

CHAPTER IV

PROPOSAL

Increasing Accessibility to DOTS for TB Patients through a Decentralized and Community Based TB Control Program in Ashrang Health Post Area of Lalitpur District, Nepal

4.1. INTRODUCTION

Tuberculosis (TB) is a major public health problem in Nepal (DHS, 1998/99). Nearly half of the total population has a primary infection with tuberculosis bacilli in the country. Nepal has the second highest rate of TB incidence in the SEAR countries (WHO, 2000). TB is one of the five main killer infectious diseases in Nepal (WB, 1998) which kills 16, 000 people every year. Since 60% of the TB infected people are among the productive age group of 15-45 years, there is significant socio-economic impact of TB in the family, community and the whole country (DHS, 1998/99). Because of these reasons, effective TB control program is essential.

Although the WHO recommended strategy of TB control program “DOTS”, is in place, access to DOTS is the biggest challenge in the hilly region of the country (DHS, 1998/99). The geographical constraints of the country are the greatest obstacles for TB patients to access DOTS services. The same geographical factors in the region

hinder NTP to organize the services, so that it could reach TB patients. As a result, very limited TB patients in the hilly region have easy access to DOTS services.

Lalitpur is one of the hilly districts in Nepal where there is poor access to DOTS. This is because two third of the district lies in the very remote rural area where 55% of the total population reside (DDC, 2000) whereas all DOTS centers in the district are located in the urban and semi-urban area. The geographical structure of the district is even more difficult than other typical hilly districts in the country. In most of the rural part of the district, transportation has not been developed.

Besides the geographical constraints in the district, there are other factors that affect access to DOTS for TB patients. Firstly because the entire DOTS is based in health institutions, DOTS is not adequately decentralized to the lower level health institutions for diagnosis and treatment. Secondly, there is shortage of trained observers who could provide DOT to TB patients. Lack of access to DOTS services leads to adverse outcomes in TB control program, which is worse than no control program.

However, a DOTS program makes the health care system more responsible to organize the services in such a way that it is accessible to TB patients (WHO, 1997). WHO also states that DOTS can be adapted with different approaches in specific situations so that it becomes accessible to TB patients (1997). In the situation of the hilly area of Lalitpur, there is need of adopting an approach which brings DOTS closer to TB patients' houses or working places. The National Tuberculosis Program

(NTP) has also indicated the need of studying alternative approaches for the delivery of DOTS in the hilly area (DHS, 1998/99). In Lalitpur, there is a need for studying an approach that overcomes factors affecting accessibility to DOTS for TB patients in the area.

A rapid assessment done in February 2001, shows that a decentralized DOTS and community based DOT program seems to be feasible in this area of the district. This paper proposes a pilot project for decentralizing DOTS services and, mobilizing FCHVs for DOT in each ward of the VDCs.

4.1.1. Background of the project area

The project will be implemented in Ashrang HP area of Lalitpur district. Ashrang HP is one of the most remote Health Post (HP) located in the hilly area of the district. It is located in Ashrang Village Development Committee (VDC) but it also covers two other VDCs as catchment area and some population in few other VDCs in Lalitpur and the neighboring district of Makawanpur also utilize the HP services based on their convenience. These VDCs are the most remote area of the district in terms of distance to the district center and to the nearest road. The geographical structure contains steep hills and cliffs. Therefore, transportation is a serious problem in the area.

Socio-demographic characteristics of the area

The HP serves about 9,000 people as its target population. Brahmin/Chhetri, Tamang and Magar are the dominant social and ethnic groups in the area. The majority of the people in the area, are farmers. The average literacy level of the district is 62.4% (RECPHEC, 1997) but the percentage is much lower in the hilly communities than the average percentage of the district. Socio-economically, the community is more backward than the average community in the district.

Community Development and Health Project (CDHP), one of the International Non-Governmental Organizations (INGO) in Nepal has been running the HP for last two decades. The HP has a full set of staff and physical infrastructure for a HP level. There is a functioning microscope at the HP. This HP serves the highest TB prevalent area in the hilly area of the district. There is TB control program running at the HP with short-course chemotherapy without DOTS. The HP has the biggest problem of defaulter of TB patients in the district.

4.3. RATIONALE

Since TB is a major public health problem in Nepal, all TB patients must have access to DOTS. However, in the hilly region of the country, access to DOTS is seriously affected by the geographical and health service situations. This study provides an appropriate alternative strategy to increase access to DOTS for TB patients in the hilly area.

Implementing DOTS in the hilly region of the country has been the greatest challenge for the NTP in Nepal (DHS, 1998/99). In the remote area of Lalitpur district, DOTS hasn't been implemented due to the lack of an appropriate strategy. The NTP has indicated the need of studying alternative strategies for delivering DOTS in the hilly region of the country (DHS, 1998/99). This study addresses this need.

The WHO calls for studying different approaches for delivering DOTS in different settings. The pilot project adopts the combination of two interventions where the health post will conduct the DOTS program complemented by SHP and community based DOT. This pilot project tests out the strategy in a small area of the district. If the program is successful this project could be a demonstration and training site for replicating this strategy in other areas.

The WHO policy is to involve new partners in TB control and increase community participation. This project involves active participation of an INGO, the government and the community in all phases of the program, which will maximize the resources for TB control.

