b> <b>1</b>
<b>Is it necessary for TB patient to undergo follow-</b>	<b>Yes</b> <b>Don't know</b>	<b>6</b> <b>1</b>

<b>up sputum examinations?</b>		
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# DE LA SALLE UNIVERSITY PPM DOTS CENTER

## SITUATION ANALYSIS

### A LOCAL COALITION MODEL

#### A. Historical Background

##### Description of the Health Facility

Cavite is the most densely populated province in the Southern Tagalog Region (Region IV). The total land area is 128,755 hectares. The 2000 census data shows that the population is 2,063,161, giving us an estimate of approximately 1,602 persons per square kilometer. Cavite has three cities, 20 municipalities and 828 barangays and is divided into three districts. Dasmariñas is the most populated area of Cavite with about 18.4% of the population residing there.

MUNICIPALITY	POPULATION
Dasmariñas	379,520
Imus	195,482
Silang	156,137
General Trias	107,691
<b>TOTAL</b>	<b>838,830</b>

The PPM TB DOTS clinic is located in Dasmariñas. In addition to Dasmariñas, the catchment area includes three neighboring municipalities: Imus in the North, Silang in the Southeast, and General Trias in the West. In all, the catchment area covers 40.7% of Cavite's total population. However, clients enrolled into the DOTS program come from all over Cavite, so the coverage area is greater than 40%.

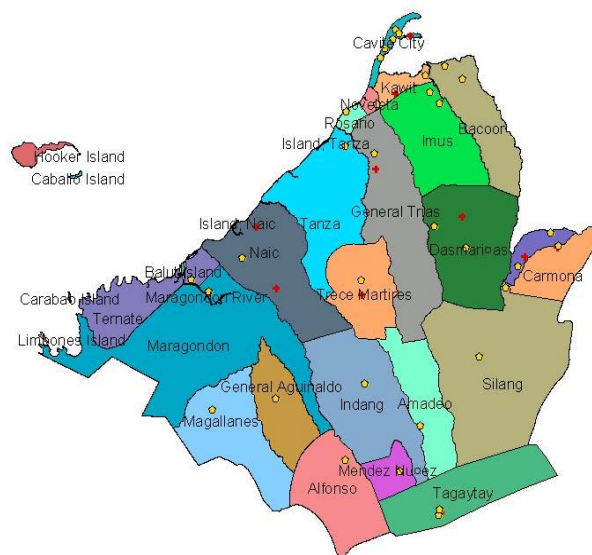


Figure 1. Map of Cavite

The DOTS Center of the De La Salle University Health Sciences Campus (DLSUHSC) is the first ever private TB clinic in Cavite that adopted the DOTS strategy. Currently, it is a private-public mix (PPM) model based in a university. It is one of the major sections of the TB Research Unit (TRU) of the Research Services of DLSU, located at the ground floor of the Angelo King Research Medical building. Diagnostic examinations are done at the TB Laboratory located at the 2<sup>nd</sup> floor of the same building. It provides free consultation, free anti-TB drugs and low-cost quality diagnostic examinations.

**The Angelo King Medical Research Building is one of several buildings situated in the Health Sciences Campus of the DLSU. The hospital (DLSU Medical Center) and doctors' clinics of DLSU are also situated in the health sciences campus. The DLSU Medical Center is a tertiary private hospital with 210 beds and 47 clinics.**

#### **TB DOTS PPM Program Development**

**The Private TB DOTS Clinic was conceptualized in 1998 with concurrence by the Executive Committee of DLSU. The idea of setting up a private DOTS Center resulted from the following observations: private practitioners see a lot of TB patients but have no time to directly observe them take their anti-TB drugs, monitor and record their progress. Additionally, there is no private counterpart for private physicians to refer their patients in contrast to health centers in the public sector. Although the concept was already agreed upon, it was not readily put into action because of lack of human and financial resources.**

The DOTS clinic was finally launched in March 18, 2002 at the 8<sup>th</sup> floor of the De La Salle University Medical Center (DLSUMC) but was later relocated to the TB Laboratory Unit at the 2<sup>nd</sup> floor of the Angelo King Research Medical Center in May 2002 because of concerns of possible transmission of infection to other patients in the hospital. At program inception they are already a PPM, being part of the NTP. It had its first enrollee into the DOTS program only then. Because of the increasing number of enrollees during subsequent months, the DOTS clinic was relocated in August 2002, to its present site, at the ground floor of the Angelo King Research Medical Center.

The move towards advocacy campaigns started when Drs. Charles Yu and Victoria Dalay presented the findings of two surveys conducted by the DLSUHSC Research Services regarding TB practices of private physicians in Cavite. The KAP surveys showed that chest radiography is favored in the diagnosis of PTB and that treatment regimens prescribed vary greatly and are often inappropriate for cure. An advisory board was then created to provide assistance to the TB Research Unit to formulate its research agenda.

Initially only two rooms were allotted for the DOTS Clinic. Patients enter thru the main entrance of the medical research building and wait at the hallway if there are other clients being seen by the health providers. Because of the increasing number of clients being served at the center and the plans for PhilHealth accreditation, the need for expansion was again raised. The Director of the DOTS center had to convince the executive committee for several months for additional space. Issues against the expansion were primarily due to the 'return of investment'. Renovation of the DOTS center, which was

supported by the institution, started last summer 2003 and finished in August 2003. Clients now enter the clinic thru a side door of the clinic, after the infection control committee raised risks of transmission to other people.

**The vision of the clinic is that TB will no longer be a public health problem in Cavite and its mission is to ensure that TB diagnostic, treatment and information services are available and accessible to all communities in Cavite through the collaboration of both the public and private health sectors. The long-term goal of the clinic is to reduce in half the TB morbidity and mortality in Cavite in the next ten years.**

### **Implementation of the TB DOTS PPM and Progress Through Time**

The diagnosis, treatment, and management of the TB patients are based on the NTP guidelines.

The first TB patient enrolled into the DOTS program was in May 2002. It now has more than 240 patients enrolled into their program and has graduated more than a hundred since. More than three-fourths of the treatment partners are family members, < 15% are mixed (a combination of family members and DOTS nurse or RHU staff - for those that require streptomycin injection). The rest are volunteers (neighbors / friends). The clinic averages more than 20 new enrolled patients every month during the third quarter of 2003. The number of TB patients being referred to the clinic is observed to be increasing.

During 2002, recording and reporting forms used were basically the NTP forms. Because the DOTS staff observed that some of the needed information was not being captured in the NTP forms, they developed their own set of recording and reporting forms – the TB Case Management Kit. This comprises several forms based on the NTP forms with some additional information. The TB Case Management Kit was completed in January 2003 and was pilot tested and used in February. The TB Case Management Kit was again revised in August 2003 since some of the forms that were developed were not that essential.

**Initially the TB suspects collect their sputum at the rest room near the TB Laboratory Unit and then submit their sputum directly to the TB Laboratory. Only last August 2003 was it implemented that clients collect their sputum at the induction area and submit it at the reception area of the DOTS Center. This was implemented because of an incident that happened wherein a patient who was trying to collect his sputum in the collection cup coughed out lots of phlegm that was blood streaked in the rest room near the TB Laboratory Unit.**

The DOTS Center applied for PhilCAT certification last January 2003. A certification visit by PhilCAT, DOH, and PhilHealth was done in February 6, 2003. Certification of the TB Laboratory and PPM DOTS Center to be one of the accredited private DOTS Centers in the country was done in the same month by PhilCAT, DOH and PHIC. PhilHealth has awarded the accreditation of the PPM DOTS Center effective July 24, 2003; and the certification was given by PhilCAT last August 18, 2003.

## **B. The Current TB-DOTS Operations**

### *The DOTS Process*

## **Case Detection**

Almost all clients seen at the PPM DOTS Center are referred by other physicians. There are only a number of clients who go directly to the clinic.

**Clients consulting at the PPM DOTS Center are screened by the receptionist for the following symptoms using a screening laboratory form (see Appendix A): chronic cough for more than two weeks, fever, chest or back pain, loss of weight, general body malaise, and any other symptom that the patient complains of.**

For clients presenting with cough, the health provider encourages the client to have a sputum AFB exam. For those who are willing, the health provider explains to the patient the purpose of the examination before instructing the patient how to collect sputum. For those clients with productive cough, sputum collection is done on the spot (1<sup>st</sup> specimen), the 2<sup>nd</sup> specimen would be an early morning specimen, and the 3<sup>rd</sup> specimen will be collected on the day the client submits the 2<sup>nd</sup> specimen. For those with non-productive cough, an early morning specimen is collected. (refer to Figure 2)



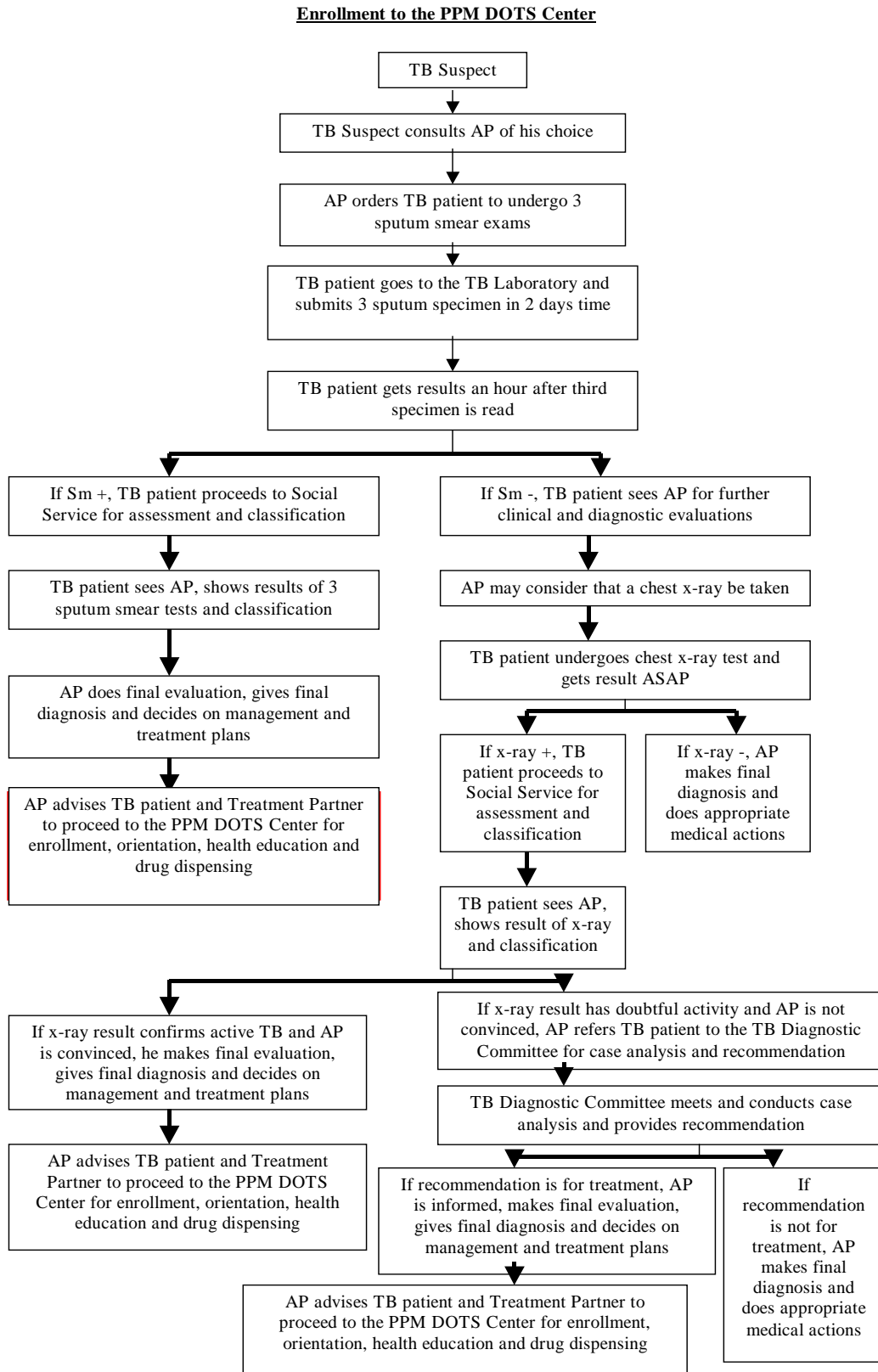


Figure 2. Flowchart of Enrollment to the PPM DOTS Center

The collected specimens are then sent to the TB Laboratory for processing and reading.

If at least two sputum specimens are positive for AFB, the diagnosis is pulmonary smear positive. If only one out of three specimens turned out to be positive, this is interpreted as a doubtful case and the TB suspect is advised to submit another three sputum specimens for examination. If any of those specimens are positive upon repeat examination, the diagnosis is pulmonary smear positive. However if all three specimens are negative and the symptoms persist, the TB suspect is referred back to the attending physician for further assessment.

If all three sputum specimens are negative (first examination or on repeat examination for doubtful cases) and the symptoms of the TB suspect persists, then the patient is referred back to the attending physician for Chest X-ray if attending physician strongly suspects of TB.

TB suspects with negative sputum smears and chest x-ray findings suggestive of TB are referred to the Diagnostic Committee.

Diagnosed TB patients are asked if any other household member have any of the symptoms that the patient complained of. If there are, the patient is advised to have them undergo sputum examination.

All results are entered in the laboratory NTP logbook and other forms used by the DOTS Center.

## **Case Holding**

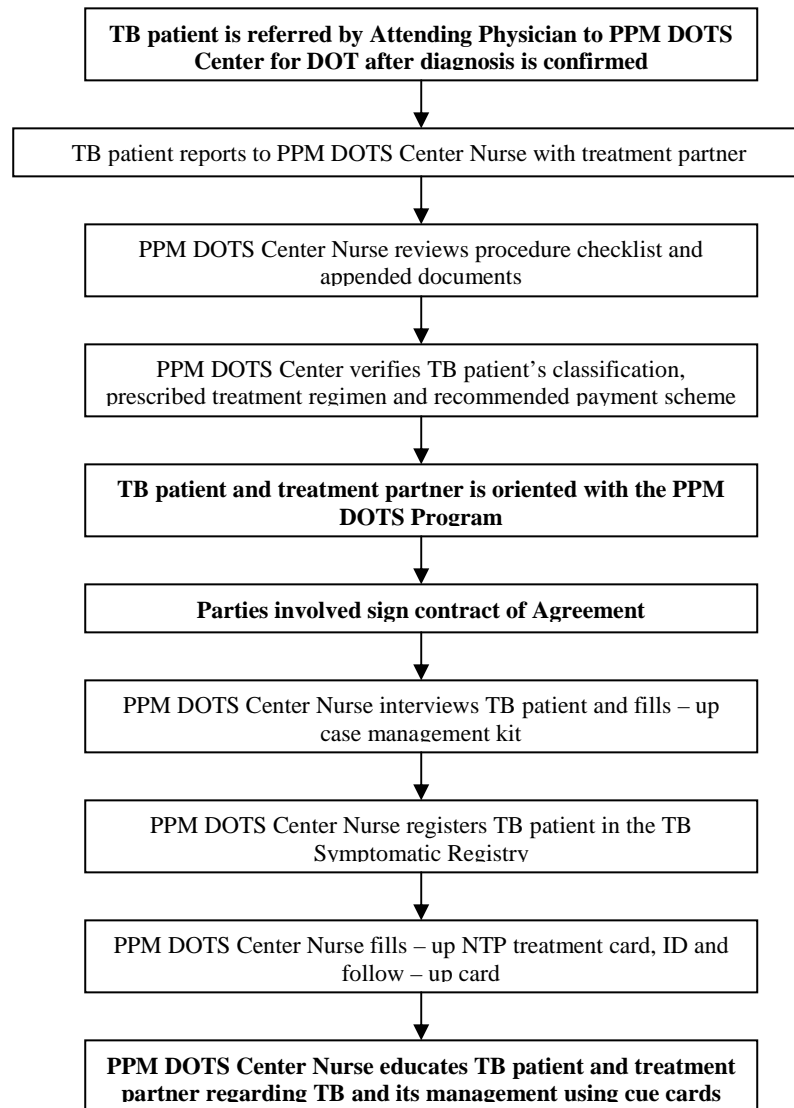
TB suspects are informed of their condition once physical examination and laboratory results are done. For those clients diagnosed to have TB, the patient is encouraged to undergo treatment. Referred patients are referred back to their attending physician for pre-treatment evaluation and initiation of treatment. However if the attending physician is known and the patient is positive for TB, then the attending physician is just informed and treatment is initiated upon agreement with the patient. The appropriate treatment regimen is then prescribed depending on the patient's category. (refer to Figure 3)

The TB patient is then registered in the TB registry and advised to enroll into the DOTS program. The health provider briefs the patient of the procedures and requirements for enrollment into the DOTS program. If the patient agrees, then the contract of agreement is signed. The health provider fills up a pre-enrollment form for the patient and advises him/her, together with a treatment partner and family member, to go back for enrollment. The preferred treatment partner should be a part of the household.

During enrollment, the patient together with the treatment partner is given a group lecture on TB using cue cards. Key messages conveyed during the session are: TB is caused by a bacteria, is infectious and can be transmitted; TB affects everyone, that there is no need to be ashamed of TB; how to prevent transmission of TB; how a person with low resistance is easily infected, signs and symptoms of TB; the need to undergo a sputum smear examination; category of TB patients, duration of treatment; the importance and role of the family member and treatment partner (remind and encourage patient, do DOT, record on a daily basis, come back to the clinic for a regular drug supply, remind patient of monthly consultations with attending physician and follow-up sputum examinations); anti-TB drugs, how and when to take the anti-TB drugs; the importance of completion of treatment to prevent MDR-TB, adverse effects of the drugs, and introduction of the sputum schedule and the NTP identification card.

The DOTS nurse then fills out the other forms in the TB Case Management Kit and opens an NTP treatment card, ID and follow-up card. The patient is then sent to the DLSUMC Social Service. The DLSUMC Social Service is responsible for the assessment of TB patients' paying capacity and classifies them to their appropriate level of indigency.

Below is a flowchart of a guide to registration and initiation of treatment.



