

Chapter IV

Data Exercise

Directly Observed Treatment Short-course(DOTS): A Strategy to Increase the Cure Rates among the TB Patients in Nepal.

4.1 Introduction

Thailand is one of the pioneers of Directly Observed Treatment Short-course (DOTS) in the National Tuberculosis Program. TB (tuberculosis) is a major public health problem in Thailand. It is estimated that 120,000 cases will occur in the year 2000(Thailand TB Program Review, 1995). Nearly half of new infectious cases occur among the economically most productive age groups of the population.

The interaction between TB and HIV (human immuno-deficiency virus) is well documented. The HIV seroprevalence among TB patients was 10 % in late 1994, with a peak of 40 % in the Northern Provinces (Thailand TB Program Review, 1995). TB is also most common HIV-related opportunistic disease, affecting over one third of the AIDS patients in Thailand.

DOTS (Directly Observed Treatment Short Course) is that every patient is ensured that he/she takes his treatment regularly and completes the treatment and gets

cured. Cure is the patient in treatment completes the treatment and sputum specimen is negative at 5th and at the end of the treatment.

Thailand is facing a growing problem of drug resistant TB, which indicate the poor performance of the National TB program. The combination of low cure rates due to unsupervised treatment and high defaulting in the treatment promotes the development of drug resistance.

In Thailand DOTS has been practiced since 1991. Thailand is one of the pioneers of DOTS. DOTS in Thailand is not by health workers but by treatment supervisors. The patient after being diagnosed has to identify a treatment supervisor who will supervise the treatment. The supervisor can be anyone in the family, neighbor or the school teacher. Every day the patient takes the drugs in front of the supervisor and the supervisor makes a tick mark in the DOTS card where there is a calendar and every day is marked. The data exercise was carried out in Muang district of Cholburi province.

4.2 Objectives

This data exercise was carried out so that it would be easier to implement the DOTS by supervisors with community participation in the community. The aim is to identify relevant information in respect to delivery of DOTS. Therefore, qualitative and quantitative approach has been used in the study design. The study is a cross sectional descriptive study to explore the relevant information to access the DOTS

strategy. The study aims to find out how DOTS (Directly Observed Short-course) is practiced in Thailand.

An observation and key informant interview was done as data exercise in the exploratory phase of the survey aimed at refining the study design. Thus the objectives of the data exercise were to :

- test the data collection techniques.
- pre-test the interview questionnaire and observation checklist.
- to observe how DOTS by treatment supervisors work.
- to observe the outcome of the treatment of DOTS by treatment supervisors and unsupervised SCC (Short Course Chemotherapy)

4.3 Data collection method :

4.3.1 Technique for data collection

- 1 In-depth Interviews with key informants
- 2 Direct observation.
- 3 Secondary data analysis

4.3.2 Instruments for data collection

To test the appropriateness of those techniques and pre-testing of interview questionnaire and observation check-list a data exercise was done in Thailand. The key informants are the director of the TB center, a public health nurse, and a social worker. There are only one director and one social worker in that TB center but there are 4

public health nurses but only one could speak English. The questionnaire talks about the how treatment supervisor is selected, how these treatment supervisors are trained, and how the compliance is monitored. But as a part of data exercise for observation TB patients in outpatient of Cholburi Zonal TB Center is observed. For the quantitative part analysis of the secondary data from the TB register of Muang district was done to see the treatment outcome of the patients.

4.3.3 Pre-field activities :

Prior to going to the Cholburi a draft study design was prepared and discussed with my advisors. In this regard correspondences and contacts were made with Cholburi Zonal TB Center at Cholburi district. It was known that DOTS has been used in this center since 1992 and some research projects on DOTS has been carried out in this center.

On 23rd November 1997 I went to Cholburi Province. Upon arrival I made courtesy call to the Dr. Chuchai Tulaporn, Director, Cholburi Zonal TB Center and explained the purpose of my visit . From the discussion I came to know that 26 % of the total TB patients had TB with HIV that is second position after Chiang Mai province in the fiscal year in 1995. The director also said that Multi-drug resistance is also a problem but he said that he did not have any data on this. With the assistance from WHO research on drug resistance is being carried out to see the extent of the problem.

4.4 Data collection methods

4.4.1 Observation :

Observation is not a technique for data collection in my original study. Observation was done to see how DOTS works. So observation was done in the Cholburi Zonal TB center. The observation is an important methods for the data collection in the qualitative research approach. The original study aims to identify alternative of DOTS by health worker suggested by villagers through action research. The observation guidelines were used to collect information. Without speaking single words with the people notes were taken at the TB center. Observation of the patients taking drugs at home could not be done because the patient take drugs in the early morning.