FCHVs are a volunteer group who is actively involved in providing basic health care at the village level in the present health care system of Nepal. The performance in their work is satisfactory. They have shown satisfactory performance in ARI control and Vitamin A distribution programs in some districts of the country. They meet all the required criteria in terms of accessibility, acceptability, and accountability to work

as DOT observers. Therefore, it would be appropriate to mobilize FCHVs as DOT observers in this project.

In this project, SHP staffs and FCHVs are mobilized as DOT observers. FCHVs are well-recognized group of volunteers in the health system of Nepal and in the local social and political system. Involvement of them in the TB program will further improve their recognition at the local level and within the health system. It is more cost effective to involve the existing volunteers than train new ones. Since the local level resource is strengthened through this program, it would be sustainable.

4.4. OBJECTIVE

4.4.1. General objective

To increase accessibility to DOTS for TB patients in Ashrang HP area of Lalitpur District.

4.4.2. Specific objectives

By the end of this project,

1. TB diagnostic services will be available at Ashrang HP provided by the existing HP staffs.
3. The two SHPs in each of the VDCs in Ashrang HP area will be providing DOT.

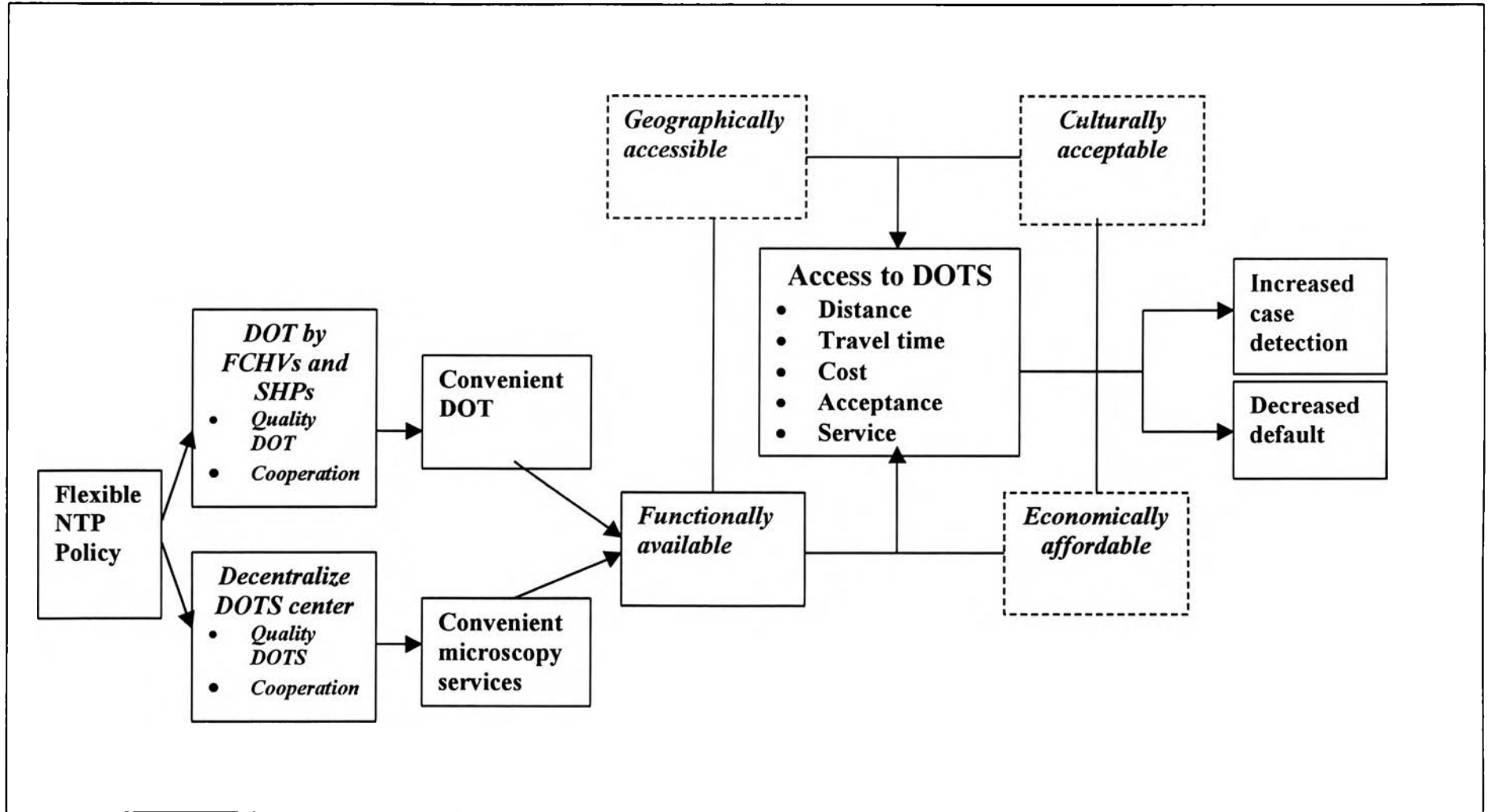
4. FCHVs in each ward of the VDCs in Ashrang HP area will be actively involved in providing DOT to TB patients who cannot attend HP or SHP.
4. There will be patient referral and communication network established among the district hospital, HP, SHPs and FCHVs in the area for TB control program.

4.5. CONCEPTUAL FRAMEWORK

The conceptual framework in figure no. 4.1 shows how the strategies address the problem of low access to DOTS. This conceptual framework includes two strategies that aim to deliver DOTS services closer to TB patients.