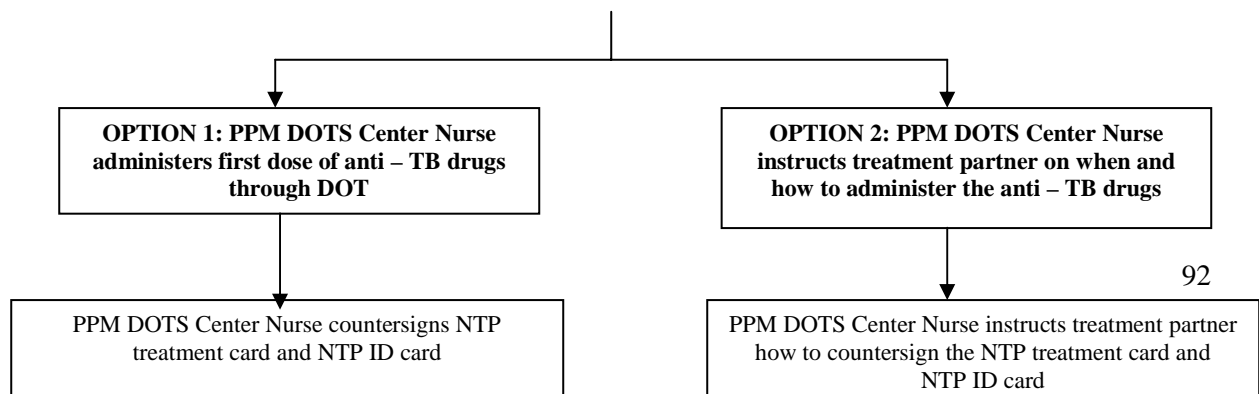
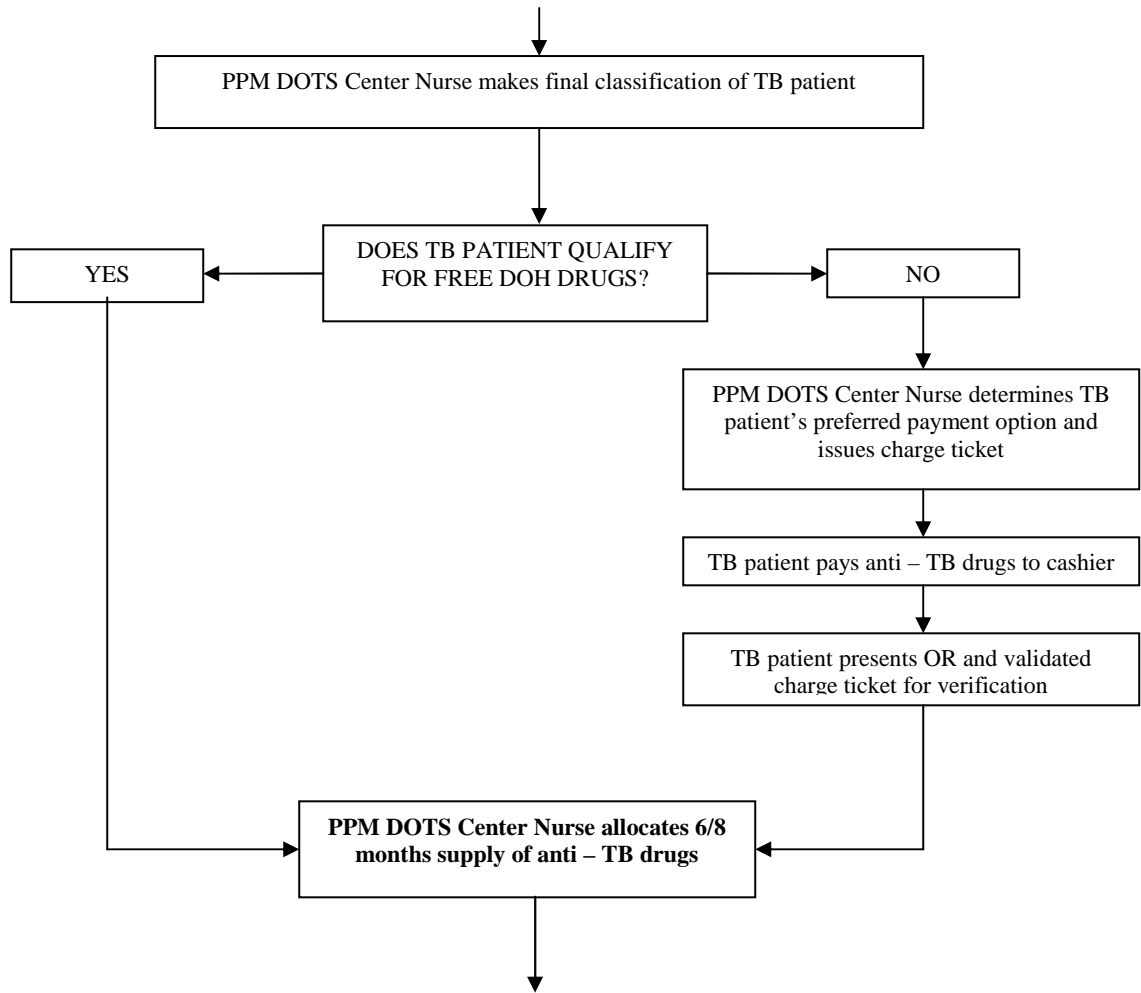


Figure 3. Flowchart for Guide to Registration and Initiation of Treatment

The patient is given the option if he wants to be given DOT at the clinic or at home. For Category II patients however, the patient is not given the option but is told to come back during clinic days during the intensive phase of treatment.

The DOTS nurse reminds TB patient and/or treatment partner of schedule of follow-up and repeat examinations.

The DOTS Nurse follows-up the patients and/or treatment partner if they fail to report on their scheduled day of visit by phone or house visits.

For follow-up sputum examinations, the containers are properly labeled with the patients name and the specimen number.

### **Recording and Reporting**

There is no TB symptomatic masterlist. It is assumed that TB suspects recorded in the NTP Laboratory Registry are “symptomatic”; this includes TB suspects who are “asymptomatic”. Starting June 2003, asymptomatic TB suspects are recorded in a separate logbook.

The DOTS Nurse Coordinator is officially designated to fill out the Laboratory request form for sputum examination, TB register, referral / transfer form, and prepare the quarterly report on new cases and relapses and the quarterly report on drug inventory and requirements.

The chief medical technologist is officially designated to fill out the Laboratory register, and prepare the quarterly report on laboratory activities.

The DOTS nurse is officially designated to fill out the treatment card and the identification card.

The DOTS Center does not have the counting sheet for laboratory activities and the counting sheet for treatment outcome forms.

The DOTS Nurse Coordinator and the chief medical technologist submit clinical and laboratory summary reports, respectively, to the Provincial Health Office (who then forwards it to DOH) and the CDC (who then forwards it to PhilCAT).

The following table lists the recording forms and reports used at the DOTS Center

Table 1. Recording forms and Reports of the DOTS Center

	Up-to-date		Legible		Complete	
	Yes	No	Yes	No	Yes	No
1. Laboratory register	X		X		X	
2. Treatment card	X		X		X	
3. TB register	X		X		X*	
4. Quarterly report on laboratory activities	X		X		X	
5. Quarterly report on new cases and relapses	X		X		X	
6. Quarterly report on drug inventory and requirements	X		X		X	

\*The TB register has one or two missing data because patient has not returned with the needed information.

Quarterly reports on laboratory activities, new cases and relapses, and drug inventory and requirements are updated (last report submitted was for the 2<sup>nd</sup> quarter, covering April to June 2003).

### ***Logistics Management***

The PPM DOTS Center has an adequate supply of anti-TB drugs and other supplies to provide quality services.

The following table shows the anti-TB drugs that were available and the number of packs/vials in stock at the PPM DOTS Center during the two-week observation period.

Table 2. Anti-TB Drugs available at the PPM DOTS Center

ANTI-TB DRUGS	QUANTITY
---------------	----------

Type I (HRZ)	585 packs
Type II (HR)	1085 packs
Ethambutol (400 mg)	2838 tablets
Streptomycin (1 gram)	249 vials
2-drug FDC tablets (Rifzin)	88 packs
Econopack	4 packs
4D – Novartis	15 packs

The required number of Type I blister pack is 8 for regimen I, 12 for regimen II, and 8 for regimen III. The required number of Type II blister pack is 16 for regimen I, 20 for regimen II, and 16 for regimen III. The required number of ethambutol tablets is 112 tablets for regimen I and 448 tablets for regimen II. The number of streptomycin vials required to treat regimen II patients is 56 vials.

As can be seen from the table above, the anti-TB drug stock of the DOTS Center can provide anti-TB drugs for 1 to 4 patients in category II, 9 to 25 patients in Category I, and 42 to 53 patients in category III.

There is an inventory policy to ensure enough supply of drugs to commence and complete treatment per new patients enrolled. Since anti-TB drugs are allocated at the start of treatment for each patient for the whole duration of treatment, there are no potential problems to complete treatment for currently enrolled patients. Since the start of operation of the DOTS clinic, there was never a time when a patient was not enrolled because of non-availability of drugs.

The DOTS Nurse Coordinator ensures the continuous supply of anti-TB drugs. The DOTS Center maintains a 30% buffer stock. Drug stock levels are checked every two to three months. It takes several days for the DOTS Center to get the drugs after request has been made to the DOH since most of the time, there is no one from the DOTS Center who has the time to pick-up the drugs.

There is a written inventory for the above drugs.

The drugs are stored neatly in clean cabinets and are protected from rain, sun, and floodwater. The drugs are stored by expiry date and are dispensed according to expiry date, “first expiry first out”.

### ***Monitoring, Supervision and Evaluation***

World Vision, Pangasinan Health Office and Department of Health conduct the external evaluation/supervision of this facility. It was last conducted last March 4 to 7, 2003, and June 25-27, 2003.

Usually 6 months after a DOTS center has started, a Program Implementation Review (PIR) is conducted, then every 6 months thereafter.

Out of the 23 municipalities in Cavite, World Vision (through the “Kusog Bata” program) classified the DOTS center of DLSU as among the 11 municipalities under the “Phase I area”. (Phase II area involves the remaining 13 municipalities).

PIR for Phase I area was conducted last March 4 to 7, 2003. DLSU DOTS center presented the outcomes of their clinic (eg, case finding activities, success rate, positivity rate, etc). PIR for the Phase II area was conducted last June 25-27, 2003. DLSU DOTS center was invited to present during this meeting. One of the feedbacks was to separate the asymptomatics from the symptomatic masterlist.

No physical inventory of logistics (drugs, equipments, etc.) was ever conducted.

The TRU (TB Research Unit) Laboratory receives quarterly evaluation from the PHO.

The last external evaluation of the TRU laboratory was done last June 2003. During the laboratory evaluation, the following were assessed:

1. validation of smear (+) and smear (-) slides
2. assessed the cleanliness of surroundings
3. assessed records and logbooks
4. assessed the equipments and reagents

## **C. Statistics**

The total number of enrollees since the start of operation (May 2002) to September 2003 is 244. During the first two months of operation of the DOTS clinic, there were only 3 patients enrolled. Since July 2002, the number of enrollees is steadily increasing, both pulmonary and extrapulmonary TB cases. The average number of monthly enrollees for the last two quarters of 2002 is 12; while that for the first two quarters of year 2003 is 16. The 3<sup>rd</sup> quarter of 2003 shows a monthly average of 26. Figure 4 shows the number of enrollees on a monthly basis.



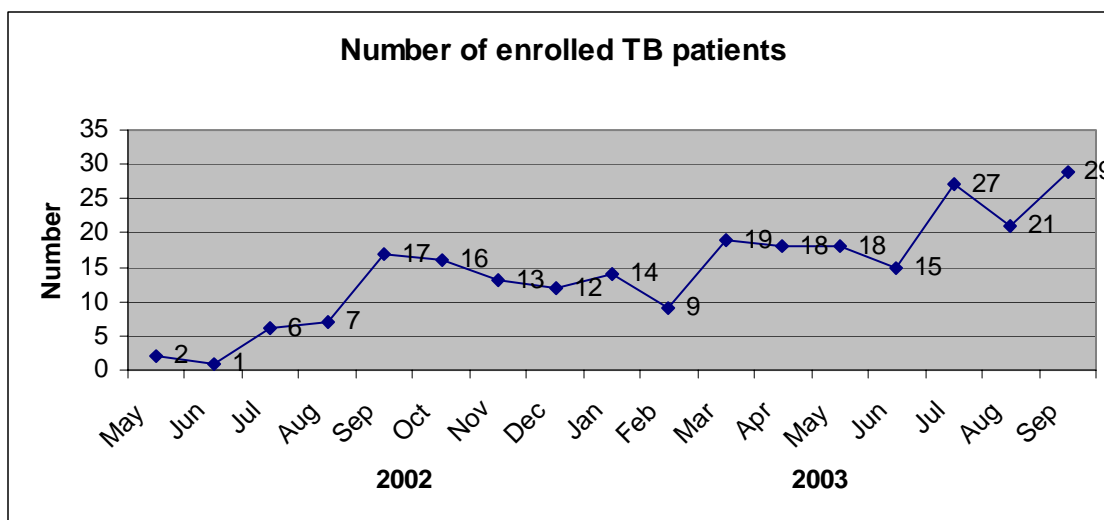


Figure 4. Number of enrolled TB patients by month.

The following tables (Tables 3 to 7) will refer only to the total number of enrollees for the period May 2002 to June 2003. Total enrolled TB patient for this period is 167 (74 for May to December 2002, 93 for January to June 2003).

Table 3 shows the distribution of TB patients by age and gender. There are more males observed to be enrolled in the DOTS Center. Majority of the population afflicted with TB are in the productive age group.

Table 3. Distribution of TB patients by age and gender.

Age Group	Male (n=100)		Female (n=67)		Total (N=167)	
	n	%	n	%	n	%
0-14	0	-	1	1.5	1	0.6
15-24	24	24.0	19	28.4	43	25.7
25-34	26	26.0	20	29.9	46	27.5
35-44	16	16.0	10	14.9	26	15.6
45-54	17	17.0	8	11.9	25	15.0
55-64	9	9.0	6	9.0	15	9.0
65 and above	8	8.0	3	4.5	11	6.6

Majority of the cases enrolled are of the pulmonary type (refer to Table 4). The number of extrapulmonary cases being referred to the DOTS Center is noted to be increasing.

Table 4. Disease classification of TB

Disease Classification	n	%
Pulmonary TB	157	93.9
Extra-pulmonary TB	10	6.1

Total	167	100
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More than a quarter of the patients enrolled are smear (-) PTB patients (refer to Table 5).

Table 5. Distribution of PTB patients.

Type of PTB Patient	N	%
New: Smear (+)	79	50.6
Smear (-)	44	28.2
Relapse	13	9.1
Transfer in	4	2.6
Return after default	12	7.1
Failure	4	2.6
Total	156	100

Almost two-thirds of patients are in category I (refer to Table 6) and a fifth are in category III (smear-negative but positive on CXR).

Table 6. Treatment Category of enrolled TB patients

Treatment Category	N	%
Category I	108	64.7
Category II	25	15.0
Category III	34	20.4
Total	167	100

Table 7 shows the number of TB patients according to treatment outcome.

Table 7. Treatment Outcome (PTB and extrapulmonary cases)

Treatment Outcome	n	%
Cure	36	34.6
Treatment completed	35	33.7
Treatment failure	7	6.7
Defaulter	11	10.6
Transfer out	9	8.7
Died	6	5.8
Total	104	100

The following table gives the distribution of the patient's treatment outcome. One hundred fifty six PTB patients and eleven extrapulmonary TB patients were enrolled for the period May 2002 to June 2003. Of these, 63 have no treatment outcome as of September 2003; 62 PTB cases [Smear (+) 31, Smear (-) 22, Relapse 2, RAD 6, Failure Cases 1] and 1 Extrapulmonary TB.

Table 8A. Distribution of PTB patients according to treatment outcome.

Types of TB patient	Cured	Treatment Completed	Died	Treatment Failure	Defaulter	Transfer Out	Total
New Smear (+)	30 (62.5%)	3 (6.2%)	4 (8.3%)	2 (4.2%)	5 (10.4%)	4 (8.3%)	48
New Smear (-)	-	18 (81.8%)	-	1 (4.5%)	2 (9.1%)	1 (4.5%)	22
Relapses	2 (18.2%)	1 (9.1%)	2 (18.2%)	2 (18.2%)	1 (9.1%)	3 (27.3%)	11
Transferred in	1 (25.0%)	2 (50.0%)	-	1 (25.0%)	-	-	4
RAD	1 (16.7%)	4 (66.7%)	-	-	1 (16.7%)	-	6
Failure Cases	2 (66.6%)	1 (33.3%)	-	-	-	-	3
TOTAL	36 (38.3%)	29 (30.9%)	6 (6.4%)	6 (6.4%)	9 (9.6%)	8 (8.5%)	94

The success rate for new smear (+) PTB cases is 68.8%, success rate for new smear (-) PTB cases is 81.8%, and the success rate for relapse PTB cases is 27.3%. The success rate for extrapulmonary cases is 60.0%. The overall success rate is 65.0% (PTB and extrapulmonary cases).

Table 8B. Treatment Outcome of Extrapulmonary TB Patients

Types of TB patient	Cured	Treatment Completed	Died	Treatment Failure	Defaulter	Transfer Out	Total
Extrapulmonary TB	-	6 (60%)	-	1 (10%)	2 (20%)	1 (10%)	10 (100%)

The mortality rate is 5.8% (6/104), treatment failure rate is 6.7% (7/104), defaulter rate is 10.6% (11/104), and transfer out rate is 8.7% (9/104).

According to the DOTS staff, only one of the deaths is attributable to TB (massive hemoptysis). The rest are due to other causes which are generally cardiopulmonary in nature.

Some of the reasons why the patient fails treatment are because of other existing conditions such as diabetes. These patients are referred back to the attending physician for further management.

There are only two TB cases where MDR-TB is suspected. These patients were referred to the Makati Medical Center.

For those who do not come back for treatment for more than 1 week, the DOTS nurse tries to follow them up through phone calls. If they don't have a phone or don't come back to the DOTS Center despite the phone reminder, the DOTS nurse goes to the patient's home and follow him/her up. Sometimes, the TB patient does not give the correct home address and therefore the patient cannot be traced. One of the strategies that the DOTS Center employed was to require the patient for enrollment to submit a barangay clearance. The barangay clearance would certify the patient's residence and therefore potential defaulters can be traced. One of the main reasons why a patient defaults is because of inconvenience and economic implications. Some patients find the location of the DOTS center as inaccessible; their home being far from the DOTS Center.

There were 9 patients (8.7%) who were transferred out because of inconvenience. Some of the reasons were that they had to travel a great distance to the DOTS Center and that they relocated. This was time-consuming and costly to the patient.

## **D. Current Physical Infrastructure Set-up:**

### ***Basic Information***

Name of Facility:	DLSUHSC PPM DOTS Center TB Laboratory Referral Center
Address:	Congressional Avenue, Dasmariñas, Cavite
Telephone:	(046) 416-0226 (local 238)
Office Hours:	Monday to Friday 8 AM – 5 PM Saturday 8 AM to 12 Noon

### ***Location***

The DLSUHSC PPM DOTS Center is located at the ground floor of the building of the Angelo King Medical Research Center of DLSU. The TB Laboratory Referral Center, however, is located at the 2<sup>nd</sup> floor of the same building.

The DLSUHSC is close to a shopping mall complex, Waltermart. It takes about 5 to 10 minutes of walking to get to the mall, and 5 minutes to get to the city proper of Dasmariñas by car.

### ***Accessibility***

The facility is accessible by public and private transportation. Clients with vehicles can park at the parking area located at the back of the building. The parking area can accommodate 40 vehicles at any one time.

## *Visibility*

The signage of the PPM DOTS clinic was put up only last September 18, 2003. The sign measures 3 feet x 6 feet and is placed on top of the waiting shed of the waiting area for patients. The signboard reads:

De La Salle University Health Sciences Campus  
Research Services  
Tuberculosis Research Unit  
Congressional Avenue, 4114 Dasmariñas  
Cavite, Philippines

DLSUHSC PPM DOTS Center  
and TB Laboratory Referral Center

Certified by Philippine Coalition Against



It is not easily noticeable from afar since it is placed at

## *Physical Infrastructure*

The DOTS center has a total floor area of 86 square meters. The center has a waiting area, a sputum induction area/room, a reception room, a medical examination room, a conference room, an office for the director, a separate office for the TB DOTS staff and a comfort room.



The waiting area is located outside the reception area. It is an open area with a roof covering. It has 2 benches and can accommodate 10 to 12 persons comfortably at any one time

The sputum induction area is separated from the waiting area by wooden boards and a swinging door. It is partly an open area and is well ventilated. It has a sink with running tap water. Soap is available for the patient's use. There is a UV light source overhead that is switched on during the night to kill the TB bacilli.



The reception area is where most of the transactions between the clients and the service providers take place. Walk-in clients and referrals are seen by a receptionist. This is usually a medical technologist since most of the referrals and walk-in patients are for diagnostic examinations or PPD testing. Follow-up of lab results are also done here.

There is a separate consultation table for continuing enrolled patients. Release of drugs and scheduling of follow-up consultations are done here. Allocated drugs for each enrolled patient are stored in a steel cabinet nearby. The drugs are placed in sturdy boxes and properly labeled with the patient's name, case number, category, date of start of treatment, and attending physician. Flowcharts of the Cavite Private Public Mix Referral System, Guide to Registration and Initiation of Treatment, and Enrollment to the PPM DOTS Center can be found on the wall. IEC materials are placed near the seats of the patient's. There is adequate lighting inside the room. An exhaust fan is strategically situated over the waiting area of the reception room so that the "infected air" is directly brought to the UV duct for decontamination.





The examination room is separated from the treatment and diagnostic room by a wooden partition and a swinging door. Things that are being done inside the examination room are not seen from the outside unless one tries to look over the swinging door. However, conversation inside the examination room can be partially heard outside if loud enough. There is adequate lighting inside the room. An exhaust fan is strategically situated over the examining table so that the “infected air” is directly brought to the UV duct for decontamination.

Anti-TB drugs and other medications are neatly stored in cabinets in the examination room.



The conference room is separated from the reception room by wooden panels. The group lectures on TB for the patient and treatment partners are done here. Staff meetings are also held here.