The first strategy is to decentralize diagnostic services down to HP level while treatment is decentralized to the SHP level. The second strategy involves providing DOT by FCHVs. From these interventions, TB diagnosis would be available at the HP level and DOT up to each ward level. These interventions will make DOTS services functionally convenient to TB patients overcoming the geographical constraints. This will in turn save their work loss and transportation cost, making DOT financially accessible to TB patients. Since FCHVs are recognized local volunteers accepted by the community, there would be no cultural barriers for DOT. As a result of these interventions, DOTS will be geographically, financially, culturally and functionally within the easy reach of TB patients in the area.

Figure no. 4.1. Conceptual framework



4.6. PROJECT DESCRIPTION

4.6.1. Approach

Reorganization of the TB control services through decentralization and community involvement to overcome geographical and functional constraints to increase access to DOTS for TB patients.

4.6.2. Strategy

4.6.2.1. Decentralization of DOTS center and sub-center

Aiming to make DOTS more accessible for TB patients, levels diagnostic and treatment services will be decentralized to one lower level of the health institutions than at present.

At present, DOTS centers are limited to district hospitals, PHCs and rarely in NGO clinics. . In the rural and hilly areas of Lalitpur, these health institutions are not accessible for TB patients for diagnosis as well as daily DOT. Unfortunately, the lower level health institution, the SHPs that are located at each VDC levels are not mobilized for delivering DOT at present. To provide DOTS closer to TB patients, there is a need for decentralizing DOTS centers and DOT delivery points to the lower levels of health care.

In this project, Ashrang HP will function as DOTS center, which can serve as diagnosis and treatment center for the HP area. Further, two SHPs in the area will function as DOTS sub-center where TB patients will have DOT after they are diagnosed from the center. Doing so, microscopy services will be available in the HP area level and DOT will be available at each VDC level.

Collaboration among the INGO, government and community.

Decentralizing DOTS to lower level health institutions requires management. It especially requires supervision, reliable drug supply and other supplies as well as an additional budget. The government health organization may not be able to manage all those aspects at present. Therefore, there is a need for collaboration between public health services, NGOs working in the area and the community.

The Community Development and Health Project (CDHP), United Mission to Nepal (UMN) is one of the INGOs and has significant role in Lalitpur District health system. CDHP has been working in the rural part of Lalitpur and has been running Ashrang HP. CDHP is one of the active partners in the TB control program in the district. Therefore, CDHP will implement the project in collaboration with Lalitpur District Health Office (DHO) and the community. The roles of these three main stakeholders for implementing the project are explained below.

Role of CDHP:

Coordinate with the DHO for overall management for the project.

- Mobilize Ashrang HP infrastructure for the program.
- Support for training and supervision of staff.
- Training and supervision of FCHVs and facilitate community involvement.
- Transportation of TB drugs and supplies from the District Health Office store to the HP and SHPs.
- Provide the necessary budget for the pilot project.
- Provide expertise for the evaluation of the project.

Role of the government health office:

Lalitpur DHO will be responsible for overall management of the project from the government side. The District Tuberculosis Leprosy Assistant (DTLA) is the main person from the DHO to work for TB program in the district. The following would be the roles of the DTLA.

- Coordinate with the NTC and the Regional Health Office for staff training and logistic supplies.
- Organize and conduct training for HP and SHP staffs.
- Make a supervisory visit to each HP and SHP.
- Arrange equipment, drugs and other supplies for the HP and SHPs.

- Monitor the TB control program by 4-monthly cohort analysis of treatment outcomes.

Note: Adapted from General Manual for National Tuberculosis Program in Nepal, (1997).

Role of the community:

The community leaders will also be involved for implementing the project. Their roles are important for planning and monitoring of the program and raising awareness on TB and DOTS in the community. The community will be involved in the program in a form of DOTS committees. The role of the community is explained in the step 2 of the activity planning later in this proposal.

In this way, the project will run in the existing health system in the district. The project will involve collaboration among INGO, public health services along with the community, which is a WHO-recommended approach for an effective TB control program.

4.6.2.2. Community based DOT

This intervention will address the shortage of accessible and trained observers for delivering DOT. The FCHVs, who are working in the community in the existing health system, will be mobilized for providing DOT at the village level. It has been

recommended by WHO that it is better to mobilize the existing group or organization than to form a new one.

The FCHVs in each ward of the three VDCs will be provided training on DOT. After training, the FCHVs in each ward will provide DOT to the TB patients who cannot come to the HP or SHP everyday for the first 2-3 months i.e. initial phase. After the completion of the initial phase, FCHVs will provide the TB drug to the TB patients for one week to the patients over the following 5-6 months and also check the medicines periodically at the patient's home. FCHVs will be supplied with TB drugs on a monthly basis and they will have a box for safe storage of drugs and patient cards. SHP or HP staff will supervise them in their work.

a. Community support

FCHVs also need support from the local community for doing DOT. They need social support for motivating people and raising awareness in the community. From the rapid assessment, I can conclude that integrating the DOT program with the existing Decentralized Community Health Program (DCHP) would be appropriate.