The TB laboratory unit is separate from the DOTS center and has a floor area of 44 square meters. It is located on the second floor of the same building where the DOTS center is housed. Daily disinfection of the laboratory is done.



The lab unit is divided into four rooms; a reception area, a microscopy room, an ante-room, and an isolation room. It is air-conditioned and exhaust fans are in place for a unidirectional air flow. Smearing, fixation, and culture are done in the isolation room.



The DOTS center and TB lab unit is well maintained. A cleaner comes daily for maintenance. Trash is segregated as biodegradable, non-biodegradable and hazardous waste. Infectious materials are first autoclaved prior to disposal by the microbiology section of the research services. Garbage containers are covered and are properly labeled.

### ***TB-Related Equipment Inventory***

There is a written inventory for the equipment and supplies.

Since the DOTS Center is part of the TB Research Unit, some of the equipments bought were for research purposes.

The following table lists the equipment and supplies observed during the two-week data collection.

	EQUIPMENT/SUPPLIES	QUANTITY
Examination Equipment	Stethoscope	1
	BP apparatus	1
	Examination table	1
	Thermometer	1
	Weighing scale	1
Clinic Furniture and other Equipment	Microscope	1
	Electric fan	
	Exhaust fan	3
	Standfan	2
	Cabinet	3
	Table	6
	X-ray machine (hospital)	5
	Drinking water (5 gallons/container)	4
	Drinking glass (non-disposable)	6
	Cleaning supplies	
	Refrigerator	1
	Shelves	4
	Computer	1
	Printer	1
	Electronic typewriter	1
	Fire Extinguisher	2
	Smoke detector	4
	Laminator	1
	Negatoscope	1
	White board	1
Airconditioner	1	
Wall clock	1	
Suggestion box	1	
Clinic supplies	Masks (N95) (pieces)	20
	Masks (disposable) (pieces)	30
	Gloves (Latex)	100
	Syringe (3 cc)	45
	Syringe (insulin)	200
	Needle dispenser	1
	Alcohol (1 bottle)	1
	Tape measure	1
	Tongue depressors	46
	Micropore tapes (rolls)	5
Clinic instruments	Mayo scissor, curved	1
	Kelly forceps, curved	1

	EQUIPMENT/SUPPLIES	QUANTITY
Laboratory Equipment	Microscope	1
	Refrigerator	1
	Computer	1
	Printer	1
	Refrigerated Centrifuge	1
	Vortex mixer	1
	Biological safety cabinet	1
	Electric burner	1
	Carbon dioxide incubator	1
	Carbon dioxide tank	1
	LPG tank 11 kg	1
	Electrical syringe needle destroyer	1
	Filing cabinet	2
	Air-conditioner	1
	Wall clock	1
	Smoke detector	2
	Fire extinguisher	1
	Exhaust fan	2
	Table	2
	Extension cord	1
Laboratory supplies	Masks (N95)	80
	Sputum collecting containers	1100
	Sharps container	2
	Reagents	
	Carbol fushcin (500 ml/bottle)	4
	Methylene blue (500 ml/bottle)	4
	Glass slides (72 pieces/box)	16
	Sterile cotton balls (bag)	5

### **E. Human Resource Set-up:**

There are 6 full time DOTS service providers in the center; these are the Director, PPM DOTS Nurse Coordinator, DOTS nurse, two Medical Technologists, and a Research Assistant.

The Director and the PPM DOTS Nurse Coordinator has multiple roles. The Director is also the physician of the center as well as a member of the diagnostic committee; while the PPM DOTS Nurse Coordinator acts as the drug supply manager and is also a member of the diagnostic committee. Another physician works part-time as the DOTS physician.

In addition to that, the director also acts as the director of the TRU, and is a member of the TB Infection Control Committee.

Figure 4 shows the organizational chart of the TB Research Unit. The PPM DOTS Coordinator and the chief medical technologist report directly to the TRU Director, who is also the PPM DOTS Center Administrator. The immediate supervisor of the support staff and the DOTS nurse is the PPM DOTS coordinator while the chief medical technologist supervises the other medical technologist.

### Organizational Chart of the Tuberculosis Research Unit

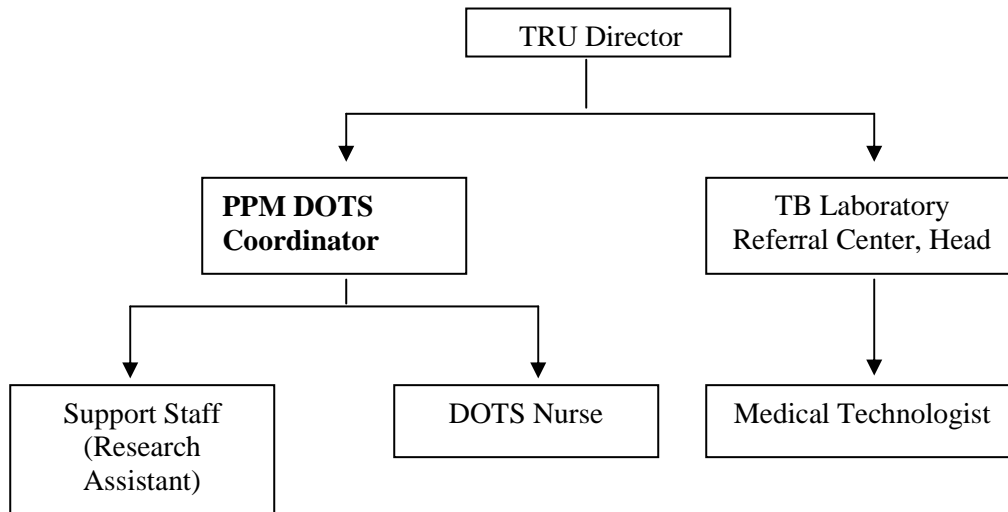


Figure 4. Organizational chart of the PPM DOTS Center

The TRU Director in turn is accountable for the overall management of the TB Research Unit and reports directly to the Vice-President of the Research Services. Below is an organizational chart for the Research Services section of DLSU (Figure 5).

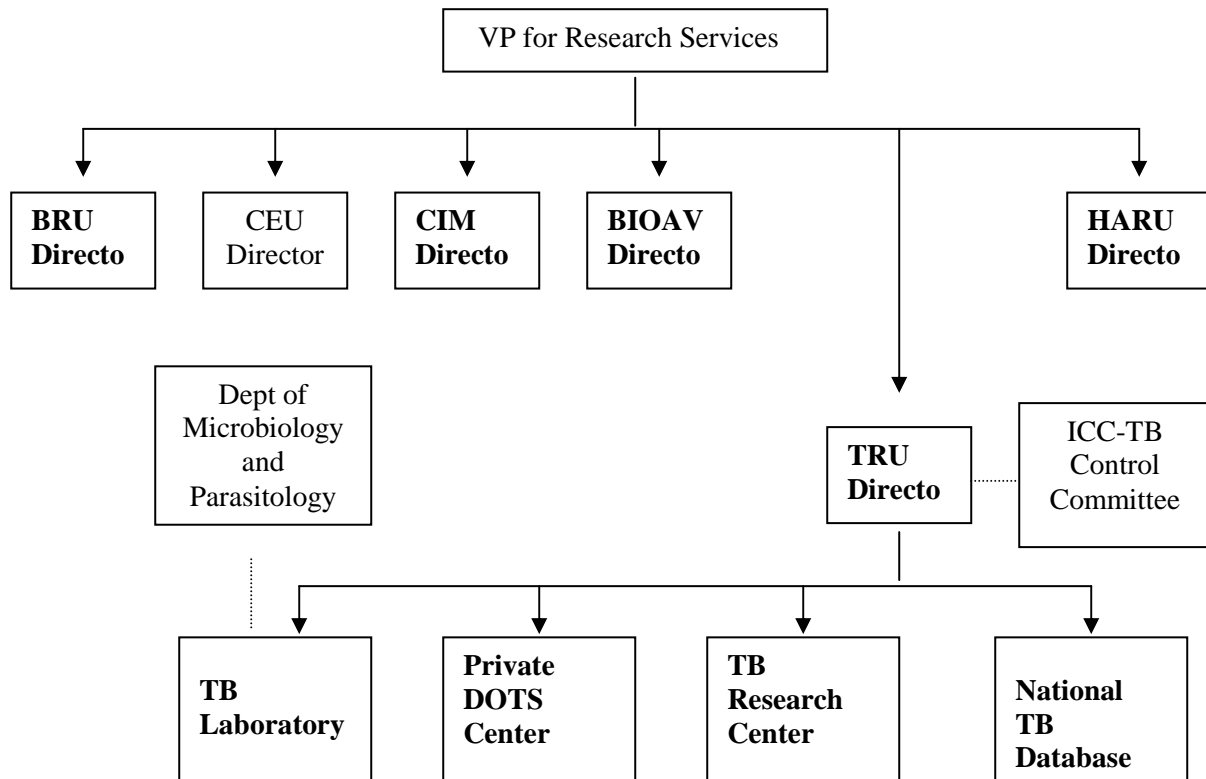


Figure 5. Organizational Structure of the Research Services of DLSU

PPM DOTS Center administrator

*The PPM DOTS Center Administrator is also the Director of the TB Research Unit and also acts as the DOTS physician of the clinic. The Administrator/Director/DOTS physician has been working with the DOTS Center since its operation (May 2002).*

*As the director, the person is accountable for the overall management of the TB Research Unit.*

As the administrator of the DOTS Center, she supervises the staff of the clinic and TB laboratory. She also supervises the activities of another model DOTS clinic: TB in the Workplace. She coordinates TB-related activities with the provincial TB Coordinator, evaluates TB activities, ensures and monitors the implementation of the DOTS strategy and does corrective and remedial measures for problems encountered, monitors and consolidates all records and reports together

with the Nurse Coordinator, checks and signs quarterly reports, and acts as the training officer of the unit. There is no system for evaluating staff performance.

She finished her MD degree in 1985, and did her residency in family medicine. She has done postgraduate studies in tropical medicine and hygiene (1989) and in clinical tropical medicine (1991). Her medical education covered the following on TB: prevention and control, signs and symptoms, diagnosis, treatment, NTP policies and procedures and program management, DOTS, management and distribution of anti-TB drugs and supplies, AFB smear microscopy, and laboratory quality assurance.

She has participated in several trainings on TB and thinks that no further training is necessary.

She adheres to the NTP MOP and the guidelines for TB in the workplace. She is very knowledgeable on the signs and symptoms of TB, on the algorithm for diagnosing TB symptomatics, on the proper classification of TB patients, on the appropriate treatment regimen, on the management of different TB patients, on the proper management of patients experiencing adverse reactions and on the recommended schedule of having a follow-up sputum examination.

She lectures on the pathogenesis and transmission of TB and TB in the workplace. She also conducts TB DOTS training, together with the rest of the staff to health providers.

### PPM DOTS physician

As the DOTS physician, the primary function is to provide initial assessment for TB suspects (walk-in patients).

With regards to case finding, the DOTS physician screens and assesses patients suspected to have TB, evaluates TB patients, and request for sputum AFB smear. If results are negative, she requests for a chest X-ray. If patient has CXR findings consistent with PTB, patient is referred to the TB Diagnostic Committee for further evaluation.

For case holding, she examines TB patients on a monthly basis, prescribes the appropriate treatment regimen, and manages adverse drug reactions.

The DOTS physician is PhilHealth accredited.

### DOTS nurse coordinator

The DOTS nurse coordinator is accountable for the overall management of the private DOTS clinic. He has been working at the TB facility since February 2002.

He finished his degree in nursing in 1995 and a masteral course in health and sciences in 2000. TB-related trainings he participated in are the revised NTP guidelines, basic microscopy and the basic DOTS for doctors and nurses (2002) and recently basic and advanced GIS training. However he thinks that he still needs training in the following areas: drug management, particularly drug inventory; how to do contact investigation and project management.

He provides the following services: dispensing of anti-TB drugs, health education, reminds TB patients on the schedule of follow up consultations with their respective private physician, and does defaulter tracing. He sometimes acts as the receiving nurse who dispenses anti-TB drugs, enrolls the patient to the program and facilitates group discussion/health education among the

patients and treatment partner. His administrative functions are the following: assists in the preparation of the budget and resource allocations, prepares plans/schedule, prepares and submits quarterly report, and lectures on NTP guidelines and the role of health workers in TB. He also does other activities as assigned by the Director of the TB Research Unit and/or the Vice President for Research Services, maintains strong professional and interpersonal relationship with everybody involved in TB activities and is involved in the research activities of the Center.

For case finding, he screens and assesses patients suspected to have TB, evaluates TB patients, request for sputum AFB smear, collect sputum specimens for microscopy, maintain and update the treatment cards/TB symptomatics masterlist/TB symptomatics target client list, monitor and supervise the procedures for case-finding activities, and supervises/checks if treatment cards and TB register is properly filled out.

For case holding, he prescribes the appropriate treatment regimen, assigns and supervises a treatment partner for patients who will undergo DOTS, implement DOT, monitor patient's response to drugs, maintain and update TB registry, prepare and submit reports to the facility administrator/physician, monitor and supervise providers to ensure the proper implementation of DOTS, assesses and classifies treatment outcome, and prepares and submits reports to the DOH/NTP. Sometimes he acts as the receiving nurse if the latter is not available.

For drug supply management, he facilitates the requisition and distribution of drugs and other supplies, prepares and submits the quarterly report on drug inventory and requirement to the facility administrator/physician/nurse, coordinates with the DOH for drug supply, and ensures availability of drug at all times.

He also conduct one-on-one counseling of patients, conducts the group discussion of patients and treatment partners, educates medical students/clerks on TB diagnosis and treatment, conducts TB DOTS training of health providers, and distributes IEC materials to patients and treatment partners.

He adheres to the MOP of the NTP. He is very knowledgeable on the signs and symptoms of TB, on the algorithm for diagnosing TB symptomatics, on the proper classification of TB patients, on the appropriate treatment regimen, on the management of different TB patients, on the proper management of patients experiencing adverse reactions and on the recommended schedule of having a follow-up sputum examination.

He keeps a record of the treatment outcome and reports this to the Provincial Health Office and PhilCAT on a quarterly basis.

### **DOTS nurse**

The DOTS nurse has been working at the TB facility since August 2002. She finished her degree in nursing in 1976. She has undergone basic TB DOTS training last September 2002 in Tagaytay and last May 2003 in Makati. The training was organized by PHO, DOH and World Vision. She wants to be updated on new policies as much as twice a year.

She provides the following services: assesses TB clients and obtain their vital signs, performs drug count and ensures completeness of medication for every TB patient, dispenses anti-TB drugs, organizes and maintains TB patient's file, ensures availability of forms, educates and

reinforces TB education to TB patients, helps in training of health providers, BHW's, medical technologists, follows-up defaulters by giving home visits, and helps out in research.

For case finding, she would request for a sputum AFB smear, collect sputum specimens for microscopy, refer diagnosed TB cases to the physician or nurse for clinical evaluation and initiation of treatment, and maintain and update the treatment cards/TB symptomatics masterlist/TB symptomatics target client list.

For case holding, she assigns and supervises a treatment partner for patients who will undergo DOTS, implements DOT, monitor patient's response to drugs, maintains and updates the TB registry, monitors and supervises providers to ensure the proper implementation of DOTS, and assesses and classifies treatment outcomes.

For drug supply management, she ensures availability of drugs at all times and regularly checks expiration date of anti-TB drugs.

She also conducts one-on-one counseling of patients, conducts group discussion of patients and treatment partners, educates medical students/clerks on TB diagnosis and treatment, conducts TB DOTS training of health providers, distributes IEC materials to patients and treatment partners, calls and contact treatment partners and patients who did not come for their scheduled date of consultation, and answers questions on TB raised by patients and relatives during sputum collection.

She adheres to the MOP of the NTP. She is knowledgeable on the signs and symptoms of TB, on the algorithm for diagnosing TB symptomatics, on the proper classification of TB patients, on the appropriate treatment regimen, on the management of different TB patients, on the proper management of patients experiencing adverse reactions and on the recommended schedule of having a follow-up sputum examination.

### Medical technologists

The main functions of the medical technologists is to do sputum smear examination for diagnosis and during follow-up sputum examinations, submit the results of the sputum smear examination, to maintain and update the NTP Laboratory Registry, to prepare the quarterly report on laboratory activities, to submit all sputum smear (+) slides and 10% of all sputum (-) slides to the provincial health office on a quarterly basis for Quality Assurance checks.

#### *Head of TB Laboratory Unit*

The Head Medical Technologist is accountable for the overall management of the TB laboratory. He has been working at the TB DOTS facility since May 2003 but has been with the TB laboratory for more than 3 years.

He finished his degree in medical technology in 1996 and is currently taking another degree in information and technology. His degree covered the following TB topics: prevention and control, signs and symptoms, diagnosis, treatment, AFB smear microscopy and laboratory quality assurance. He has undergone basic TB DOTS, microscopy, quality assurance and validator's training and thinks that he has enough training. He provides the diagnostic services and health educates the patients and trains the other medical technologist in the TB laboratory.



For case finding, requests for sputum AFB smear, collects sputum specimens for microscopy, and informs the DOTS Nurse Coordinator of smear (-) results for referral to the TB Diagnostic Committee.

For microscopy, he does sputum smear examination for diagnosis and follow-up, submits results of sputum examination to the physician or nurse, maintains and updates the laboratory registry, prepares quarterly report on laboratory activities and submit to the facility administrator/physician/nurse and prepares and submits quarterly laboratory requirements to the facility administrator/physician/nurse.

He also distributes IEC materials to patients and treatment partners, answers questions on TB raised by patients and relatives during sputum collection.

He also does other activities such as technical work (computers), documentation (takes pictures) and other things (acts as a handyman of the Center). He did the program for the TB laboratory database.

He adheres to the MOP of the NTP. He is very knowledgeable on the signs and symptoms of TB, on the algorithm for diagnosing TB symptomatics, on the proper classification of TB patients, on the appropriate treatment regimen, on the management of different TB patients, on the proper management of patients experiencing adverse reactions and on the recommended schedule of having a follow-up sputum examination.

He keeps a record of the treatment outcome and reports this to the Provincial Health Office and PhilCAT on a quarterly basis.

The TRU Director evaluates his work informally based on the accuracy of reading of the smears and on the quarterly reports of the TB laboratory.

### *Medical technologist*

The Medical Technologist has been working at the TB facility since February 2002. She provides the following services: sputum AFB examination, PPD testing, sputum culture and sensitivity and health education (proper disposal of sputum, covering of mouth, info on PPD and culture and sensitivity).

She finished her degree in medical technology in 2000. Her degree covered the following TB topics: prevention and control, signs and symptoms, diagnosis, treatment, AFB smear microscopy and laboratory quality assurance. She has no training yet in basic TB DOTS but has undergone training in basic microscopy. She plans to attend basic TB DOTS training in the future.

For case finding, she requests for sputum AFB smear, collects sputum specimens for microscopy, and maintains and updates the TB symptomatics target client list.

For microscopy, she does sputum smear examination for diagnosis and follow-up (record patient's name, prepare specimen, reads slide, if (+) refer to DOTS clinic, if (-) refer to attending physician), submits results of sputum examination to the physician or nurse, maintains and updates the laboratory registry, and does PPD and culture and sensitivity.

She adheres to the MOP of the NTP. She is very knowledgeable on the signs and symptoms of TB, on the proper classification of TB patients, on the appropriate treatment regimen, on the management of different TB patients, on the proper management of patients experiencing adverse reactions and on the recommended schedule of having a follow-up sputum examination.

Support staff (research assistant)

The support staff of the DOTS Center is the research assistant for the model 4 project (TB in the workplace). She helps out in the DOTS Center and sometimes acts as the receptionist, medical technologist, or nurse. She sometimes dispenses drugs (under supervision) and provides health education (distribute IEC materials to patients and treatment partners and assists in facilitating the training of clerks, interns and residents on DOTS/NTP). She also assists in updating and recording data in the TB registry. She has been working at the TB facility since February 2002.

She finished her degree in medical technology in 1984. Her degree covered AFB smear microscopy and laboratory quality assurance. She has been trained in basic TB DOTS last September 2002 in Tagaytay (organized by PHO, DOH and World Vision) and recently in May 2003 in Makati (organized by PhilCAT and DOH and funded by Glaxo-Smith-Kline). She wants to have training in facilitating, to have refresher courses on TB DOTS once or twice a year and to undergo training in product management and quality assurance thrice a year.