DCHP is a strengthening program for basic health care at the ward level initiated by the District Development Committee (DDC) in Lalitpur district. A ward committee of local leaders manages the program and the FCHV in each ward is responsible for providing the basic health care. FCHVs are provided with a basic health kit box with basic medicines and instruments (DDC, Lalitpur, 2000). DOT

would be one of the components of the health services provided by FCHVs and the existing DCHP committee can provide necessary support for FCHVs from the community side. This will help FCHVs for motivating people and raising awareness in the community.

b. Incentives for FCHVs:

Findings in the rapid assessment indicate that, FCHVs expect some incentive. The DTLA of Lalitpur also expressed the genuine need of incentives for FCHVs. At present, there is no any incentive for FCHVs for doing work except for the training days. Since TB control is a long-term program, it may not be effective to mobilize them without some kinds of incentives.

Realizing these facts, the FCHVs mobilized in this project will be provided a basic cash incentive based on the number of patients who complete the treatment through them. They will be provided 400 Nepalese Rupees (NRs.) per TB patient (5.44 US \$) for a complete treatment. The amount of the incentive is based on the number of times FCHVs have to attend HP or SHP to collect drugs. FCHVs have to attend HP or SHP eight times for a complete treatment of a TB patient. It takes about a half day (two-way) in an average for FCHVs to attend the HP or SHP, which accounts four days during the whole treatment period including the completion time. The local average daily wage is about 50 NRs. in the rural area by which it equals 400 NRs. for four days.

However, payment will be given in two phases. Two hundred Nepalese Rupees will be paid after the completion of the initial phase during which FCHVs provide DOT everyday and the balance two hundred rupees will be paid after the patient completes the treatment. This will make them responsible to periodically follow up the TB patients throughout the treatment. The incentive will be provided from the CDHP budget. The issue of incentive for FCHVs is being discussed at policy level and there is recommendation from the opinion leaders that there should be a policy in the government to provide some kind of incentives for FCHVs. If the performance of FCHVs is found satisfying in DOTS, the government will adopt a policy for incentives in the future.

Effect of incentives

In the context of persisting grievance of FCHVs on the need of incentives, the incentives in the TB control program will fulfill their expectation and will encourage them to perform their responsibility. This might have positive effect on their performance in the basic health care. Since the number of TB patient to care is not under the control of FCHVs, there is no question that they will work only for TB patients to get more incentives. However, it is arguable that incentives might have negative effects on the responsibilities other than TB control. TB control program is integrated with PHC services, there need to be proper monitoring on the other responsibilities of FCHVs along with TB control. This study will also test the effect of incentives on the performance of FCHVs.

4.6.3. Activity plan

The project consists of three phases. For the detail activity planning, the “Ten Steps of Successful DOTS” from NTC (1999) will be adopted.

Phase I- Preparation:

Step 1. Decide to introduce DOTS

The decision to implement this project has to be agreed by the key stakeholders that will be involved in the project. They include National Tuberculosis Center (NTC), District Health Office, CDHP, HP and SHPs and community leaders. It is important to agree on this project since they have important roles to play for a proper implementation of the project. Besides consensus, they need to be committed for providing resources and support for the project.

Therefore a meeting will be organized involving the stakeholders. The DHO and DTLA of Lalitpur, representative from NTC, Ashrang HP and the sub health post in-charges, the health committee chairmen from HP and SHPs along with the community medical officer in CDHP will be involved in the joint meeting. A brief presentation on the TB problem in the area and the need for this project will be organized in the meeting. The meeting will also plan staff and volunteer training and review the project time frame. At the same time, formation of DOTS committees at the HP and SHPs will be decided.

Step 2. Establish DOTS committees

It is the NTP policy to form a DOTS committee of community representatives for supporting the DOTS program in each center and sub center (NTC, 1999). According to this policy, DOTS committees will be formed in the HP and each of the SHP. In the HP and SHPs, separate introductory meetings will be organized involving the local leaders of the respective VDCs, health workers, and community volunteer groups to form DOTS committees. There is no specific guideline for the selection of people in a DOTS committee. The committee could comprise of 10-15 people (NTC, 1999). In the situation of Ashrang HP area, the VDC leaders, informal leaders, volunteers and representatives from local organizations could be involved and HP and SHP in-charges will function as a member secretary in the respective committees. The participants in the introductory meeting will make a selection of committee members.

The role of the DOTS committees is important. The main purpose of a DOTS committee is to assist and support to implement the program. NTC has identified the following as the main tasks of the committee.

- Raise awareness and motivating people for treatment.
- Mobilize local resources for the TB program
- Encourage cooperation between health institutions and the community
- Identify local problems in DOTS implementation and propose appropriate solutions at the community level.
- Protecting health workers at the HP and SHPs from undue political pressures.

Adapted from “Ten Steps of Successful DOTS”, NTC, 1999.

Step 3. Fix the DOTS center and sub centers.

Ashrang HP will be the DOTS center and two SHPs will be sub centers in the respective VDCs in the area. In the DOTS center, the suspected cases are screened and diagnosed while the sub-centers only provide DOT to TB patients. Functions of DOTS center and sub-center are as follows.

a. Functions of DOTS center (HP)

- Screen people with respiratory symptoms by sputum smear examination.
- Diagnose TB
- Register TB patients
- Maintain treatment cards
- Start TB treatment
- Provide daily DOT or refer to a sub-center.
- Conduct follow up sputum examinations
- Follow up defaulters and late for treatment patients
- Prepare 4 monthly reports on TB treatment outcomes.
- Refer complicated patients to the district hospital.

b. Functions of sub-center (SHP)

- Provide daily DOT
- Follow up defaulters and late for treatment patients
- Refer patients with respiratory symptoms to the treatment center
- Refer people with drug reactions to the treatment center

- Collect and send sputum samples for follow up examinations

Adapted from “Ten Steps of Successful DOTS”, NTC, 1999.

c. Functions of FCHV

- Provide daily DOT and keep record
- Follow up defaulter or late for treatment patients in her ward
- Refer the defaulter, TB symptomatic and cases with drug reactions to the treatment center.
- Send the TB patients for follow up sputum examination.
- Supervise stock of TB medicines at the TB patients’ home periodically in the continuation phase.