She adheres to the model 4 guidelines (which is based on the NTP and formulated by Dr. Dalay). She is knowledgeable on the signs and symptoms of TB, on the algorithm for diagnosing TB symptomatics, on the proper classification of TB patients, on the appropriate treatment regimen, on the management of different TB patients and on the recommended schedule of having a follow-up sputum examination.

The following table shows the TB-related trainings attended by the DOTS Center staff.

Table 9. Trainings attended by the PPM DOTS Center Staff.

PPM DOTS Center Staff	Basic DOTS	DOTS certifier	Advocacy	Community Organizing	Basic Microscopy	Quality Assurance	Validator's Trng	Monitoring	GIS (basic and adv)
Director	x	x	X	X		x			
DOTS Nurse Coor	x		x		x			x	x
DOTS Nurse	x								
Chief Medical Tech	x			X	x	x	x		
Medical Tech					x				
Support Staff	x								

## **Multi-tasking**

Although each of the staff has defined roles in the center, they also do additional work / tasks that are not part of their job description.

An advantage of multi-tasking between the nurse and the research assistant is that they can relieve one another if the other is unavailable since they basically know the skills of each other, i.e. they both know how to enroll patients, how to educate patients, and how to dispense the medications.

A disadvantage of multi-tasking is that the research assistant is unable to be involved in some projects because of the workload and the lack of time to do their job.

## ***Diagnostic Committee***

Members of the diagnostic committee are: TRU Director/ PPM DOTS Administrator, PPM DOTS Nurse Coordinator, NTP Coordinator of the Public Sector, pulmonologist, and radiologist. Private and public physicians are represented in the diagnostic committee.

The Diagnostic Committee used to meet once a month. Due to the increase in referrals, it now meets twice a month, every 2<sup>nd</sup> and 4<sup>th</sup> Wednesday. Referrals made to the Diagnostic Committee are sputum smear (-) patients with CXR findings suggestive of TB. Each depends on the number of referrals made. The last session lasted over two hours.

## **F. Record-Keeping Set-up:**

### ***TB Management Kit*** (see to Appendix B)

The Kit includes the following forms: pre-enrollment form, contract of agreement, social services form, drug allocation form, drug release form, treatment sheet, consultation summary form, adverse reactions form, and home visit form.

The *pre-enrollment form* records the patient's name, address, telephone number, age, sex, civil status, accompanying person, presenting symptoms, history of previous TB treatment, laboratory test results, final diagnosis, management plan, treatment plan, attending physician, family income, economic status, start of treatment and treatment partners.

The *contract of agreement* is an agreement among the TB patient, the treatment partner, the attending physician and the PPM DOTS Center of the TRU DLSUHSC. The agreement states free or subsidized anti-TB medicines, minor and/or major side effects may arise and to inform attending physician and the PPM DOTS Center, confidentiality of records and may be used for research purposes, may be approached and interviewed for any research activities undertaken related to the program. It also states that the patient agrees to undergo three sputum smear examinations and other necessary diagnostic tests and submit results to Provincial TB Diagnostic Committee for analysis, evaluation and recommendation if results are negative and CXR is suggestive of PTB, be interviewed and assessed by the Social Service for classification, adhere to

the treatment management ordered by the attending physician, attend the PPM DOTS Center program orientation and health education sessions prior to enrollment, take anti-TB drugs daily under supervision with the identified treatment partner/s, allow treatment partner to obtain anti-TB medicines at the PPM DOTS Center on a weekly basis, see attending physician for follow-up consultation and the PPM DOTS Nurse for monitoring every month with treatment partner preferably, undergo repeat sputum smear examinations during scheduled follow-up exams, follow any treatment modification if there is interruption of treatment, and pay for the cost of branded anti-TB drugs if prescribed by attending physician and if agreed upon (by the patient).

The *Social Services Form* records the patient's educational attainment, occupation, nature of work, employer, monthly income and SSS, TIN, PHIC number. It also records the educational attainment, occupation, income and relationship to the patient of the other members of the household.

The *Drug Allocation Form* records the treatment regimen of the patient and the drug allocation for the entire duration of treatment.

The *Drug Release Form* records anti-TB drugs dispensed to the patient/treatment partner on a weekly basis, the dates covered, the date for release, the date of actual release and the persons who released and received the drugs.

The *Treatment Sheet* is patterned after the NTP Treatment Card with some modification and added information. Aside from all the information listed in the NTP treatment card, information on the CXR tests done and results, drug intake during the maintenance phase (instead of just drug collection as recorded in the NTP card) as well as the extension phase if applicable, and the schedule of consultations with the attending physician and follow-up sputum examinations are also recorded in this sheet.

The *Consultation Summary* form records the monthly consultation schedule, the medical history pertinent to TB and TB exposure, vital signs of the TB patient, laboratory tests done and results, signs and symptoms, physical examination findings, response to treatment and the name of the physician for every consult.

The *Adverse Reactions* form records the classification of TB, treatment regimen, duration under TB treatment, what anti-TB drugs (include the dosage) was the patient taking when the adverse reaction/s arose, if there was interruption of drug taking or if the patient died and the reasons, and the suspected drug for causing the adverse reaction/s.

The *Home Visit* form records the reason/s for prompting home visit, describes the home and family, describes the living situation and functioning, describes patient (appearance and mood, ability to relate to worker, cooperation, coping mechanisms, insight into problems and motivation), psychosocial history, sources of health care, describes the impact of illness on the family (emotional, physical and economic aspects), the actions taken by the worker, and plans for future care of the patient.

## **G. Institutional Commitment: Networking with Other Groups (with PPM perspective):**

The PPM DOTS Center is linked with the following organizations:

World Health Organization – Western Pacific Regional Office  
- provides technical support and IEC materials

International Union Against Tuberculosis and Lung Diseases  
- provides technical support

United States Agency for International Development  
- funds CDC which in turn funds the DOTS Center

Center for Disease Control and Prevention  
- funds the DOTS Center

World Vision Development Foundation, Inc.  
- provides logistics and training, advocacy, IEC materials  
- provided anti-TB drugs when DOH run out of drugs for 3 months

Department of Health  
- provides technical support, anti-TB drugs, training, IEC materials

Department of Health, Center for Health Development 4  
- provides training and manuals

Department of the Interior and Local Government  
Office of the Provincial Governor of Cavite  
Provincial Health Office of Cavite  
- member of the diagnostic committee  
- provides incentives to physicians  
- provides training, advocacy, NTP forms

Local Government Units  
- provides training  
- referral system

Philippine Coalition Against Tuberculosis  
Coalition of Concerned Caviteños Against Tuberculosis  
- provides technical support

World Christian Fellowship  
- a Christian organization that provides a network of treatment partners

DLSUHSC  
- provides administrative support

## H. Stakeholders

### Patients

- Almost all patients are satisfied with the services they receive
- Almost all felt that the duration of consult was just right
- 11% find the waiting time too long
- Majority of the patients find the cost of treatment affordable
- 9 out of 10 patients had chest X-rays prior to their visit at the DOTS clinic
- Most of the patients learned about the DOTS Center through their attending physicians
- More than a third had concerns about TB or other health issues that they wanted to discuss
- Contact numbers of the DOTS Center were only given to a number of patients
- 9 out of 10 patient felt that there was enough privacy during consultation
- Almost all find the facility accessible with regards to clinic hours and days

There are a total of 244 patients enrolled at the DOTS Center since the start of operation up to September 2003. Of these patients, more than a hundred patients are still continuing treatment.

In order to be enrolled into the program, the TB patients must submit three sputum for AFB smear examination, must undergo other diagnostic examinations that are necessary, he/she must present a competent adult treatment partner (preferably a household member), and he/she must sign and agree with the conditions set forth in the contract of agreement between the him/her, the treatment partner, the attending physician and the DOTS Center.

During the two-week data collection period, the study team was able to observe 54 TB patients receiving services from the health provider and interview 51 TB patients.

Out of the 54 clients observed, 22 (40.7%) were new clients and 32 were revisit clients (59.3%). Out of those interviewed, 17 (33.3%) were new clients and 34 were revisit clients (66.7%). There is a discrepancy in the number of new and revisit clients because some of the patients who were observed were not interviewed since they only came to submit their sputum for AFB examination. There are more revisit clients in those interviewed because two of the clients were not observed.

All but one of the new clients were referrals and only two of the follow-up clients had problems.

## Findings from patients who were observed

There are 19 patients on follow-up (17 without problems, 2 with problems) who are in the intensive phase of treatment, while 13 are in their maintenance phase.

Majority of the patients are in Category I.

### ***Greeting and assessing the patient***

Majority (>70%) of patients were greeted by the provider in a friendly manner.

More of the new clients needed the services of the medical technologists when compared to follow-up clients. This is because new clients usually go to the clinic for a diagnostic exam whereas follow-up clients go for their weekly supply of medications, follow-up consultations or sputum examinations.

More patients on their first consultation were asked for presenting symptoms. However these comprise only 40% of new clients.

Taking of weight, blood pressure, or doing a physical examination was not done in any of the follow-up patients.

### ***Procedures performed***

All patients (4/4) who were due for their sputum examination were asked by the provider if specimen was submitted. All sputum collections were done in the well-ventilated induction room of the DOTS clinic. In 31 out of 49 (63.3%) patients did the provider give a written reminder of the schedule of the next sputum examination.

There was only one instance wherein the provider washed his/her hands before and after examining a patient.

The following table lists the number of observations wherein the provider performed any of the following after treatment was initiated. Two of the clients opted to take the medicine at home.

Table 11. Activities done by the provider after initiation of treatment

Activity	n	%
Inform the patient that he/she has TB	15	68.2
Provide the patient with some information on TB	15	68.2
Motivate the patient to undergo and complete treatment	15	68.2
Explain the TB DOTS case management to the patient	15	68.2
Open the treatment card and two NTP ID cards and start the treatment	15	68.2
Register the patient in the TB register	15	68.2
Assign a treatment partner to the TB patient	15	68.2
Show and identify each pill to the patient	15	68.2
Do DOT	13	59.1
Inform the patient about the possible adverse drug reactions and advise on steps to be taken	15	68.2
Record the date when treatment was first started	15	68.2
Record the due date of the first follow-up sputum examination in the treatment card	15	68.2
Not applicable	7	31.8
<b>TOTAL (N)</b>	<b>22</b>	

Majority of the treatment partners are family members.

Table 12. Distribution of treatment partners

Treatment Partner	n	%
Nurse	2	4.5
Midwife	0	-
Family member	37	84.1
Spouse	(10)	
Parent (Mother)	<b>(18)</b>	
Brother/Sister	(5)	
Daughter/Son	(1)	
Relative	(3)	
Others	5	11.4
Friend/Boardmate	(2)	
Neighbor	(1)	
His attending physician	(1)	
Godmother	(1)	
<b>TOTAL</b>	<b>44</b>	<b>100</b>

Patients who came for their daily drug intake were supplied with their anti-TB drugs (25/25).

### ***Discussion of TB and other health issues***

During the consultation, most of the patients who were imparted information on TB were new clients.

Table 13. Number of Patients informed about TB during consultation



Activity	New Clients (n=22)		Follow-up Clients (n=34)	
	Yes	No	Yes	No
Provider imparted information on TB	16 (72.7%)	6	4 (11.8%)	28

Key messages conveyed are:

Table 14. Key messages conveyed during consultation

Key Messages	n	%
TB is infectious	16	80
TB can be cured	15	75
Cover mouth when coughing	15	75
Regular drug intake of a combination of drugs	16	80
Requires completion of treatment	17	85
Consequences of irregular drug intake	16	80
Side effects of anti-TB drugs	16	80
Maintain good hygiene and proper nutrition	17	85
Importance of follow-up sputum smear examination	17	85
Importance of family/treatment partner support	16	80
Vigilance for development of symptoms of household contacts	15	75
The need of symptomatic household members to seek immediate consult	15	75
TOTAL (N)	20	

All but one of the IEC materials was used for first time consultations.

Table 15. Distribution of IEC materials used

IEC materials	n=22	%
Flipchart	12	54.5
Brochure/pamphlet	14	63.6
Poster	0	-
Comics	5	22.7

The provider gave contact numbers to only 3 of the patients (2 to new clients, 1 to repeat visit without problems).

### Findings from patients who were interviewed

The following table below shows the sociodemographic characteristics of those who were interviewed. Slightly more female TB patients were represented. The mean age of all patients interviewed is 34.9 years old (S.D. 13.7); most of them are afflicted with TB in their productive years.

Table 16. Sociodemographic profile of observed patients

SOCIODEMOGRAPHIC CHARACTERISTICS		n	%
SEX	Male	24	48.0

	Female	26	52.0
AGE	≤ 14	0	-
	15-24	16	32.0
	25-34	13	26.0
	35-44	7	14.0
	45-54	9	18.0
	55-64	4	8.0
	≥ 65	1	2.0
MARITAL STATUS	Married	24	48.0
	Cohabiting/Living together	3	6.0
	Single, never married	20	40.0
	Divorced/separated	1	2.0
	Widowed	2	4.0
EDUCATIONAL BACKGROUND	Elementary level	12	24.0
	High school level	20	40.0
	Vocational courses	7	14.0
	College level	11	22.0
LANGUAGES	Tagalog	49	98.0
	English	37	74.0
EMPLOYMENT	Employed	16	36.4
	Not Employed	28	63.6
HOUSEHOLD MONTHLY INCOME	≤ 1,500	6	12.0
	1,501 to 4,999	7	14.0
	5,000 to 9,999	20	40.0
	10,000 and above	9	18.0
	Don't know	8	16.0

There are 17 patients on follow-up (15 without problems, 2 with problems) who are in the intensive phase of treatment, while 12 are in their maintenance phase. The two patients who exhibited problems were due to relocation (1) and to having adverse reactions to the anti-TB drugs (1).

Majority of the patients are in Category I and all are PTB cases.

Majority of the new clients came in for enrollment (9/17), while majority of those on follow-up came for their weekly drug supply (21/34).

Around 9 out of 10 patients had a chest X-ray prior to consult at the DOTS Center.

More than three-fourths presented with symptoms. The most common symptoms they presented with were cough (82%), fever (56.4%), chest and/or back pains (51.3%), hemoptysis (30.8%), anorexia (28.2%) and sputum expectoration (25.6%).

Majority of the patients knew of the DOTS Center from their attending physicians (80%). A few knew from a relative/friend/neighbor (12%).

Less than half (46%) of clients had a companion. Of those with a companion, two-thirds were family members.

All but one were able to get the services they came in for in the facility.

Almost all feel that they spent just the right amount of time for consultation. Only three found it to be too long.

More than a third of patients had concerns about TB or other health issues that they wanted to discuss with their health provider. Majority of the patients were satisfied with their health provider in listening to their concerns.

Eighty-eight percent of the respondents said that the health provider explained to the him/her what his/her illness is.

Nine of out 10 patients feel that they have enough privacy during consultation with the health provider, that their personal information is kept confidential and that the facility ensures that patients can talk privately with their providers.

Three out of four patients said that the health provider/treatment partner involved them in making decisions about their treatment.

All but one found the explanation of the provider easy to understand.

More than two-thirds remember that they were given educational materials on TB since they started treatment. All knows that it is about TB, but majority cannot recall what the material contains. More than 80% find it useful.

Although the DOTS nurse said that all enrolled patients were given lectures/seminars on TB during enrollment, only 58% of the respondents remember receiving one. The topic that is frequently remembered among the respondents are to have a regular intake of a combination of drugs (62.1%) and on prevention and transmission issues.

All but two of the respondents find the hours of the facility convenient for them. Three of the respondents however find the clinic days of the facility inconvenient.

Almost all find the location of the facility convenient. More than 90% needs just one or two rides to get to the facility. It takes 30 minutes or less for 70% of the respondents to get to the DOTS Center.

Only 11% of the patients find that the waiting time of the clinic is too long.

Almost half (46%) of the respondents have identified a similar facility offering the same services as the DOTS Center near their home. Some of the reasons expressed by the patient in not seeking the services of these facilities (majority of which are health centers) are inconvenience, poor service and lack of medicine.

All but one was satisfied with the services they got at the DOTS Center.

### ***On cost of care***

Eighty-six percent of the respondents find the cost of treatment acceptable.

Consultations made at the DOTS Center are free of charge; however consultations made with the patient's attending physician are charged to the patient. The professional fee of the physician ranges from 180 to 250 pesos; there are times however when the private physician does not charge the patient.

Sputum smear examination before treatment costs 390 pesos. Succeeding smear examinations cost 130 pesos. Chest X-ray costs 285 pesos. PPD test costs 250 pesos. Sputum culture costs 500 pesos while sputum culture and sensitivity costs 1,000 pesos. (refer to Table below).

SERVICE/ COMMODITY	Amount	Out-of-pocket	HMO
1. Consultation Initial Follow-up (monthly)	Depends on attending physician (ranges from 0 to 250 pesos per consult)		
2. Sputum smear examination Before treatment Succeeding smear examinations	PhP 390.00 130.00	390.00 130.00	390.00 130.00
3. Drugs	Provided by DOH free of charge		
4. Chest X-ray	285.00	285.00	285.00
5. Purified Protein Derivative (PPD) test	250.00	250.00	250.00
6. Sputum culture	500.00	500.00	500.00
7. Sputum culture and sensitivity	1,000.00	1,000.00	1,000.00

There is no system to determine which patients will be charged or not. However, children of TB patients can avail of free PPD test as long as said TB patients are officially enrolled in the DOTS program. PPD testing is free for children of TB patients provided by Novartis. There are a few indigent patients who were offered free sputum smear examination (this is a case-to-case basis).

### ***Knowledge on TB***

About two thirds of the respondents said that they acquire TB from another TB patient.

All but one of the patients know that TB is curable. Ninety six percent said that it is transmissible.

Sixty percent said that the best treatment for TB is regular intake of anti-TB drugs for the whole duration of treatment. Eighty-six percent said that the duration of treatment lasts for 6 months or more. Majority (82%) knows that anti-TB drugs have adverse effects. The most frequent adverse effect identified is skin reactions.

### **Treatment Partners**

- No formal training
- Majority of treatment partners are family members; DOT is done at home
- Are willing to be treatment partners of more than 1 patient if patient is living with them
- Task was difficult for the treatment partners at the start, but after awhile was able to adjust

There are no written procedures on assigning treatment partners.

The treatment partner must agree to supervise the TB patient with DOT daily; must accompany the patient at all times for health education, issuance of anti-TB drugs and follow-ups; and agree to get the weekly supply of anti-TB drugs from the DOTS Center.

Majority of treatment partners are members of the patient's family. The table below shows the distribution of the relationship of treatment partners to the TB patient.

Table 17. Distribution of Treatment Partners

TREATMENT PARTNER	2002		2003		TOTAL	
	n	%	n	%	N	%
DOTS Nurse	1	1.4	0	-	1	0.6
Family Member	54	73.0	73	78.5	127	76.0
DOTS Nurse and Family Member	4	5.4	13	14.0	17	10.2
Others:						
RHU Staff and Family Member	7	9.5	0	-	7	4.2
Volunteer	5	6.8	0	-	5	3.0
Company Nurse	3	4.1	4	4.3	7	4.2
Friend/Neighbor	0	-	2	2.2	2	1.2
Godmother	0	-	1	1.1	1	0.6
<b>TOTAL</b>	<b>74</b>	<b>100</b>	<b>93</b>	<b>100</b>	<b>167</b>	<b>100</b>

A total of 7 treatment partners participated in the focus group discussion. Two were company nurses and the rest were family members (4 were spouses and 1 was a daughter). The company nurses are providing DOT to 6 factory workers diagnosed with TB, while the family members takes care of only 1 patient. The treatment partners think that their patient load is just enough. However, some family members are willing to care for more than 1 as long as the patients are living in the same house as the treatment partner.

Treatment partners think that their primary role in the patient's care is to make sure that their patient takes their medications daily and records it on the treatment card. They also think that it is their responsibility to encourage their patient to complete the treatment if the patient is uncooperative. They are also responsible for getting the patient's weekly supply at the DOTS Center. Some of the treatment partners also remind the patient of some of the do's and don't's of TB.

Employees of a company are required to take a one-month leave after being diagnosed with TB. The company nurse goes to the PPM DOTS Center on a weekly basis to get their patient's anti-TB drugs. The patient's anti-TB drugs are provided by the PPM DOTS Center since the company is only willing to pay for one-month of anti-TB drugs. During the first month of treatment, the company nurse assigns a treatment partner, who is usually a family member, to directly observe the patient take their anti-TB drugs. The nurses monitor their patient's progress by absence of symptoms and weight gain. The nurses also record the patient's daily intake of drugs on the treatment card.

The company nurses and family members had no formal training on being a treatment partner. The company nurses were simply 'trained' by another company nurse who had basic DOTS training as well as the company physician. The family members however underwent a group discussion with PPM DOTS Nurse together with the patient during the day of enrollment of the patient. The discussion lasts for almost two hours.

TB patients who are employed are motivated to complete their treatment because of fear of being terminated from their work. For family members however, words of encouragement or reminders

that it is for the patient’s benefit are expressed. Other patient’s are motivated on their own if they see that there is an improvement in their health. All the treatment partners are motivated to continue caring for their patient just by knowing that their patient is getting well. At the start of treatment it was difficult, but they soon learned to adjust and get used to it. The patients go on follow-up consultation with their attending physician on a monthly basis.

All the TB patients who are cared for by the company nurse are not afraid that their co-workers would know that they have TB. There are however two patients cared by a family member who are afraid that someone would know they have TB.

The company nurses and some of the family members think that treatment partners need some form of training. They also expressed that there is a need to inform the community of the DOTS Center and the services that it provides.

### Referring Physicians

- Knowledge of DOTS Center mainly through seminars, conferences, workshops
- Refer patients who cannot afford anti-TB drugs
- Refer patients because of quality diagnostic examinations
- Refer patients because it is a one-stop shop for TB (provides consultations, diagnostic, treatment and management, monitoring, reporting)
- Patients are more compliant because of free anti-TB drugs
- Patients can be monitored more closely
- Some are hesitant to refer because they might loose patients
- Potential problem with compliance if anti-TB drugs are not for free
- There is delay of treatment if physicians follow the algorithm for diagnosing TB
- Some requests chest X-ray for baseline reading of patient and also because it is a requirement for SSS claims

There are 49 identified referring physicians to the center. Of these, 37 are affiliated with DLSU Medical Center (DLSUMC -18 consultants, 19 residents) and 12 are not affiliated (2 government physicians, 10 private physicians). Nineteen of these physicians have already undergone DOTS training – 11 UMC consultants, 2 public and 6 private non-UMC physicians (refer to Table 18).

Table 18. Referring MD’s to PPM DOTS Center

UMC Physicians (n=37)		Non-UMC Physicians (n=12)				TOTAL (N=49)
Consultants (n=18)	Residents (n=19)	Private (n=10)		Public (n=2)		
DOTS-		DOTS-		DOTS-		DOTS-

trained	%	trained	%	trained	%	trained	%	trained	%
11	61.1	0	-	6	60.0	2	100	19	38.8%

UMC – University Medical Center

Of the 49 referring physicians, information from 10 was gathered thru a focus group discussion. One of the participant is a pulmonologist, two are pulmonology fellows, two are internists, 4 are family medicine practitioners and 1 is a general practitioner. Half of the participants are affiliated with DLSUMC. Nine of the participants had basic TB DOTS training. The average number of patients seen by each physician ranges from 2 to 10.

Pertinent findings from the FGD are as follows:

Some of the referring physicians knew about the DOTS Center through a conference, workshop or presentations by the DOTS staff. Others knew about through personal contacts with the DOTS staff.

The physicians mainly refer their patients to the DOTS Center because of economic reasons. The physician knows that many of their patients are not able to afford the anti-TB drugs for the whole duration of treatment. Other reasons are that the diagnostic tests done at the DOTS Center are of quality and that health centers only dispense anti-TB drugs to sputum smear (+) patients. There was an instance wherein one patient was turned down by the health center because she was not a voter of that place. Another reason is that the DOTS center is like a one-stop shop wherein everything is available (quality diagnostics, free anti-TB drugs, monitoring). Also some of the referring physicians found out that patients referred to the DOTS Center are more compliant because of the free anti-TB drugs that they are being provided.

An advantage to the physician is that the patient can be monitored more closely if they were referred to the DOTS Center. Also the fact that their patients are getting cured is rewarding and enough motivation for them to refer their patients.

The patients that are not referred to the DOTS Center are those who are able to afford to buy their anti-TB drugs and for those who find it inconvenient to undergo DOT regularly. At times the referring physician is hesitant to refer their patient because they do not want to lose their patient.

The physicians think that there would be a problem on compliance if the drugs are not being provided for free. In case that the anti-TB drugs are not for free, suggestion of setting up a cooperative was promising because although the drugs are not entirely free, it is still at a lower price (cooperative would be able to get the drugs at a lower price and part of the money spent by the consumer would return through rebate).

Some of the disadvantages identified to the patient of DOTS is that not all patients find it convenient and accessible. Another said that it delays treatment since an algorithm is being followed in the diagnosis of TB. Also patients can't file SSS claims without a chest X-ray.

Some of the referring physicians still request the patient to have a chest X-ray. One of the reasons for requesting one is to have a baseline reading.

Training and education is needed especially for older physicians who are resistant to DOTS.



The physicians find it alright to be DOTS certified but not DOTS accredited since to them, accreditation would entail a lot of training and exams. The physicians strongly disagree to have a law to mandate referral to DOTS Center.

## I. ANALYSIS

### *Comparison of an Ideal DOTS Program and the Current FC DOTS Program*

The following table compares the current practice of the PPM DOTS Center of DLSU and that of the WHO recommended set-up according to the five components of DOTS.

Components of the DOTS	Recommended set-up (WHO)	Current DLSU PPM DOTS Practice
Political Will	DOTS incorporated into the national health system	<p>The mother organization has provided the space, some of the manpower and training, and some of the financial support to implement DOTS</p> <p>Memo was given out last July 2003 from the Medical Director's office that ALL sputum AFB smears be conducted at the TRU laboratory (no longer to be done at the hospital laboratory)</p> <p>The mother organization has also given some financial support for conducting trainings on DOTS.</p>

Components of the DOTS	Recommended set-up (WHO)	Current DLSU PPM DOTS Practice
Quality Sputum AFB Detection	Access to quality-assured sputum microscopy for case detection among persons presenting with symptoms in health services	<p>Medical technologists underwent DOTS microscopy training; one had additional training on quality assurance</p> <p>DOTS Center has the needed equipment, reagents and supplies in doing quality sputum AFB smears and reading</p> <p>Quality assurance checks of sputum smears and reading done quarterly by the PHO (sends all sputum (+) and 10% of sputum (-) smears). Last two checks had 100% agreement</p>
Quality Sputum AFB Detection	Access to quality-assured sputum microscopy for case detection among persons presenting with symptoms in health services	For doubtful cases, a second set of 3 sputum specimens is not affordable for the patients
Regular Supply of anti-TB medications	Uninterrupted supply of quality –assured drugs with reliable drug procurement and distribution systems	<p>DOH provides anti-TB drugs for free; Branded drugs are available and are being supplied by Novartis for a fee</p> <p>DOTS Nurse Coordinator ensures the continuous supply of anti-TB drugs; requests for anti-TB drugs way ahead of time</p> <p>DOTS Center maintains a 30% buffer for expected new enrollees based on monthly census</p>
Standardised Records and Reporting	Recording and reporting system enabling outcome assessment of each patient and assessment of overall program performance	<p>Personnel are well trained on basic DOTS</p> <p>Implementation of standardized monitoring and recording forms</p> <p>Development of the TB Management Kit which includes the following forms: pre-enrollment form, contract of agreement, social services form, drug allocation form, drug release form, treatment sheet, consultation summary form, adverse reactions form, and home visit form; does not have the counting sheet for laboratory activities and the counting sheet for treatment outcome forms</p> <p>The DOTS Nurse Coordinator submits quarterly reports to the PHO who in turn sends it to DOH.</p>

Components of the DOTS	Recommended set-up (WHO)	Current DLSU PPM DOTS Practice
Supervised DOT treatment	Standardized short-course chemotherapy regimens of 6-8 months, for smear positive cases, with DOT during the intensive phase for all sputum positive cases, the continuation phase of rifampicin-containing regimens and the whole re-treatment regimens	<p>Majority of the patients / treatment partners get the patient's weekly supply of anti-TB drugs and do DOT at home. (Category I and II patients)</p> <p>For Category II patients, patients are required to go to the DOTS Center daily during the intensive phase of their treatment for their streptomycin injection.</p> <p>Monitoring and recording of DOT is done by the treatment partner in the NTP treatment card</p>

### ***Strengths and Weaknesses of Current Program according to the 5 components***

#### Strengths

**The mother organization provides political commitment by having provided space for the DOTS center, furniture, some of the equipments, use of vehicle, personnel and DOTS-related training.**

The DOTS Administrator is very supportive of the DOTS Center and is a strong advocate of DOTS throughout Cavite. There is a strong partnership with major stakeholders of the DOTS program.

The DOTS personnel are trained, knowledgeable, dedicated and committed to their work. In particular, the medical technologists had 100% agreement with two previous quality assurance checks conducted by the PHO. In fact, the chief medical technologist also does validation of smears from other laboratories. There is good quality microscope, reagents and adequate supplies for doing quality sputum AFB smears and reading.

The physician and facility are PhilHealth accredited.

**Anti-TB drugs are provided for by DOH. Branded drugs at a cost are also available and are provided by Novartis. There is sufficient supply of anti-TB drugs. The PPM DOTS Nurse coordinator ensures that there is uninterrupted drug supply for patients.**

**The DOTS Center has developed their own TB monitoring and reporting forms some of which were based on the NTP recording and reporting forms.**

## Weaknesses

**Some of the DOTS staff are contractual (project-based). The mother organization provides a regular annual budget for the TB laboratory only; the budget of the DOTS center comes from the CDC grant (which will end on Oct 2004) – the grant pays for the staff, provides clinic supplies and materials, training of personnel in coordination with World Vision, and covers the maintenance and operating expenses of the clinic.**

Some of the staff expressed that they are overworked and that they are not well compensated for the amount of work they are doing. At times they are so busy that they are not able to finish some of the tasks they need to do such as updating their records.

Some of the DOTS staff are also staff of the TB Research Unit. Because of their involvement in other activities, they are not able to give their full time to the DOTS Center. They request that their patients come for their weekly supply of anti-TB drugs during Mondays and Tuesdays so that they have time to do their other activities during the rest of the week.

Since the TB Laboratory is separate from the DOTS clinic, the medical technologists waste their time in transporting sputum specimens from the clinic to the laboratory. Also there is a delay in the release of results because of the increasing workload of the medical technologist.

Since DOT is done at home, there is no assurance that the patient really takes their medications regularly (daily and on time).

Treatment partners are the ones who usually record the treatment on the NTP card, the DOTS nurse just copies the NTP card of the treatment partner.

The DOTS staff has made efforts to inform physicians of the services they provide through presentations and discussions. There has been no marketing strategy however that was employed, such as distributing flyers, posters or setting up banners, to promote the services they provide.

**Some of the referring physicians do not like to refer their patients to the health centers.**

## Opportunities for improvement

The existing manpower is one of the major concerns of the DOTS Center. During the two-week observation period, it was noted that at times only one person is manning the clinic because the others were involved in other activities. Additional personnel are necessary because of the increasing number of enrolled patients into the program.

Two medical technologists are not enough to do all the work that the DOTS Center demands for. The ideal ratio for one medical technologist to process and read the slides is 1 med tech for 20 slides. At present the medical technologist does more than 20 slides a day. Aside from having to read the slides, the medical technologist also has to do other laboratory tests such as PPD testing and sputum culture and sensitivity and recoding of the results. To save time for the medical technologist to bring the specimens to the 2<sup>nd</sup> floor for processing and reading, the TB lab facility

should be relocated to an adjacent room near the DOTS Center. Because of all this, the release of sputum AFB results is delayed which was not a problem before when there were fewer clients.

Another DOTS nurse is needed to man the clinic. It was observed that the DOTS nurse dispenses the drugs to the patient / treatment partner, fills out the enrollment forms, and gives the group discussion (health education) to the patient and treatment partner during enrollment. With added manpower, there is a higher possibility of spreading out the patients during the six working days of the clinic. This would not only make the facility be more accessible to some of the other clients but would also lessen the waiting time if there were fewer people seen in a single day.

In preparation for the PhilHealth claims, additional staff are needed to facilitate this.

**During the group lecture of the patients with the treatment partners during enrollment, it was observed that some of the patients are too sick to understand and remember what was being discussed. Also some of the very sick TB patients are in close contact with other people not afflicted with TB.**

**Dissemination of IEC materials would increase the awareness of the community regarding TB.**

Installing an air-conditioner would create a negative pressure that would ensure a unidirectional airflow in the DOTS center.

Setting-up a retractable shade in the waiting area will protect the patients from the heat and glare of the sun.

**An additional computer is needed to be used solely for data entry. There should a separate computer for other activities, such as research.**

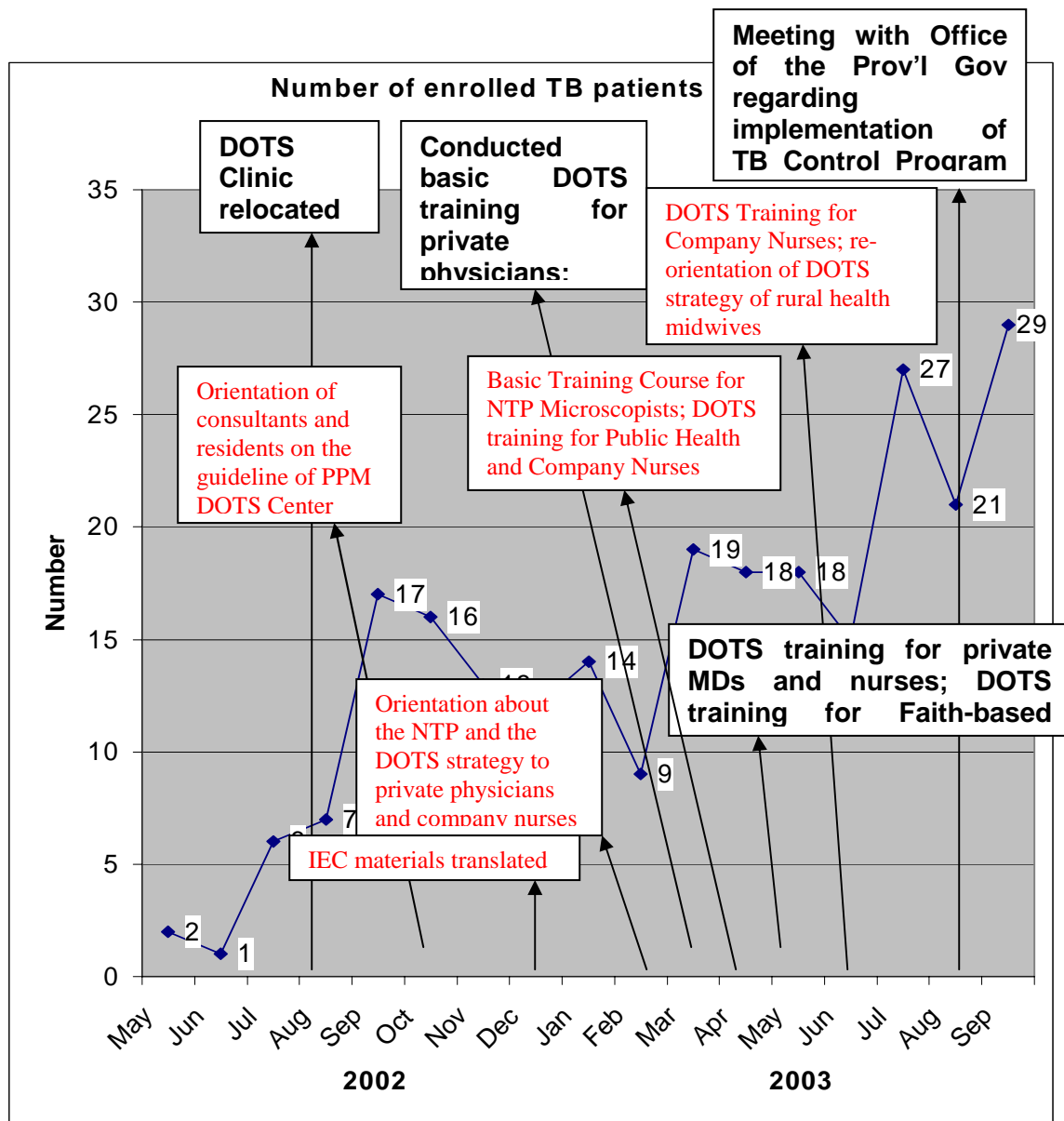


Figure 6. PPM DOTS Center activities and their possible contribution to the increase in the number of enrollees.

Although not measured, there seems to be an increase in the total number of patients being seen at the DOTS center after various interventions done by the DOTS Center.

During the month of October, there was an observed increase in the diagnostic tests being done from referrals from private practitioners after the orientation of consultants and residents on the guideline of PPM DOTS Center.

### Threats and limitations

The salary of some of the DOTS staff are taken from the CDC project. The grant will end a year from now on October 2004.

Capacity building of the staff is supported by World Vision with some funding coming from CIDA (Canadian International Development Authority)

The stock of anti-TB drugs should be monitored monthly since the number of patients being enrolled into the program is increasing (not 2 or 3 months monitoring).

Setting up of nearby DOTS Centers would compete with other clients for the DOTS Center to be viable.

It was brought up in the group discussion that compliance of the patient with DOTS would be a problem if anti-TB drugs are not provided for free to the patient.

## APPENDIX 1



APPENDIX 2

TB CASE MANAGEMENT KIT

# **UNILAB D.O.T.S. CENTER FOR WELLNESS AND GOOD HEALTH SITUATIONAL ANALYSIS: A CORPORATE SOCIAL RESPONSIBILITY MODEL**

## **A. Historical Background**

### PROFILE OF THE HEALTH FACILITY BASE

United Laboratories Inc is the largest pharmaceutical company in the Philippines, with over 400 brands of medications distributed throughout the country. Unilab is fully Filipino-owned and boasts of its achievements, nationally and internationally, in many areas of interest such as “Employer of the Year” and the like. It carries a long tradition of the “bayanihan” spirit and strongly support initiatives of community service.

### CONCEPTUALIZATION OF A PRIVATE DOTS CLINIC

In the year 1999, the UNILAB DOTS Center for Wellness and Good Health was established through the initiative of the Unilab Medical Education and Development (UMed). They approached Dr. Rodrigo Romulo, an Infectious Disease specialist and an advocate of DOTS in the private sector in the country, for his opinion and advice on the concept of a privately-run TB DOTS center. From his hands-on experience in setting up the first private DOTS Clinic at the University of Santo Tomas Hospital, Dr. Romulo furnished Unilab with guidelines on the mechanics of a TB DOTS clinic. Together with the marketing people of two divisions UNILAB, United American Pharmaceutical (UAP) and Medichem, the DOTS Center was established that same year attached to the Health First Clinic, the multi-specialist clinic for the UNILAB employees. It was envisioned to, first and foremost, serve the community; be a referral center for possible TB patients seen at Health First; and thirdly as marketing strategy for the two companies. UAP and Medichem carry several brands of anti-tuberculosis medications. Unilab provided the 1) physical structure of the Center; 2) salaries of 2 DOTS nurses and a project consultant; and 3) drugs from UAP and Medichem sold at 15-30% discount.

The first strategy employed to promote the DOTS clinic was to detail the information among the doctors in the area of Mandaluyong and Pasig through the medical representatives of the two companies. Active detailing with the physicians as well as distribution of IEC (posters) and posting of posters at the physicians’ clinics were done. Physicians were encouraged to refer TB suspects to the DOTS Center where anti-TB drugs were given at a 10-30% discount to the patients enrolled. A patient is eligible for enrolment to the DOTS clinic if he or she works or lives in the catchment areas specified by the project and has an AFB- positive smear and/or chest ray consistent with PTB. The initial year of the projects enrolled a total of 78 patients.

***IMPLEMENTATION AND PROGRESS THRU THE YEARS:***

The Unilab TB DOTS clinic was implemented successfully and continued with the same policies for three years. The table below summarizes number of patients enrolled per operational year and the patients' areas of residence.