After diagnosis at the DOTS center, DOT will be provided either at the HP or SHP. If both of the options are not possible, then the patients will be sent to their ward FCHV for daily DOT so that they will have easy access to DOT.

Step 4. Training

Training is important for providing necessary knowledge and skills for staffs and volunteers. Until the necessary staffs and volunteers are fully trained and competent, DOTS cannot be started. For training of health workers and DOTS committees, the existing NTP training course will be used. However, for FCHVs there is no such training course for TB DOTS training. Therefore, a training course will be developed for the FCHV group involving the training experts of the NTC and CDHP.

A task analysis will be done prior to developing the training course. Training will be provided to staffs and volunteers as shown in the table 4.1 bellow.

a. Objectives for general DOTS training for HP and SHP staff.

The goal of this training is to strengthen TB control program at the peripheral level of HP and SHPs by providing quality training to the staffs. At the end of this training, the staffs should:

- Have clinical knowledge on TB and be able to identify a tuberculosis suspect.
- Be able to register and administer the correct treatment to a TB patient.
- Recognize complications of treatment and manage at HP or refer to the district hospital.
- Be able to monitor TB patients and record treatment outcomes
- Give appropriate health education to TB patients.
- Collect sputum samples and prepare smears.

Source: NTC training guideline

b. Objectives for microscopic training:

The purpose of this training is to make the HP staff competently perform the microscopic test for sputum.

- To prepare sputum slides and test it properly
- To maintain record and report of microscopic examination
- To maintain the reagents and instruments for microscopy

d. Objective for FCHVs training.

The purpose of this training is to make FCHVs able to provide quality DOT to TB patients in their wards. After the training, they will be able to:

- Identify TB suspects and refer to the DOTS center for diagnosis
- Provide DOT correctly to TB patients
- Keep the daily record of the treatment
- Give health education to TB patients
- Recognize basic symptoms/signs of drug reaction and refer the patients to the HP.
- Be familiar with the drug supply and communication network among HP or SHP.

e. Objectives for DOTS committee orientation

The purpose of this orientation is to provide understanding of TB problems in the community and DOTS strategy for TB control to the community leaders.

At the end of the orientation, they will be

- Be familiar with TB problems in the community
- Understand the importance of DOTS strategy for TB control.
- Be aware of the supportive roles of the committee for DOTS program

Table no.4.1. TB DOTS training

Training	T r a i n i n g days	T r a i n i n g Place	Remarks
<u>Initial training</u> HP/SHP staff DOTS training	6 days	DHO	3 technical staff from HP and 2 staffs from each SHP will be trained for DOTS
Microscopy training	10 days	RTC	Two technical persons from HP will be trained.
DOTS committee/ DCHP members orientation	1 day	HP and SHP in each VDC	The orientation program will be conducted at VDC level involving DOTS committee and DCHP members from each ward
DOTS training for FCHVs	2 days	At HP	All the FCHVs in the four VDCs will be trained in two shifts.
<u>Follow-up training</u> Follow up training for HP and SHP staffs	2 days	DHO	The follow-up training will be organized in six months and one year after the initial training.
Follow-up training for microscopist.	2 days	RTC	The training will be provided in six months after the program starts and then every year.
Follow-up training for FCHVs	1 day	HP	The training will be given in six months after the initial training and then every year.

The HP and SHP staffs will be taken for field visit to a model DOTS program for observation of the real work for implementing DOTS. The follow-up training will

address the learning need of the staffs and FCHVs based on the perceived problems among them and the supervision reports. The trimester cohort analysis also involves review of the problems in the program and feed back.

Step 5. Ensure criteria for starting DOTS

Before starting the program, a review will be done to make sure that all the criteria for implementing DOTS are fulfilled. If any of the required criteria are impaired, they will be fulfilled before starting DOTS.

a. Criteria for starting DOTS at the center (HP)

- Trained health workers designated for TB program
- NTP manual at the center
- TB registers, cards and forms in place
- Buffer stock of TB medicines and supplies
- Trained health personnel for microscopy
- Adequate reagents and supplies
- Binocular microscope
- Quality control system for sputum test
- Arrangement for delivery of DOT
- Supervision plan for DOTS center

b. Criteria for DOTS sub-center (SHP)

- Trained health worker designated for DOT

- NTP manual
- Stock of TB medicines
- Arrangement for DOT
- Supervision plan

Adapted from “ Ten Steps of Successful DOTS”, NTC, 1999.