Table 1. Number and place of residence of patients enrolled into the UNILAB DOTS Clinic 1999-July 2003.

<b>Areas of residence</b>	<b>Year 1 (Oct '99-Sept '00)</b>	<b>Year 2 (Oct '00-Sept '01)</b>	<b>Year 3 (Oct'01-Sept '02)</b>	<b>Year 4 (Oct '02-July '03)</b>	<b>Total n=188</b>
Pasig	23	22	14	10	69 (37%)
Mandaluyong	14	11	1	4	30 (16%)
Quezon City	8	2	7	4	21 (11%)
Manila	8	0	1	4	13 (7%)
Rizal	1	4	3	5	13 (7%)
Taguig	3	1	2	2	8
Pateros	5	0	1	1	7
Makati	2	2	1	1	6
San Juan	2	1	0	1	4
Kaloocan	3	1	0	0	4
Pasay	2	1	0	0	3
Cavite	1	0	1	1	3
Valenzuela	1	1	0	0	2
Navotas	1	0	0	0	1
Malabon	0	0	0	1	1
Muntinlupa	1	0	0	0	1
Paranaque	1	0	0	0	1
Las Pinas	1	0	0	0	1
<i>TOTAL</i>	<i>78</i>	<i>46</i>	<i>31</i>	<i>34</i>	<i>188</i>

***TRANSFORMATION FROM PURELY PRIVATE TO THE PRIVATE-PUBLIC MIX FRAMEWORK:***

Evaluation of the center performance in 2002 proved that the center was functioning as a true private DOTS. Financially though, the two UNILAB divisions who spearheaded the TB DOTS project started to feel the burden of financing the program. Management decided to transfer the handling of the operations of the DOTS Center solely the Medical Affairs Division of the company. It was during this time that Dr. Romulo through the Philippine Coalition Against Tuberculosis received a grant to develop public-private mix model for TB DOTS center and the UNILAB DOTS Center was included in the 5 PPM models representing what they term as the ***Corporate Social Responsibility Model.***

In the year 2002, the UNILAB DOTS Center participated in the effort of the Department of Health to enjoin the private sector in its fight against TB using the Private- Public Mix (PPM) model. On September 26,2002, UNILAB through its President and Chief Executive Officer, Mr. Carlos C. Ejercito, and the Department of Health through Secretary Dr. Manuel M. Dayrit, entered into a Public-Private Collaboration through a Memorandum of Agreement(MOA). The MOA stipulated that the center will support the TB Control Program of the DOH and all the practicing private physicians in the cities of Mandaluyong and Pasig through the implementation of DOTS in the Center. Specifically, the objectives were the following:

- To ensure compliance of TB patients with the standard treatment regimen by directly observing the ingestion of their medication at the Center
- To pursue TB patients who fail to report as scheduled at the Center in order to deliver their missed doses
- To monitor the responses and possible adverse reactions of the TB patients to treatment regimen
- To ensure the performance of sputum microscopy in the diagnosis and monitoring of responses to treatment
- To provide health education pertaining to TB to patients and their household contacts

The MOA also formalized the partnership and defined the roles of both sides: UNILAB will provide the space for DOTS Centers within its premises, the medical and nursing personnel to maintain and operate the Center, vehicle for follow-up of defaulters, use of the radiological facilities and assistance in setting up of possible satellite DOTS centers.

On the other hand, the DOH will be responsible for the capacity building of the Center staff with DOTS implementations and clinical microscopy through technical and logistic support, training, supervision and monitoring of center's performance; and the supply of anti-TB drugs for all patients that will be enrolled in the program by the Center.

Since the MOA through many more contributions have been added by both parties that have greatly helped shape the center to how it is currently functioning as a model DOTS Center now. The DOH has provided training for the Unilab staff both in the aspect of NTP DOTS( May 14-16, 2003) and the NTP microscopy training (December 2-11, 2003, RITM). DOH has donated a microscope and staining reagents and other additional microscopy needs to the center laboratory. Finally it also gave its endorsement to the Pasig City Health Medical Officer for the inclusion of Unilab in the validation process of smears done quarterly in government centers.

The continuing generous support of the leadership of Unilab through UMed through the years has provided office equipment such as computer, printer, fax machine, filing cabinets and related supplies; medicine cabinet for drugs and supplies storage; DOT needs like water dispenser, water, drinking cups, masks and gloves; microscopy needs such as stool, sputum collection panel; and transport expense for defaulter follow-up.

In March of this year, thru the initiatives of the DOTS physician, Dr. Paul Salandanan, the Center worked on a new advertising strategy to re-introduce the UNILAB DOTS Clinic. Pamphlets were distributed and banners were put up around the area of EDSA Central and other strategic areas such as the MRT station at the Shaw Blvd. This helped in the promotion of the center now within the DOH PPM Model.

The change into the PPM model formally began on October 2002. At the time of data collection on September 2003, the center has been able to enroll 44 patients already.

## **B. THE CURRENT TB DOTS CLINIC SYSTEMS OPERATIONS**

### **THE DOTS PROCESS: HOW UNILAB IMPLEMENTS DOTS**

The UNILAB DOTS Center adheres to all the NTP core policies and procedures. Its current operational protocol has been written by Dr. Imelda Quelapio, the DOTS Project Leader; Dr. Paul Salandanan, the DOTS physician and Ms Marissa Barbacena, the DOTS nurse. The *UNILAB DOTS CENTER REVISED PROTOCOL* is available at the site.

The most important aspects of the basic procedures of DOTS as practiced by the Unilab D.O.T.S. center are summarized as follows:

#### **CASE FINDING:**

- The UNILAB DOTS Center caters to all patients who walk-in or are referred by physicians around the area of Pasig and Mandaluyong and the Health First Clinic.
- The DOTS nurse is usually the first person a patient would see on initial consult to the center. The patient is interviewed for symptoms of TB (see Appendix B for definition of symptomatic TB).
- If on the first day the patient is assessed to be a probable case of TB, 3 specimens of sputum must be sent for microscopy.
- The patient is then asked to return in the next three days to the center with a fresh sputum sample and two more are collected to complete the three sputum requirement.
- The D.O.T.S. Center has a designated area for sputum collection which is located in the open-air terrace/balcony or at the landing area of the ramp leading up to the clinic.
- A divider has been purchased by the center in order to provide privacy to the patient while doing the sputum collection.
- Within three – seven days from submission, patients sputum AFB results become available. IF Sputum AFB are positive patients are invited to enroll to the D.O.T.S and listed in the NTP TB Register.
- The nature of DOTS is explained clearly and thoroughly before enrolled.

- The patient MUST SIGN written contract or “kasunduan” regarding agreement with protocol of the clinic.
- In the current year of 2003, the staff embarked on massive efforts to disseminate information regarding the Unilab D.O.T.S. among target physicians in the Pasig and Mandaluyong areas and potential patients. Poster and brochure that inform doctors of the services offered by the center were distributed. Well-designed and visible banners were placed in strategic locations where there was a lot of pedestrians and commuters such as the nearby EDSA Central Market and the Metro Rail Transit (MRT). Flyers were also distributed to individual commuters and jeepney drivers.
- Since the successful NTP Microscopy Training of the DOTS Center nurse and medical technologist at the Research Institute for Tropical Medicine (RITM), there was an observed improvement in the detection of smear-positive cases.

### **CASE HOLDING**

- Patients enrolled in the DOTS program follow the treatment regimen in the Comprehensive and Unified Policy for Tuberculosis Control in the Philippines.
- Treatment regimen starts once the contract/”kasunduan” is signed.
- Unlike in the previous years of UNILAB DOTS when patients paid for their anti-TB drugs at discounted prices, patients now get all their medications for TB for free.
- Directly observed therapy (DOT) is strictly implemented at the UNILAB D.O.T.S. The DOTS nurses are the treatment partners and directly observe the patients when they come regularly to the clinic. Under normal circumstances, patients do not leave the clinic with a pack of take-home medications.
- On the FIRST TWO WEEKS known as the intensive phase, the patient must return to the center DAILY for daily directly observed therapy (D.O.T.)
- After the two weeks, the follow-up schedule is changed to 3 times a week (MWF or TThS). Dosage for the entire week is computed and divided into 3 doses. On occasions like holidays and when patients go on vacation, the family member-treatment partner is instructed to remind the patient and directly observe the intake of his medications.
- Adverse drug reactions are watched out for among every patient and are properly managed either by the nurse or for complicated cases by the center physician.
- The nurse-treatment partner makes sure that the patient follows his schedules at the center. On times that the patient fails to show up at the center, patient as well as the family member is called up on the telephone and reminded. If the patient still does not show up, the roving nurse of the center visits the patient at his home using a motorcycle or the company vehicle.

- Graduation from the DOTS is an encouraged event and certification of completion can be obtained from the center upon the request of the patient for employment or other purposes.

### **RECORDING AND REPORTING**

- There are 12 forms that the Center has to be accomplished by the DOTS nurse at the center. These include forms of the center and forms for the NTP from the DOH.
  - ✓ NTP Laboratory Register
  - ✓ NTP Laboratory Request Form
  - ✓ NTP TB Register
  - ✓ TB Symptomatics Masterlist
  - ✓ Defaulter Tracing Form
  - ✓ Kasunduan
  - ✓ Treatment Card
  - ✓ Drug Inventory Form
  - ✓ Monitoring Form
  - ✓ Quarterly Report on Laboratory Activities
  - ✓ Quarterly Report on New Cases and Relapses of Tb
  - ✓ Drug Inventory and Requirement
  - ✓ Quarterly Report on Program Management - NTP
- There is a good record keeping of the cases seen at the center. The DOH NTP forms (Case Forms, ledgers, and register) are all available and are being filled out by the nurses. Monthly, quarterly reports and updates are available as hard and soft copies.
- Monthly Center Census is done as well as Quarterly and Annual reports.
- NTP Reports are submitted to the Mandaluyong City Health Office while Slides are submitted for microscopy validation at Pasig City Health Office.
- Monthly and quarterly reports and updates are available as hard copies and in electronic form.
- Other communications letters are also being done like communication for the referring physicians regarding receipt of the referral, progress of the treatment and its completion.

### **Logistic Management**

- The MOA between Unilab and the DOH on the partnership for TB DOTS formalized the DOH as main source of anti-TB drug supply for all the patients enrolled to the D.O.T.S. Center.

### **Supervision**

- The Unilab DOTS has the advantage of continuous and close technical supervision by an experienced DOTS project leader/consultant, Dr. Quelapio.
- The quality assurance of the sputum microscopy of the center has been strengthened recently by the Unilab Center request to undergo regular validation of AFB smears by the official Validation Team of the Pasig City Health Office

through the Medical TB Coordinator, Dr. Soronte Domingo. The NTP team has visited the D.O.T.S.in March 2003.

- The slides of the first quarter of 2003 were validated with a 100% agreement indicating 0 false positive and 0 false negative results.

**ON SITE: DOTS AS OBSERVED**

September 15 – 28, 2003

Preparation of the drugs per patient is done every morning by the center nurse-treatment partners. Each card of the patient scheduled for follow-up on that particular day is obtained and the dosage checked. Then, the drugs are taken from the patient bag of drugs and placed in individual plastic medication cups. Once the patient arrives, the cup containing the medications is given, the patient gets a plastic cup of water from the water dispenser at the waiting room area of the center and takes his medications. At times, the nurse or the security guard assist the patient in giving the cup of water to the patients. A short conversation may ensue depending whether the patient has other matters to consult or just for a short talk with the center staff. Thus, the entire DOT transaction may last from less than 2 minutes or up to 5 minutes on the average.

***TREATMENT OUTCOMES and STATISTICS of the D.O.T.S. CENTER***

**PRE-PPM DOTS Statistics**

When the DOTS Center was transforming itself from a purely private corporate model to a PPM Model, the staff summarized its service statistics from October 1999 to January 2003 as follows:

Table 1. Statistics of UNILAB DOTS CLINIC of Patients Served 1999-2003

<b>Total Referred Patient :</b>	<b>199</b>
Private :	132( 66%)
Government :	67 (34%)
<b>Total Enrolled Patient :</b>	<b>158</b>
Private :	106 (67%)
Government :	52 (33%)



<b>Patients according to Treatment Category:</b>	
Category I (2HRZE/4HR) :	72 (45%)
Category II (2HRZES/1HRZE/5HRE) :	10 (6%)
Category III (2HRZ/4HR) :	76 (48%)
<b>Patients according to Treatment Outcome : (n=153)</b>	
<b>Cure :</b>	<b>2 (1%)</b>
<b>Treatment Completed :</b>	<b>94(61%)</b>
<b>Treatment Failure :</b>	<b>0</b>
<b>Transferred Out :</b>	<b>15(10%)</b>
<b>Lost :</b>	<b>42 (27%)</b>
<b>Died :</b>	<b>0</b>
<i>Ongoing Treatment : 5</i>	

**PPM DOTS STATISTICS January 2003 onwards**

Since the DOTS Center adopted the PPM Model in January 2003, a total of 44 patients have been enrolled. Of the 44 enrollees, 31 cases are still ongoing.

The characteristics of the patients enrolled as they have been reported in the masterlist of TB symptomatics are seen in Table 2. There were significantly more male (73%) than females (27%). The bulk of patients in both males and females came from the 15-34 years old which together comprised 59% of all enrollees. The age distribution of the symptomatics was mostly over a younger age range with very few patients from the groups 55 and above.

**Table 2. Frequency Distribution of TB Symptomatics by Age and Sex.**

Age Group	Male (n= 32)		Female (n=12)		Total (N=44)	
	N	%	n	%	N	%
0-14	-	-	-	-	-	-
15-24	7	22	1	8	8	18
25-34	11	34	7	58	18	41
35-44	4	13	-	-	4	9
45-54	7	22	3	25	10	23
55-64	2	6	1	8	3	7
65 and above	1	3	-	-	1	2
<b>Total</b>	<b>32</b>	<b>73%</b>	<b>12</b>	<b>27%</b>	<b>44</b>	<b>100</b>

All patients were cases of Pulmonary TB. No case of extrapulmonary TB has been referred even during the DOTS prior to the PPM.

**Table 3. Frequency Distribution of Disease Classification of TB**

Disease	N	%
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<b>Classification</b>		
Pulmonary TB	44	100%
Extra-pulmonary TB	0	0
<b>Total</b>	<b>44</b>	<b>100%</b>

According to the previous history of anti-TB treatment , almost all the patients were assessed to be *NEW PATIENTS* with 30% of them sputum smear positive. These are seen in Table 4. The type of treatment category the patient was assigned to as per NTP procedures are summarized in Table 5.

**Table 4. Frequency Distribution of TB Patients According to NTP Classification.**

<b>Type of Patient</b>	<b>N</b>	<b>%</b>
New: Smear (+)	13	30
Smear (-)	22	50
Relapse	-	-
Transfer in	-	-
Return after default	3	7
Failure	-	-
Retreatment	-	-
Others	6	14
<b>Total</b>	<b>44</b>	<b>100</b>

**Table 5. Frequency Distribution of Enrolled TB Patients According to Treatment Category.**

<b>Treatment Category</b>	<b>N</b>	<b>%</b>
Category I	22	50
Category II	9	20
Category III	13	30
<b>Total</b>	<b>44</b>	<b>100%</b>

### **PRE PPM vs PPM TRENDS**

This number of enrollees over a period of less than 9 months is a marked Case Detection improvement from the trend of the previous years when the Center was a fully-private project. Figure A shows the trends over time of number of total enrolled TB patients, total successful TB cure, and lost patients covering time duration of before and after the private-public mix.

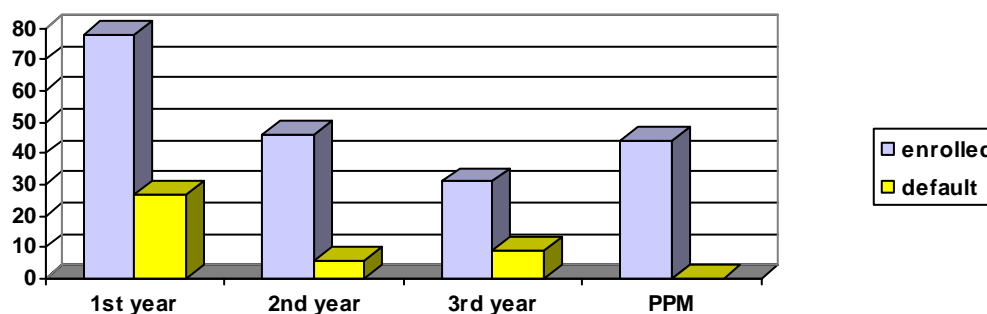


Figure A. Trend of Total Enrolled, Total Successful Treatment and Total Default Per Year 1999-2003, Unilab DOTS Center

Although it is perhaps too early to make any solid conclusions on treatment outcome rates between the period before the PPM DOTS (October 1999 - January 2003) and the current rates now after the adoption of PPM DOTS setting (January 2003-August 2003), the available summary statistics are as follows:

Table 6 . Comparison of Summary Statistics between Two Periods of DOTS, Unilab DOTS Center (data extracted from provided summary statistics of clinic)

Treatment Outcome	Oct99-Jan03 n(% of total)	Jan03-Aug03 n(% of total)
<b>CURE</b>	<b>2(1%)</b>	<b>7(54%)</b>
TREATMENT COMPLETED	94(61%)	1(8%)
TREATMENT FAILURE	0	0
TRANSFERRED OUT	15(10%)	3(23%)
<b>DEFAULT</b>	<b>42(27%)</b>	<b>0</b>
DIED	0	0
<i>Total with Outcome</i>	153	13
Patients Still Ongoing with Rx	5	31

The change that is very evident at a glance is the leap in cure rate (from 1% to 54%) and the dive in default rate from 27% to 0.

On August 21, 2003 the Progress Report of the Unilab DOTS Center submitted to the PhilCat identified several factors that have contributed to the improved performance of the center in terms of case detection outcomes, case holding outcomes and quality of services offered. These factors are:

- ❖ *The process to obtain sputum specimens for microscopy has been made simpler for the patients.* Prior to the PPM, many patients were sent back to their previous referring

physicians when they did not have sputum results yet. With the PPM, the clinic laboratory service to do microscopy has been strengthened significantly with the training of D.O.T.S. staff and now the clinic can accommodate and process the number of specimens brought in by patients.

The clinic also very recently dedicated one area for sputum collection. Patients are encouraged to expectorate at the clinic area. More patients are able to comply with the requirement of submitting three sputum specimens.

- ❖ ***The quality of sputum microscopy has markedly improved in proficiency.***  
The RITM training has tremendously increased the capability and the proficiency of the D.O.T.S. nurse and medical technologist to perform quality sputum microscopy. Whereas prior to the RITM training almost all (99%) of patients with sputum specimen were smear negative, the current smear positivity rate is now 23% of symptomatics.
- ❖ ***The medications are free.*** A major plus in the success of any health problem with a magnitude such as the TB problem.
- ❖ ***The sputum microscopy cost is minimal.*** The cost is not prohibitive and actually does not discourage follow-up sputum tests to document better the treatment outcome.
- ❖ ***The Center has joined the networking and referral system of other DOTS centers.*** The staff is not pressured anymore to accept patients from provinces and other locations. Instead they now have the option to refer patients to other DOTS centers. Default has been minimized.

## **C. THE PHYSICAL DOTS INFRASTRUCTURE: The D.O.T.S. Center**

### ***BASIC INFORMATION***

<b>NAME:</b>	<b>UNILAB D.O.T.S. Center</b>
Address:	2 <sup>nd</sup> floor Greenfield Development Corporation Building 750 Shaw Blvd corn EDSA Central Ave., Mandaluyong City
Phone:	634-5714 local 277
Clinic Hours	Monday to Friday 9AM-6PM Saturday 8AM-12NN

### ***LOCATION***

Located at the heart of the commercial area of Mandaluyong, the UNILAB DOTS Center is housed within the Health First Clinic situated at Greenfield Development Corporation Building, 750 Shaw Blvd., corner EDSA Central Avenue, Mandaluyong City. The DOTS Center is located at the 2<sup>nd</sup> floor at the back and has its own entrance at the side of the building through the ramp. This allows a form of privacy to patients consulting and following-up at the center knowing the stigma that the TB carries with it. This also separates patients consulting at the Health First General clinic from those consulting at the DOTS Center thus preventing possible spread of the TB bacilli.