Phase II-Implementing DOTS

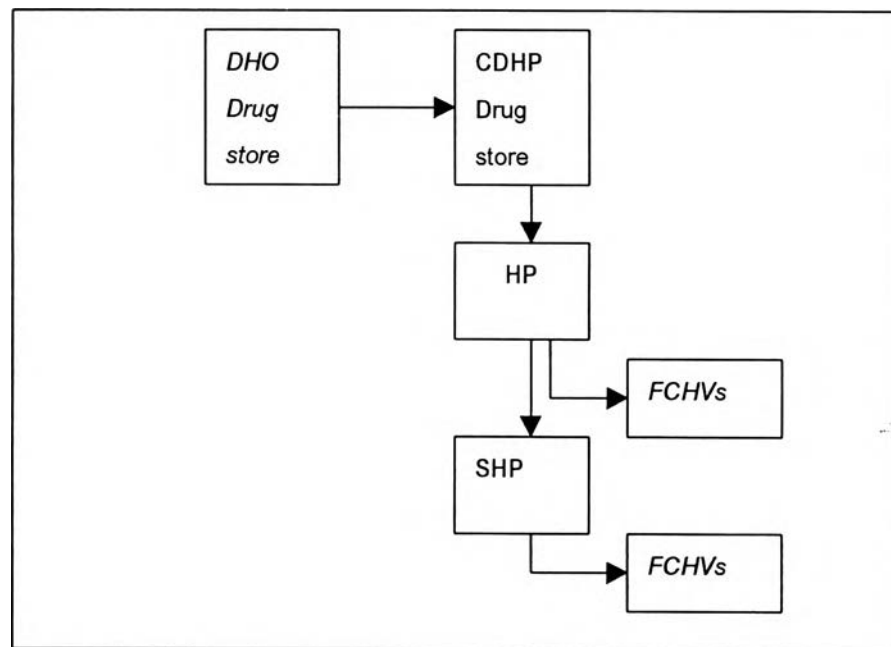
Step 6. Start DOTS

DOTS will be started from the fourth month of this project when all the preparation will be completed. The TB suspects are screened at the HP by microscopic examination of sputum. The approach of case detection is passive case finding. Once TB patients are diagnosed, the patients are registered at the HP and treatment is provided under the direct observation of trained health workers either at the HP or the SHP depending on the convenience of TB patients. If patients cannot attend the HP or SHP every day for DOT, then they will be sent to the respective ward FCHV'. Practically, they have to visit the HP the next day along with the ward FCHV for good communication. The FCHV would collect the TB drugs for the patient on that day. From the next month, the medicines will be supplied to FCHVs at the time of monthly meeting on the basis of number of patients. Patient record will be maintained at the HP, SHPs and with FCHVs for treatment. Supervision of the treatment and recordings will be done at each level to ensure that everything goes according to the guidelines.

a. Network

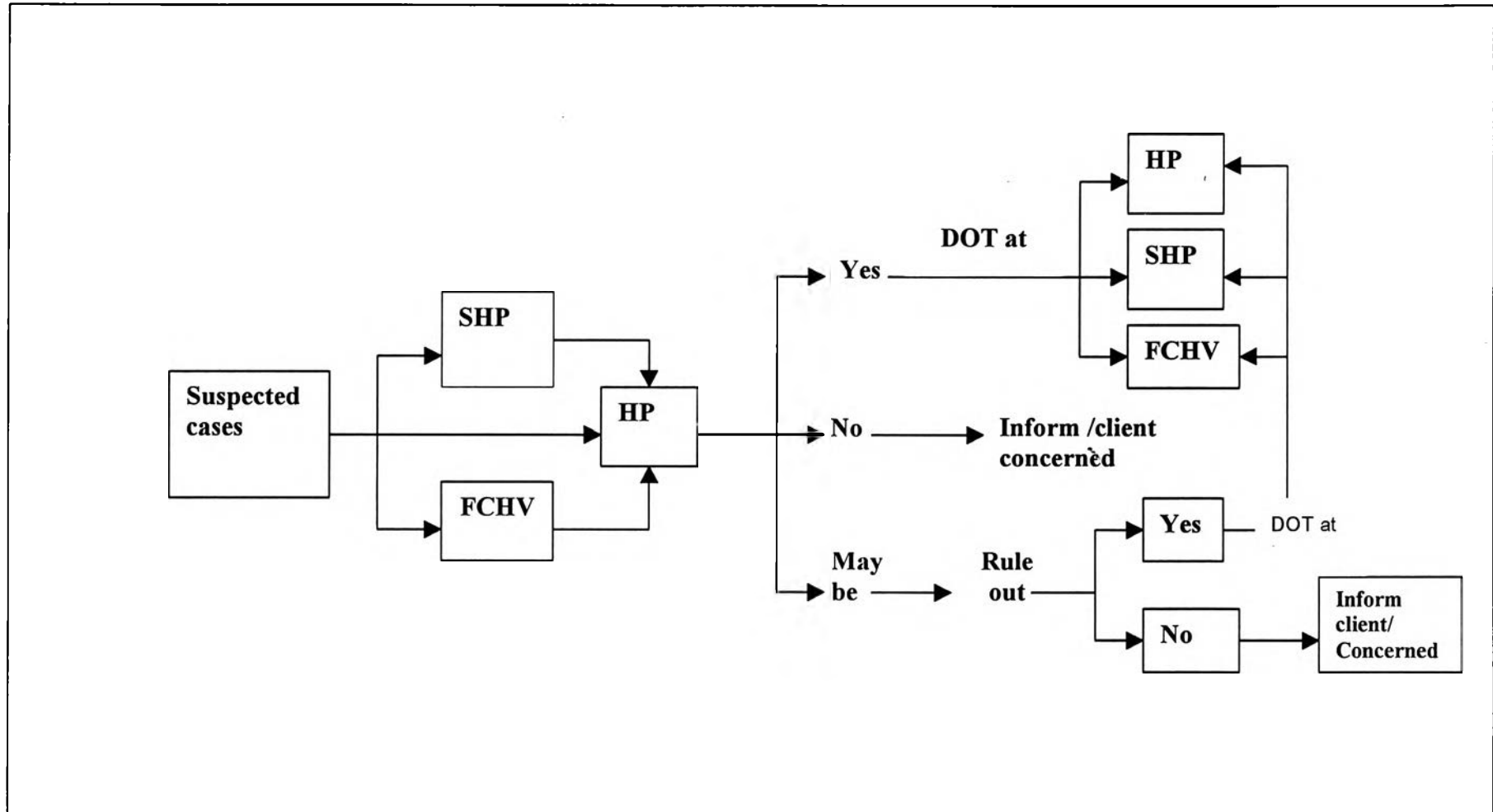
For the smooth functioning of the DOTS program, there will be a network established for drug supply, patient referral and communication among HP, SHPs and FCHVs in the area as shown in the following figure.

Figure no 4.2. TB drug supply network in the project area



TB drugs are delivered to CDHP store from the DHO store. Then, CDHP will transport the drugs to the HP and SHPs. FCHVs will get the drug supply either from the HP or SHP based on their convenience on the monthly basis.

Figure no. 4.3. TB patient referral network.



Step 6. Supervision of DOTS program

Supervision is important for a DOTS program to run properly. A decentralized DOTS program will require extensive supervision. Regular supervision visit to HP and SHP is essential, especially at the initial stage of the program. Supervision helps to solve local problems in the DOTS program and makes sure that guidelines are being followed in diagnosis, treatment, recording and that quality is being maintained in the services.

CDHP, the DHO and the NTC will be responsible for supervision role as follows:

- The medical officer from CDHP will supervise the diagnosis and treatment activities and guide the HP and SHP staff in this regard based on the TB protocol.
- The CDHP program coordinator will be responsible to supervise maintenance of drug and supplies, overall performance of staff and FCHVs, and reporting of the program.
- The DTLA will be responsible to supervise the drug store, supplies, recording and reporting of the of the program at the HP and SHPs and also periodic supervision of FCHVs.
- The district laboratory technician will supervise the microscopist to maintain quality in sputum examination. According to the NTP guideline, 100% of the positive slides of sputum and 10% of the negative ones must be sent to the DHO and then to the regional laboratory for quality control.

- The HP and SHP staffs will supervise FCHVs in their work.
- The NTC supervisors can make periodic supervision of the overall program.

Supervision tools:

The NTP protocol is the basis for diagnosis, treatment, record, reporting and management of the DOTS program. Therefore, HP and SHP staffs and FCHVs have specific roles and responsibilities to perform in the DOTS program. Each level of staffs, and FCHVs will be supervised based on the specific tasks they are given in the program. A supervision checklist will be prepared for the supervision of HP and SHP staffs and FCHVs based on their responsibilities.

Supervision schedule for DOTS center and sub-center

For each area and level, a supervision schedule will be followed as follows.

- Once a month for the first four months
- Every two months for the next four months
- Every four months from onwards.

Source: NTC, 1999.

Step 8. Prepare report and cohort analysis

It is a NTP strategy to prepare 4-monthly reports of treatment outcomes on the DOTS program. A cohort analysis of all the cases registered at the HP will be done on

every quarter using the NTP format. From the analysis, case detection rate and defaulter rate will be analyzed for the purpose of monitoring the DOTS program. However, the report also includes other treatment outcomes such as completion, failure and death rates as per NTP guideline.

From the starting of DOTS, a cohort analysis will be maintained i.e. all the registered cases from the fourth month to the fifteenth month of the project will be taken for cohort analysis. It is because a patient who starts treatment on 15th month of the project will complete the treatment at 23rd month.

III-Evaluation phase:

Step 9. Evaluation of the project

In the 24th month of the project, an evaluation will be done. The purpose this evaluation will be to assess the effectiveness of the intervention, performance in the DOTS program and the involvement of the project stakeholders.

I) Questions for evaluation

1. Is the strategy effective to improve case detection and reduce default rate in the TB control program?
2. Does the strategy improve access to DOTS for TB patients in the HP area?
3. How is the performance of HP, SHP and FCHVs in the TB control program?
4. How is the cooperation among the stakeholders?

ii) Evaluation objectives

- a) Define the effectiveness of the strategy in terms of access, case-detection and default rate
- b) Describe the performance of HP, SHP and FCHVs for DOTS.
- c) Describe the cooperation among the government health office, CDHP, FCHVs and community leaders in the TB control program.

iii) Definition of the terms:**Effectiveness:**

Refers to improved access to DOTS and achieve case detection and default rates.

Performance:

Refers to correct diagnosis and prescription of correct treatment, correct DOT, supply and storage of drugs in appropriate condition and appropriate education and counseling to TB patients.

Cooperation:

Refers to provision of resources and collaboration in management according to the roles of each stakeholders defined in the program.