## **ACCESSIBILITY**

The center is open six days of the week from Monday to Saturday, 9am – 6pm during Mondays to Fridays and from 8am – 12pm on Saturdays. The center is closed on Sundays and holidays. The center is very accessible since it is located at the EDSA Central, a market and commercial complex. It is 20 meters away from the Jeepney Park jeepney and FX stations. It is also around 5 minutes walk from the city train station. It shares parking area with the Health First Clinic.

The Center has its own center phone (landline) from the Health First Clinic trunkline. The staff (the nurses/treatment partners), however, can also be reached by the patients through their own cellular phones.



## **INFRASTRUCTURE AND EQUIPMENT:**

### **Physical Aspects Building and Clinic Area**

The Center has a floor area of 24.5 sq. m. (16.5 sq m for the office and the restroom and 8 sq.m. for the waiting area. The waiting area or the hall has 4 chairs to accommodate the patients and a water dispenser. The entrance of the center is the ramp at the side of the

building. At the midway landing area of the ramp, about 10 meters from the center entrance, is designated as the open-air sputum collection area. A newly purchased 2-panel curtain divider is used to provide some privacy to the patient while collecting their sputum.

Lighting is adequate and allows easy reading of posters, and other IEC materials in the center.

There is adequate water supply and equipment for hand washing. Sink is in the restroom, soap bars and liquid soap is available and water supply is uninterrupted. The restroom doubles as the area where smears are prepared prior to microscopy.

### **Waste Disposal**

Garbage containers are covered. However, no color-coding is observed but there are identified bins for hazardous or infectious wastes and these are not mixed with other waste such as paper or plastics. Hazardous wastes are collected by a private company, which specializes in medical wastes. These are reportedly autoclaved before being disposed off. The DOTS center waste is collected with the adjacent UNILAB laboratory wastes.

DOTS Center facility is generally clean inside and outside as a janitor and security services are provided to the center by Health First do regular upkeep of the facility.

### **Privacy**

There is adequate auditory privacy in the center, however visual privacy is not observed as provider-patient interaction can be seen by people in the waiting area. Only a glass door separates the waiting area from the center room.

## **TB-RELATED DRUGS, EQUIPMENT AND SUPPLIES INVENTORY**

### **Anti-TB Drugs**

The following drugs are available in the clinic and given free to the patients: Type 1 Blister Pack (HRZ), Blister Pack Type II (HR), Ethambutol, and Streptomycin. These are all coming from the DOH. There are enough supplies to complete treatment for currently employed patients. Authorized stock level is maintained and first expiry-first out policy implemented. Storage facilities of drugs are clean, and protected from rain, sun, and floodwater. At times however, the blinds are not enough to shade the meds from sun (esp. during afternoon).

### **TB-Related Supplies**

Microscope, masks, slides, cover slips, sputum cups, reagents for smear, applicator sticks, disposable needles and syringes as well sharps container are all-available at the center.

**N95 respirator masks are available for use of the Center staff. The use of masks by the health providers is a practice unique to the Unilab DOTS Center.**

Among the furniture present at the Center are the following: a stand fan, exhaust fan, cabinet, tables, drinking water dispenser and plastic cups/glasses, and cleaning supplies. Noticeably absent in the center are stethoscope (only brought by doctors), blood pressure apparatus, examination table and a thermometer. A weighing scale is however, present.

## D. THE DOTS HUMAN RESOURCE SET-UP: The D.O.T.S. Health Providers

The UNILAB DOTS Center is directly under the Office of the Vice-President for Medical Affairs, Dr. Cecilia Isaac. Operationally, it has 1 TB Project Consultant (Dr. Ma. Imelda Quelapio), TB DOTS Physician (Dr. Paul P. Salandanan), chief center nurse (Ms. Marissa Barcelona) and a roving nurse (Mr. Jerry Tayag). See Figure B.

**UNILAB DOTS CENTER**  
2/F GDC BLDG., 750 Shaw Blvd., Mandaluyong City  
Tel # 6345714 loc. 277

### ORGANIZATIONAL CHART

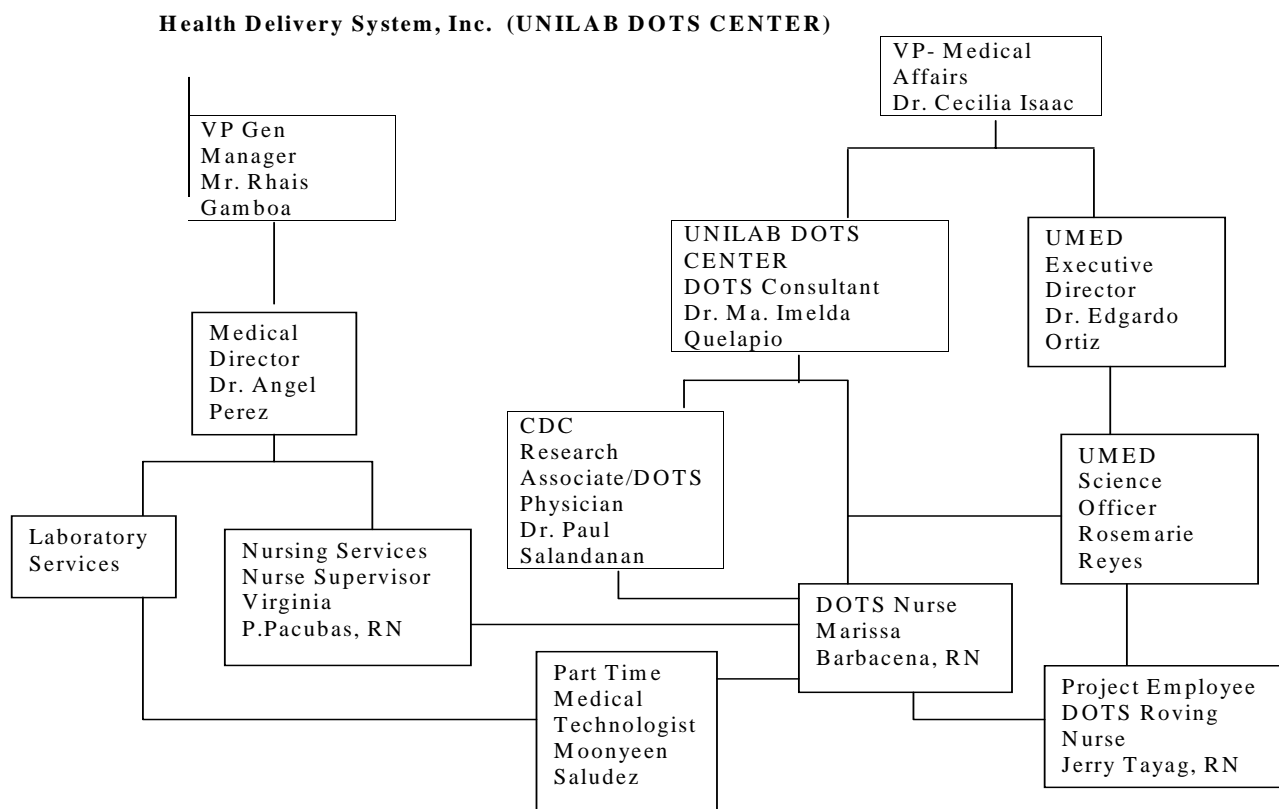


Figure B . Organizational Structure UNILAB D.O.T.S. Center 2003

**DOTS Project Consultant: Dr. Imelda Quelapio**

A. Role in DOTS Center

- Provide initial assessment
- Provide health education
- Gives advise on TB practices
- follows up defaulters
- quality assurance
- updates PhilCAT
- reviews records
- ensures that DOTS procedures are enforced
- refers patients to other DOTS facilities
- ensures sufficient supply of medicines

B. Training Received for DOTS Work

Dr. Quelapio trained as a specialist in Infectious Diseases and finished in 1998. She joined the group of Dr. Tupasi at the Tropical Foundation in Makati Medical Center to handle the first TB DOTS Plus clinic to handle MDRTB cases

C. Knowledge of DOTS

Very knowledgeable on all aspects of TB diagnosis, management and prevention. Extremely familiar with Familiar with the **Manual of Procedures for the National Tuberculosis Control Program** and the **Comprehensive and Unified Policy on Tuberculosis**  
Have attended various DOTS training since 1999 by the NTP and PhilCAT

D. Role in Case Detection and Initiation of Treatment

- Screen and assess patients suspected to have TB
- Evaluate TB patients
- Request for sputum AFB smear
- Refer diagnosed TB cases to the physician or nurse for clinical evaluation and initiation of treatment
- Maintain and update the treatment cards/TB symptomatics masterlist/TB symptomatics target client list
- Monitor and supervise the procedures for case-finding activities

E. Role in Case Holding

- Examine TB patients
- Prescribe appropriate treatment regimen
- Assign and supervise a treatment partner for patients who will undergo DOTS
- Implement DOT
- Monitor patient's response to drugs (e.g., adverse effects, weight gain, symptoms)
- Maintain and update the TB registry
- Prepare and submit reports to the facility administrator/ physician
- Prepare and submit reports to the DOH/NTP



#### F. Role in Health Education

- Conduct one-on-one counseling of patients
- Conduct TB DOTS training of health providers
- Distribute IEC materials to patients and treatment partners
- Sends staff/nurses for training and accreditation
- Coordinates with other institutions for quality assurance (TB Diagnostic Committee, DOH)

#### G. Performance Evaluation – None

#### H. Suggestions for Improvement

- steps taken to ensure that a TB patient complies with treatment through DOTS
  - Explain to the patient the importance of treatment compliance
  - Administer the patient's drugs daily with the treatment partner making sure that the patient swallows the drugs
  - Ensure that a family member supervises the patient's intake of drugs on Saturdays, Sundays, and holidays when the clinic is closed
  - Regularly motivate the TB patient to continue treatment by emphasizing key messages
  - Immediately exert effort to retrieve a patient if he/she fails to report on the day he/she is expected
  - Monitor response to treatment through follow-up sputum examination
  - Makes sure that the patient is from the catchment area (Pasig-Mandaluyong)
  - Immediate attention given to patients with adverse reactions to TB meds
  - Makes sure to get the patients' contact number, treatment partner, contact person and sketch of the patients' residence
- handling defaulter patients
  - Re-educate patient on the importance of compliance to treatment
  - Refer patient to the physician for re-evaluation and re-treatment
  - Get contact number
  - Defaulters are followed-up by the roving nurse
- monitoring the response to treatment
  - Follow-up sputum examination
- the schedule of the first sputum smear follow-up examination for a Category I
  - Towards the end of the 2<sup>nd</sup> month

#### *ROLE IN TREATMENT OUTCOME*

- records are kept in the clinic
- reporting is done quarterly

- submitted to the Hospital administrator, UNILAB Main Office, City Health Office and DOH

#### SUPERVISION

- immediate supervisor : Dr. Isaac - UNILAB Vice-President for Medical Affairs

#### PERFORMANCE EVALUATION

There is no system for evaluating staff performance

#### QUALITY IMPROVEMENT:

- Expansion of clinic facility
- Better infection control measures
- Increase staff/ploy a medical technologist

#### INSTITUTIONAL COMMITMENT

- Annual Budget
  - From the (FC mother organization)
    - the respondent is not aware of the exact amount /budget allocated to the clinic
  - other sources of budget for this facility
    - patient's fee : P25.00/ sputum exam for non-indigent patients
    - CDC : Funding/monetary support
    - government (DOH) : free medicines, microscope
- specific items supported by the annual budget/resources from the mother organization:
  - Supplies and materials
  - Salary of clinic staff
  - Training
  - IEC materials
  - TB educational campaign
  - Maintenance and operating expenses of clinic
- other types of support the mother organization provide
  - Space
  - Furniture
  - Personnel
  - Use of equipment

#### **DOTS Physician: Dr. Paul Salandanan**

A. Most Important Role in DOTS Center

Dr. Salandanan is responsible for providing initial assessment, providing health education and ensure that DOTS procedures are enforced.

B. Training Received for DOTS Work

Dr. Salandanan is an Infectious Diseases specialist. He has specially undergone several training workshops for this current appointment including Basic TB DOTS training (May 2003), Certified TB DOTS (May 2003).

C. Knowledge of DOTS

Very familiar with TB and with the Manual of Procedures for the National Tuberculosis Control Program

D. Role in Case Detection and Initiation of Treatment

- Screens and asses patients suspected to have TB
- Evaluate TB patients
- Maintains and updates the treatment cards/TB symptomatic masterlist/TB symptomatic target client list
- Monitor and supervise the procedures for case finding activities
- Strategize to promote the clinic to the public

E. Role in Case Holding

- Examine TB patients
- Prescribe appropriate treatment regimens
- Manage adverse reactions
- Implement DOT
- Monitor patient's response to drugs
- Maintain and update the TB registry
- Monitor and supervise providers to ensure proper implementation of DOTS

F. Role in Treatment Outcome

- Assess and classify treatment outcomes

G. Role in Record Keeping

- Maintains and updates TB symptomatic masterlist/ TB symptomatic target client list, TB registry

H. Supervision

- Immediate supervisor is Dr. Isaac.

I. Performance Evaluation

There is a system for evaluation ie attendance, quality of microscopy

J. Suggestions for Improvement

- Expansion of clinic space
- Addition of microscopy room
- Better infection control measures
- Increase staff ie medical technologist



### **DOTS Nurse : Marissa Barbacena**

#### **A. Most Important Role in DOTS Center**

Ms Barbacena is the longest player in the DOTS program of Unilab and is most knowledgeable of the “ins and outs” of the program. She has been with the center since its inception in 1999. Initially functioning just as a DOTS nurse, she now has multi-tasks of DOTS nurse, processor and reader of sputum smears, and treatment partner to many patients.

#### **B. Training Received for DOTS Work**

Ms Barbacena is a registered nurse, graduated BSN in 1991. Her training on DOTS has began as early as 1999 under Dr. Rod Romulo. She continues to attend DOTS Training seminars and has recently taken part in the PhilCAT DOTS training. She also underwent the NTP Microscopy training at the RITM last December 2002.

#### **C. Knowledge of DOTS**

She is very knowledgeable on TB and DOTS.

#### **D. Role in Case Detection and Initiation of Treatment**

- Screen and assess patients suspected to have TB
- Evaluate TB patients
- Requests for sputum AFB smear
- Collect sputum specimens for microscopy
- Supervises proper collection of sputum
- Refers diagnosed TB cases to physician
- Maintains and updates treatment cards/TB symptomatics masterlist

#### **E. Role in Case Holding**

- Prescribe appropriate treatment regimen
- Manage adverse drug reaction
- Assign and supervise a treatment partner for patients who will undergo DOTS
- Implement DOT
- Monitor patients response to drugs
- Maintains and update the TB registry

- Prepare and submit reports to the facility administrator
- Monitor and supervise co-nurse to ensure proper implementation of DOT
- Prepare and submit report to DOH/NTP

F. Role in Performed Microscopy

- Do sputum smear examination for diagnosis and follow-up
- Submit results to the physician
- Maintain and update TB registry
- Prepare quarterly report on laboratory activities and submit to facility administrator

G. Role in Drug Supply

- Facilitate the requisition and distribution of drugs and other supplies
- Prepare and submit the quarterly report on drug inventory and requirements
- Ensure availability of drugs at all times

H. Supervision

Her immediate supervisor is Dr. Quelapio.

I. Performance Evaluation

A merit rating by the Human Resources Section of the facility done twice a year

J. Suggestions for Improvement

- Wider space with a separate room for sputum smearing
- Wider waiting area
- UV light or upgraded disinfection facilities
- Complete laboratory facilities ie staining rack
- Full, easy and accessible computerization of files/data with internet connection
- Communication materials dedicated to the clinic like cellular phones for following up patients. Currently these communications are done from personal phones

Being the chief DOTS Nurse, Ms Barbacena is clinic-based . The roving nurse thru Jerry Tayag does defaulter tracing through home visits as well as other center functions. The center-based nurse is also a trained microscopist and does AFB smears of the patients of the center. These two nurses are the treatment partners for all the patients seen at the center.

***Diagnostic Committee***

There is TB Diagnostic Committee: two Infectious Disease specialists, one Radiologist and one Pulmonologist. This committee is consulted for treatment decision with AFB Smear Negative cases and other diagnostic dilemma cases seen at the center.

## **E. THE PATIENTS SERVED THRU UNILAB D.O.T.S.**

Twenty-four patients of the 31 patients currently being treated as TB thru DOTS were interviewed. All except one were follow-up visits. The purpose of the visit is to be directly observed by one of the DOTS nurses while taking their medication at the center.

The Disease Category is spread out unevenly across the three groups but largest (54%) in Category I. All are cases of Pulmonary TB. The patients were in varying months of treatment. The mean age was 37.4 years with an age range of 23 – 61 years old. The full transcription and tally of the responses to the questionnaire can be seen in Appendix X. Interestingly 20 patients of the 24 interviewed admitted that there was health center also offering TB DOTS closer to their homes than Unilab is but they still prefer to be treated in Unilab. The reasons for this preference is so varied but would fall into one of these: Better service in Unilab, drugs for TB are free and reliably available, and health providers are updated in health information.

### ***Visit Experience***

All patients (100%) reported that they were able to get the service they came in for during that particular visit. They all felt that the amount of time spent with them was just right. Four patients claimed to have had concerns which they were able to express during the visit. The response of the provider was appropriate in all 4 cases. Only three patients had a physical examination during that particular visit and the patient was satisfied with the explanation of the examination to him or her as a patient.

There was 0 waiting time for 20 of the 24 (83%). The longest time a patient waited was 5 minutes.

### ***Accessibility of Clinic***

All patients agreed that the Unilab DOTS was convenient for them. Transportation takes about 33 minutes average from home/work to the facility.

All felt the clinic days which are Monday to Saturday are reasonable and convenient. Only 3 of the 24 found the current clinic hours not very convenient. When asked what would be more acceptable to them the answers were to extend the closing from 6pm to 7pm and one patient wished the clinic was opened 24 hours a day.

### ***Knowledge of TB***

While knowledge on infectiousness of TB and that it is curable is understood almost universally (96-100%), there are still many misconceptions on manner of transmission.

Reasons given by respondent how you may get TB include exposure to paint, excessive perspiration, exhaustion, smoke and dust, sharing food and utensils. “pasma” or “binat” They knew that cure is possible with regular intake of drugs and complications that occur if treatment discontinued.

Patients were also aware that there are possible adverse effects from the drugs and know what these are. Finally they all knew that follow-up sputum examination were necessary.

### ***Privacy and Confidentiality***

All respondents felt there was enough privacy during the visit. The patients felt that their personal information are kept confidential.

### ***Clarity of Communication of Provider – Patient***

All patients felt that the health providers talked to them in a manner that was easy to understand.

### ***IEC Materials***

Almost all patients (22 of 24 or 92%) recall receiving IEC materials since they started with DOTS. These were in the form of brochures, pamphlet and posters, occasionally comics. These

were on TB and DOTS. Those who received felt the IECs were helpful because the materials were informative.. They were given on the first month of treatment.

#### ***Cost***

The cost spent by the DOTS patients are minimal. Transportation cost ranged from none to P41 with an average of P15.20.

#### ***Follow-up Reminders***

All patients were reminded of their next visit which was two days away.

#### ***Suggestions for Improvement***

- Opening time earlier
- Bigger space to accommodate more patients
- Separate laboratory and not use the comfort room space.

## **F. DOTS PARTNERS: TREATMENT PARTNERS**

The implementation of the DOT component of DOTS in Unilab is uniquely ideal. Patients are asked to return to the clinic daily for the first two weeks and then thrice weekly thereafter. They are to take their medications in the clinic under the supervision of the TB provider (usually the nurses). With this set-up the nurses are essentially the treatment partners except on the occasional holidays when the Center is not open or the patient is unable to go to the Center..

The DOTS nurses are the ones who choose the treatment partners of their patients. During the first visit they would talk to whoever accompanied the patient to the clinic and inquire who would be the most likely person at home who would be physically there to oversee the patient take his or her medications. They would also ask the opinion of the patient regarding his preferred treatment partner.

During holidays and weekends or whenever the patient cannot come for the DOT, the nurses would give the patient a monitoring sheet and a plastic containing the medications needed for the particular day/days. The patient then returns the treatment sheet on his or her follow-up.