Table no. 4.2. Indicators to assess:

Assessment	Indicators	Means of verification
Case detection and default rate	<ul style="list-style-type: none"> Case detection rate 70% or more and default rate less than 10% (WHO and National target) 	Cohort report
Access to DOTS	<ul style="list-style-type: none"> TB patients who cannot attend HP/SHP have DOT with FCHVs. DOT within one hour travel time for all TB patients Minimum travel cost and loss of work time Availability of diagnosis at HP and DOT at SHP/ward FCHVs 	<ul style="list-style-type: none"> Program report. Conduct an assessment. Program report
Performance in DOTS	<ul style="list-style-type: none"> Less than 2% false diagnosis, All correct prescription of drugs as per guideline All correct DOT by SHP and FCHVs Minimum errors in recording and reporting No expired/damaged drugs at HP, SHP & FCHVs 	<ul style="list-style-type: none"> Lab. Quality control report Supervision reports
Cooperation of stakeholders	<ul style="list-style-type: none"> No shortage of drugs and other supplies at HP, SHP and with FCHVs Timely feedback for the program All HP/SHP staffs and FCHVs will be trained. Community leaders will assist HP, SHP staffs and FCHVs to solve the local problems in DOTS. Adequate budget for the program. Joint planning for the program HP, SHP and FCHVs will perform their roles as per guideline for DOTS. 	<ul style="list-style-type: none"> Drugs and supply records Supervision reports Training report Committee meeting report Allocated budget Meeting reports Program report

Step 10. Replication of the project to other areas of the district.

On the basis of the evaluation findings, the project could be replicated to other parts of the district or the country. If this approach is successful, the findings will be disseminated to the NTP for eventual adoption in other parts of the country.

4.8. Resources

The project will be implemented within the existing management and manpower situation of CDHP and government health organizations. There will be no need to hire personnel or form a new management team for the project. The existing personnel in the implementation and coordination level will be mobilized. For this, it requires some additional budget for incentives for staffs and the FCHVs. The supplies for the program and training come under the regular NTP. The budget for the project will be contributed from the CDHP and government sources.

Table no.4.4. Budget planning

Budget item	Description	DHO source (NRS)	CDHP source (NRS)	Total
P r o j e c t administration	Transportation, communication, stationers	-	21,500	21,500
Coordination for the program	Refreshment for one-day meeting	-	1,500	1,500
Formation of D O T S committees:	One HP and two SHPs: Refreshment and DA for organizing staffs	1,500	4,350	5,850
General DOTS training	6-day training for 7 HP/SHP staff: DA, Refreshment and stationers	18,950	1,800	19,750
M i c r o s c o p y training	Ten-day training for two staffs	5,300	-	5,300
FCHV training	Two-day training for 27 FCHV:DA, refreshment, stationers	1,200	6,250	7,450
DOTS committee orientation.	One-day orientation at HP and two SHPs: DA for organizing staff and refreshment for participants	4,875	1,500	6,375
Staff follow up training	Two-day training for 7 staffs	7,100	600	7,700
M i c r o s c o p y training	Two-day training for two staffs	2,000	-	2,000
FCHV follow up training	One-day training for 27 FCHVs	900.	4,775	5,675
Drugs	For estimated 90 cases	*2,00171		
Incentive for FCHVs.	50% of estimated TB cases (45) will be provide DOT by FCHV.	-	18,000	18,000
Supplies	Reagents and other required supplies for DOTS	*10,000	-	10,000
Transportation of supplies	Quarterly transportation of supplies from DHO store to HP and SHPs.	-	3,200	3,200
Supervision:	TA/DA for scheduled supervision visit	7,200	7,200	14,400
Evaluation.	Evaluators and stationers	3,000	9,000	12,000
Miscellaneous	-	-	5,000	5,000
Grand total	-	2,62,197	1,01100	3,63,297

Government contribution: 262,197 Rs.=3521.78 US \$.

* Budget in kind from NTC=210171 Rs. =2822.98 US \$

CDHP contribution: 101100 Rs. =1358.87 US \$.

Total budget: 363,297Rs. =4879.74 US \$

Note: 1 US \$=74.40 Nepalese Rupees.

4.9. Assumption and risks

1) Commitment from government health office and CDHP:

Findings of the rapid assessment indicate that, the District Health Office is committed to implement DOTS in the area. CDHP is committed to support the district health program to implement DOTS. Based on these perceptions, it has been assumed that they will agree on this project and provide necessary resources (budget, materials and drugs, training and supervision experts) and will cooperate for the management of the project.

In the context of NTP, it is less likely that government health office and CDHP would not cooperate for the project. If there will be less commitment from one side, the other side has to fulfill the resource need. In this case, other donor organizations in the country can also be approached for funding the project.

2) Commitment from local health workers and FCHVs:

Success of DOTS program depends upon the commitment of the local HP and SHP staff who will be implementing the program. Likewise, the FCHVs in the villages need to be committed for providing DOT. There is no option for HP and SHP staff for the program implementation but if FCHVs do not cooperate, other community volunteers such as school teachers, trained Traditional Birth attendants (TBA) and community leaders can be mobilized in place of FCHVs.

3) It is also assumed that the community people who will be involved in the DOTS committees and DCHP committees will cooperate to support the program. Cooperation of the community leaders depends upon the initiation of local health workers. Once the leaders are aware of the TB problems in their community and importance of DOTS strategy, it is less likely that they would ignore for participation.

4) At last, the political situation of the country that has effect on the whole health system will be stable and favorable for the project.

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