On a focused group discussion with three treatment partners who were family members and the two DOTS nurses, the following information were obtained:

#### ***Role as Treatment Partner***

All three family members knew that their tasks were to remind to take, observe that they are taking the medications and finally document the activity by signing a monitoring sheet. The two nurses expressed their realization that for most part because of the way the clinic insists on doing the DOT in the D.O.T.S they are the treatment partners for these patients. The longest time they will allow patients to bring home medications is 5 days during the holidays.

#### ***Training to be a Treatment Partner***

None yet

#### ***Choice of Treatment Partner***

According to the DOTS nurses they choose family members because they have seen them to be good TPs in the past with good compliance and commitment. Barangay health workers were used in the past but they tend to be noncompliers later and patients default..

***Incentives/Strategies to increase compliance to DOTS***

Responses included: the “Kasunduan” form, a friendly and approachable staff, committed and dedicated workforce, communication like texting for reminders to follow-up

The family members felt their patients were motivated to finish treatment because other family members are also affected by the TB disease already.

***Incentives for Compliant Patients(Positive Reward)***

Certification that treatment is completed and that they are cured is something appreciated.

The center is planning on giving gimmicks such as T-shirts for graduate patients and involving them in seminars so they will become advocates for DOTS

***Handling of Defaulters***

Patients are contacted by cellphones. If the patient still does not show up, the roving nurse visits the patient at home and determines reasons for absence from clinic. If geographic locatin is the limitation, the patient is referred to another DOTS center to continue his or her medication closer to home.

***Satisfaction from TP Role***

Both nurses said they enjoy the work and get satisfaction from helping others.

## **G. REFERRING PHYSICIANS**

The referring physicians to the UNILAB DOTS Center usually hold clinics or live within or near the catchment areas. Information about the center usually came from the active detailing of the center during its initial years of operations and the promotional campaign instituted early this year when the center became a PPM model. Patients are referred to the Center to give them a choice whether to go to the Health Center, a private DOTS or remain a patient of the physician, and avail of discounted drugs at the UNILAB DOTS Center. Also if patients turns out to be AFB negative, they immediately are referred to the UNILAB DOTS Center for management.

## **H. SWOT (Strengths,Weaknesses,Opportunities &Threats)ANALYSIS**

This challenging task of collecting information, summarizing and analyzing the operations of the UNILAB TB DOTS Center was independently performed by researchers who had no financial, academic or personal stakes in the continued performance of the program.

The final report is descriptive in nature and predominantly qualitative in character. No conclusions could be drawn from the 8-months experience under the PPM DOTS Framework alone. However the documentation of the continuous struggle of the TB DOTS team to keep on improving its performance and its efficacy in coming closer to the mission, vision and goal of the



NTP show us many lessons learned and affirms every physician’s commitment that with best practice comes improved if not best outcomes. The strength of this situational analysis is the opportunity to explore various interpretations and possibilities of DOTS in the community within the setting of a Corporate Responsibility Model to make it more patient-centered, more financially viable, and more efficient in meeting the target treatment goals of the program.

PPM pilot projects such as the Unilab D.O.T.S. should be evaluated in terms of health outcomes, cost-effectiveness, equity and quality of care having the five components of the DOTS as the framework of analysis.

***Comparison of the Recommended WHO DOTS Framework and the Current UNILAB TB DOTS Program***

<b>Components of the DOTS</b>	<b>Recommended WHO Framework</b>	<b>UNILAB TB DOTS Framework</b>
Political commitment	DOTS incorporated into the national health system	Memorandum of Agreement between the Sec Dayrit (DOH) and CEO Mr. Ejercito (UnilaB) adopting the PPM collaborative framework each with responsibilities to fulfill in the TB DOTS Center
Quality sputum AFB microscopy	Access to quality-assured sputum microscopy for case detection among persons presenting with symptoms in health services	<ol style="list-style-type: none"> <li>1. The Center is open to all patients who are either referred or self-reports symptoms of symptomatic TB.</li> <li>2. Sputum collection is started within the facility on 1<sup>st</sup> visit.</li> <li>3. Three specimens of sputum are required for diagnosis.</li> <li>4. Two medical technologists trained on AFB microscopy</li> <li>5. Equipment and materials sufficient for microscopy.</li> <li>6. Significant rise in sputum positive results since NTP training of staff on microscopy</li> </ol>
Standardized treatment regimen, including DOT	Standardized short-course chemotherapy regimens of 6-8 months, for smear positive cases, with DOT during the intensive phase for all sputum positive cases, the continuation phase of rifampicin-containing regimens and the whole re-treatment regimens	<ol style="list-style-type: none"> <li>1. Client, treatment partner and DOTS physician enter a “kasunduan” before enrolment to DOTS program</li> <li>2. Rifampicin-based short course chemotherapy</li> <li>3. DOT strictly supervised by clinic nurse daily for first two weeks then 3x/week next months</li> <li>4. All meds are to be taken in the clinic</li> <li>5. Treatment partner to monitor patient’s drug intake only during holidays</li> </ol>

		6. Default rate 0 since PPM
Regular supply of anti-TB medications	Uninterrupted supply of quality –assured drugs with reliable drug procurement and distribution systems	1. Drug supply from DOH free of charge 2. MOA with DOH with explicit drug procurement system
Standardized recording and reporting	Recording and reporting system enabling outcome assessment of each patient and assessment of overall program performance	1. Well implemented 2. Records updated 3. Reports submitted to NTP 4. Data available in hard copies and electronic file

## **STRENGTHS**

1. Committed DOTS nurse.
2. Supportive corporate leadership.
3. Well chosen technical people to be in DOTS staff
4. Strong political will within the DOTS staff to achieve targeted cure rates by strict implementation of DOTS procedures
5. Markedly improved proficiency in microscopy skills backed by NTP validation
6. Medications available for free
7. Location of clinic strategic in area.
8. Referral system in place to and from center
9. The center is involved with activities to enjoin private/some public providers to refer to DOTS thru information campaign
10. The good record keeping allows easy access of data; follow trends.
11. Infection control precautions observed.

## **WEAKNESSES**

1. Space becoming smaller with increasing patient load.
2. Comfort room doubling as smearing/staining room.
3. Possibility of direct sun exposure of anti-TB medications in present cabinet space.
4. Three times per week dose lead to increase number of tablets per intake – sometimes more difficult for some patients.
5. Current sputum collection acceptable but not yet ideal/in public view.

## **OPPORTUNITIES**

1. Continuing medical education of private physicians within the catchment area on TB DOTS
2. Academic detailing of TB DOTS to potential referring physicians thru the machinery of the pharmaceutical company

## **THREATS**

1. Occupational hazard despite all precautions.
2. No Patient choices other than to comply to DOTS
3. Physician autonomy may be an issue.

## **Situation Analysis of PPM – TB DOTS Centers**

### **Financial Aspects**

#### **Introduction**

In very broad terms, the financial aspect of the situation analysis of the PPM – TB DOTS centers has enumerated the following engagement objectives:

1. To conduct financial analysis of the five (5) TB DOTS centers that will identify the DOTS program’s sources and uses of funds and facilitate the preparation and finalization of their respective income statements, balance sheets and cash flow statements
2. To evaluate the financial performance of the five (5) TB DOTS centers
3. To prepare and develop DOTS financing/business model/s to determine the critical factors for sustainability of DOTS programs
4. To prepare and develop financial recommendations that will enhance the operations of the existing DOTS programs by identifying issues of financial vulnerability and defining courses of action to address them
5. To formulate recommendations and strategies for financial management enhancement of the existing DOTS centers that would include financial management policy, DOTS program financing structure and the overall financial management strategy to ensure financial viability as business concerns of DOTS programs

To accomplish the set of objectives for the Financial Aspect of the Situation Analysis, a financial analysis tool was devised to guide the Finance Specialist and the Research Assistant in their data gathering activities. The financial analysis tool was prepared in very general terms, without regard to the specific circumstances of each of the five (5) PPM – TB DOTS centers, that will tackle financial and business issues and concerns in the pre-organization, pre-operating and commercial operation stages of the TB DOTS centers. Annex “A” is presenting the proforma financial analysis tool.

From a scenario of complete preparedness on the part of the Finance Specialist and the Research Assistant, the actual conduct of the situation analysis for the financial aspect of the PPM – TB DOTS centers yielded negative results. The financial and business data needed to accomplish the financial analysis tool are simply not available from the five (5) PPM – TB DOTS centers.

With the primordial objective of delivering the required output of the engagement, a tally sheet was devised to cover the basic financial data in the establishment and operations of the TB DOTS centers. It was envisioned by the Finance Specialist and the Research Assistant that these basic financial data shall allow the development of illustrative financial model and financial statements for a representative TB DOTS center. Annex “B” is presenting the tally sheet.

The rest of the report will present, in more details, the non-encounter of the Finance Specialist and the Research Assistant with the financial and business issues and concerns in the pre-organization, pre-operating and commercial operation stages of the TB DOTS centers. It will likewise present the illustrative financial model and financial statements for a representative TB DOTS center operations.

### **The PPM - TB DOTS Centers - Financial Aspect of the Situation Analysis**

In alphabetical order, the following PPM – TB DOTS centers were evaluated under this engagement for a situation analysis:

1. De La Salle University Health Sciences Campus TB DOTS Clinic – a PPM model based in a university hospital launched in May 2002
2. FriendlyCare Cubao Clinic TB DOTS Center – a multi-practice medical and diagnostic clinic network model operating for almost a year now
3. Manila Doctors Hospital TB DOTS Center – a private tertiary hospital model that started operations in August 2002
4. PhilamCare Clinic TB DOTS Center – a HMO-based model that commenced operations in August 2003
5. Unilab TB DOTS Center – a corporate social responsibility model in operations as PPM since January 2003.

The sampled PPM –TB DOTS centers ventured into the TB DOTS program for a variety of reasons. The De La Salle University Health Sciences Campus TB DOTS Clinic started off as a research unit of the university. FriendlyCare, with Dr. Alberto Romualdez, a former Secretary of the Department of Health, as their President, would want to support the priority health programs of the government. The three pulmonologists at the Manila Doctors Hospital shared the passion in contributing to the eradication of tuberculosis. PhilamCare, with a health maintenance cardholder base of about 500,000 nationwide, would want the value-added services of a TB DOTS center for their cardholders. For Unilab, it is their way of delivering their social responsibility to the community.

At their respective inceptions therefore, the people responsible for the organization, development and operation of the sampled PPM – TB DOTS centers did not entertain the concept of business profit nor the notion of return on investment. Accordingly, the organization, development and operations of the sampled PPM – TB DOTS centers

did not evolve from a prepared feasibility study or a business plan. In the absence of such, there were no empirical basis for the location and catchment areas of the respective TB DOTS centers. Project costs, as to capital expenditures for physical facilities, medical and laboratory equipment, clinic furnitures and fixtures and manpower complement, were not clearly defined. It is therefore logical to follow that there was no effort to likewise clearly define the needed project financing.

The actual operations of the sampled PPM – TB DOTS centers vary. The differences principally stem from the nature of the assets dedicated to the operations of the TB DOTS centers.

The most fully complemented operations, in terms of dedicated assets, is that of the De La Salle University Health Sciences Campus TB DOTS Clinic. Other than the huge dedicated clinic and laboratory spaces, with a total area of about 130 square meters, medical and laboratory equipments and manpower are likewise dedicated to the operations of the TB DOTS center. Manila Doctors Hospital TB DOTS Center and Unilab TB DOTS Center have dedicated clinic spaces and manpower complement. The required microscopies are however done in the hospital laboratory, in the case of the former, and in the laboratory of the affiliated Health First Medical and Diagnostic Clinic, in the instance of the latter. FriendlyCare Cubao Clinic TB DOTS Center and PhilamCare Clinic TB DOTS Center only have dedicated clinic spaces. Both TB DOTS centers are employing part time manpower complement for its operations, as they are utilized in the other areas of their multi-practice medical and diagnostic operations. FriendlyCare Cubao Clinic TB DOTS Center uses its on-site laboratory for the required microscopies. PhilamCare Clinic TB DOTS Center utilizes the facilities of the Quezon Institute for its microscopies.

Despite being almost fully complemented, the downside, however, in the operations of the De La Salle University Health Sciences Campus TB DOTS Clinic is that they are not maintaining separate books for its operations. All the other four centers are also not maintaining separate books for their operations of the TB DOTS centers. Accordingly, the five PPM – TB DOTS centers are not implementing dedicated financial management system in their operations. Data availability is purely centered on the statistics required by the NTP.

### **Illustrative business model for the establishment and operations of the PPM TB DOTS Centers**

The situation analysis of the sampled PPM TB DOTS Centers allowed the Finance Specialist and the Research Assistant to obtain basic financial data and information for the business modeling that will have to be accomplished under this engagement.

From the innumerable and unstructured financial data and information gathered by the Finance Specialist and the Research Assistant, we are presenting the illustrative financial statements, in the attached annexes hereof, for the operations of the

prospective PPM TB DOTS Centers in two very distinct financial scenarios. The annexes are as follows:

Annex “A”:	Project costs per TB DOTS Center and Project financing
Annex “B – 1”:	Projected highlights of financial performance – Without the use of the Philhealth outpatient package
Annex “B – 2”:	Projected income statement
Annex “B – 3”:	Projected balance sheet
Annex “B – 4”:	Projected cash flow
Annex “C – 1”:	Projected highlights of financial performance – With the use of the Philhealth outpatient package
Annex “C – 2”:	Projected income statement
Annex “C – 3”:	Projected balance sheet
Annex “C – 4”:	Projected cash flow

The supporting assumptions are presented in Annexes “D - 1 to 8”.

Establishing and operating the TB DOTS Centers without the use of the Philhealth outpatient package is not the business methodology to promote the eradication of tuberculosis. From the prepared illustrative financial statements for this financial scenario, the initial capitalization of PhP5,000,000 will be wiped out in two years time by the very unprofitable operations. The non-profitability of the operations of the prospective TB DOTS Centers stems from the very low consultation and sputum smear examination fees that was assumed to be charged at only PhP200.00 per patient and per examination, respectively. It has to be emphasized though that these were the fees currently being charged by most of the sampled PPM TB DOTS Centers under this engagement for a situation analysis. Over the five-year period, the unprofitable operations of the prospective PPM TB DOTS Centers will result to a capital deficiency in the amount of about PhP10,000,000.

Provided that the Philhealth outpatient package for tuberculosis will be fully implemented and that the prospective PPM TB DOTS Centers will pass the accreditation process, the use of the Philhealth outpatient package for the operations of the prospective PPM TB DOTS Centers is the sure thing for their financial success. Premising on the same PhP5,000,000 capitalization for this financial scenario, the prospective PPM TB DOTS Centers will register an operating margin of about 44% during the first year of operations. Based on the PhP4,000 allotment per patient from the Philhealth outpatient package, a return on investment of 87% is possible. This is further validated by a payback period of less than one year.

Businessmen and entrepreneurs may argue that they are wary on the consistency and constancy of the Philhealth outpatient package. A basic and cynical attitude of the majority as they relate to government programs. Accordingly, we had prepared a third set of illustrative financial statements premising that the prospective PPM TB

DOTS Centers will again not use the Philhealth outpatient package. The basic assumptions, however, were amended as follows:

1. Time spent per procedure in sputum collection and microscopy was reduced to 20 minutes from 30 minutes.
2. Consultation fee was increased to PhP500.00 per patient.
3. Sputum smear examination fee was increased to PhP300.00 per test.

The third set of illustrative financial statements are attached herewith as Annexes “E – 1 to 4”. The first two years of operations of the prospective PPM TB DOTS Centers are intrinsically marginal. Operating margins in the said first two years are practically nil. During the last three years of the five-year period, operating margins will be at about six to eleven percent. Return on investment is a low figure of 4%, with payback period at over five years.

### **Recommendations to enhance the operations of the PPM TB DOTS Centers**

The profitable operations of the stand-alone PPM TB DOTS Centers is financially at risk due to the following issues and concerns:

1. Location of the PPM TB DOTS Center.

A business principally dependent on pedestrian traffic and referrals should be located in a very strategic location which is accessible to both private and public transportation. Occupying such an ideal location however has its price as these commercial areas are leasing out at a premium. On the other hand, operating a healthcare delivery business has always been working on limited funds from the project proponents.

In such a scenario, alternative business arrangements should be explored by PPM TB DOTS Center project proponents that will allow lessors of prime commercial spaces in strategic locations to partner with them in the establishment and operations of the prospective PPM TB DOTS Centers.

2. Clinic and laboratory space.

The array of services that a healthcare delivery business can provide is principally bound by the available physical space. Accordingly, situations will occur that the available area for lease is either too small or too big for the present requirements. However, the location is the most ideal for locating a PPM TB DOTS Center. The project proponents are now faced with the dilemma of “gambling” on the available space with the expectations that additional space will be available later or that the business will expand dramatically to require the bigger space available.

Premised on the availability of project financing or the possible formation of alternative business arrangement with the lessor, the project proponents could be better off getting a bigger clinic and laboratory space than a small one.

3. Technical expertise and competence of hired professionals.

The regimen of the TB DOTS starts off with the time consuming sputum smear examination. Based on the sampled PPM TB DOTS Centers, it takes at least thirty minutes to complete one sputum smear examination. And there are three initial examinations and another three follow up tests. Admittedly, this is a very serious limiting factor on the ability of the PPM TB DOTS Centers to chalk up the required volume of patients to ensure profitable operations.

The project proponents should therefore ensure the technical expertise and competence of their hired professionals. Training programs should always be availed of for these professionals to ensure that time spent in procedures required can be reduced to its minimum.

4 Schedule of consultation and examination fees.

Starting at the right foot is always the rule in any undertaking. Businesspersons and entrepreneurs entering a new line of business are always at the crossroads in terms being able to price their goods or services right. In the healthcare delivery business, consumer acceptance of the schedule of fees is very important. It will define the success or failure of the business.

Consequently, the project proponents should ensure that there are empirical basis for the schedule of fees to be used at the start of the commercial operations. Market research in the catchment area of the location should be seriously undertaken.

5. Capital requirements in putting up and operating a healthcare delivery business.

The project proponents for the PPM TB DOTS Centers must understand from the onset that the healthcare delivery business requires extensive capital for its start-up costs and the fixed operating expenses during its commercial operations. On top of these extensive capital requirements is the fact that returns on investments are not necessarily cast on stone.

Alternative business arrangements should therefore be explored to the fullest to minimize the extent of the capital requirements. These arrangements should cover the provisions for physical facilities, such as: clinic and laboratory space and medical and laboratory equipments. Arrangements can also be effected with the hired professionals to minimize personnel costs.



## **Recommendations on the development and operationalization of the financial management system of the PPM TB DOTS Centers**

From the current state of operations of the sampled PPM TB DOTS Centers, the need for the immediate operationalization of an exclusive financial management system is not yet that apparent. Commercial operations is barely over one year for most of them. However, with the expected growth in its operations, it is recommended that, at this very early stage, a financial management system be developed and implemented for the exclusive operations of the PM TB DOTS Centers.

The financial management system shall be principally premised on the maintenance of separate book of accounts for the recording and record keeping of all the transactions related to the assets, liabilities, revenues and expenses of the TB DOTS Centers.

As envisioned, the financial management system shall likewise cover the following areas:

1. Internal and external reporting system on the operational and financial results of the operations of the TB DOTS Centers.
2. Treasury and cashiering operations consisting of billing, collections, cash receipts and cash disbursements.
3. Budgeting and financial planning for the setting of the budget of the TB DOTS Centers and the related measurement of their financial performance.

## **MOST IMPORTANT FINDINGS**

1. The availability of free medications is a vital factor in the success of TB treatment.
2. For this group of patients, the strict implementation of DOT in the clinic is a critical factor in case holding.
3. The NTP sputum microscopy training significantly improved case detection.
4. The collection of sputum in the clinic also improved case detection.
5. Private physicians need and want to know more about TB DOTS.
6. The wearing of masks by the healthcare providers should not be perceived negatively instead must be seen as a precaution which patients would accept and understand if explanation is clearly given.
7. A small space should not dissuade the proper implementation of DOTS. The process must be well thought and efficiently executed.
8. Patients prefer clinic atmospheres that are friendly and compassionate.