4.4.2 Recording and reporting system

All the diagnosed patients are registered in the central register. Each patient has his own treatment card, which is kept either in the Zonal TB center or the district hospital. If he lives near from the Zonal center his card is kept at the zonal center but if he lives near the district hospital his treatment card will be kept in the district hospital. This is done because it will be easier to supervise and monitor the program.

4.4.3 Supervision and monitoring

Supervision and monitoring is done by the Zonal TB Center and district. They have district TB supervisors, who go and supervise these TB patients and their treatment supervisors. Supervision is also done as surprise visits from TB center and

district hospital. Pill count and looking at the color of the urine (when taking TB medicine the urine turns pinkies) is also method of supervision used.

4.4.4 Evaluation

Evaluation is done throughout the period of treatment . Sputum examination to see the progress of the treatment is carried out every second and fifth month and at the end of the treatment. A cohort analysis is done every quarter to see the cure rates, conversion rates, defaulter rates, death rates, and transfer out rates.

4.5. Findings

4. 5.1 Observation findings :

Out of total 15 patients observed, 9 were males and 6 were females. All the patients had completed 2 months or more of the treatment and had come for laboratory and radiological examination. None of these patient had stopped or discontinued their medicines. I saw the DOTS card and the all the cells were marked properly.

Most of the supervisors for the men were their wives and for the women were daughters 3, son 2, and husband 1. All of these patients were new sputum positive patients, who never had any treatment before. All of these patient had to travel 30 minutes to 90 minutes by local transportation. By profession they were farmers and fishermen.

4.5.2 Key informant interview findings :

The key informants interview was done on the 24 November 1997 at Cholburi Zonal TB center with the director of that center, public health nurse of the center, and with the social worker of that center.

Similarly, observation were done at the same center with patients attending the outpatient department for diagnosis and follow ups. I observed the patients being diagnosed. After the diagnosis of the disease the patient had to go to the social worker, where he had to choose a treatment supervisor. The supervisor can be anybody from his family members to a school teacher to a neighbor. Then this supervisor had to sit in the health education room with patient for a session of health education or the so called training. Then the patient is given a packet of 40 days medicine and small card called the DOTS card. Every morning the patient swallows the medicine in front of the supervisor and the supervisor makes a tick mark in the cell of the DOTS card. After one month the patient with supervisor go to the primary health care center (PHC) to collect the medicines. The health worker counts the pills and counts the cells in the DOTS card and verifies that drugs has been used correctly. Then the patient is supplied with another 40 days of drugs. This is repeated for six months. There are surprise visits from the PHC to see that drugs are taken properly..

People with TB symptomatic come to the health facility for the diagnosis. After the diagnosis the patients takes the medicines and with appointed supervisors they continue to take the medicines. After one month of medication the patient along

with the supervisor comes to collect the medicines. At the end of 2nd month, 5th month, and at the end of the treatment the sputum is examined. If all the findings of the examination are normal, the patient is discharged from the treatment.

During this, a TB supervisor visits these patients on treatment twice during the first two months and once during last four months. This done to make sure that the treatment is taken properly and accurately. Even some surprise visits are conducted from the center to see that pills are taken properly. In performing this pills are counted and the color of the urine is visually checked. The DOTS card is seen to see that if the cells in this card is ticked properly.

The choosing of the treatment supervisor depends on the availability of the person. The patient can choose anybody amongst the family member or if he does not have any then he can choose a neighbor. Then the treatment supervisor is explained what he has to do as a treatment supervisor. The treatment supervisor's main duty is to make sure that the TB patients takes the TB drugs daily as prescribed. After the drugs are taken daily by the patient the treatment supervisor makes a tick mark in the DOTS card. This action is repeatedly daily till the patient completes the treatment.

Every month the patient has to go to the treatment center to collect the drugs. The supervisor also has to go with him. The supervisor along with the patient also receive health education.

4.5.3. Secondary data analysis.

The data analysis was of those patients who had already completed the treatment. A cohort analysis of treatment completed patients was done. The basis for the cohort was period of registration to treatment, their sputum status, and the past history of treatment. A patient to be included into the cohort had to be registered within that quarter of the year, so there were four cohorts in one year. A patient had to have a sputum positive status and he had to be never treated for TB.

Table 4.1 shows the number of patient registered during each quarter of June 1996 to September 1997. In Table 4.II and 4.III we can see the sputum conversion report of the patients in respective quarters. We are comparing the results of two groups one with DOTS by treatment supervisors and other is SCC unsupervised. The patient with SCC get the same medicine for the duration but the difference is in DOTS there is someone supervising the treatment and in SCC patient takes on his own (unsupervised).

Table 4.4 shows treatment outcome of patients enrolled during Jan. to March 1995. The cure rate in DOTS and SCC is 61 % and 48 % respectively. In Table 4.V we can see the treatment outcome of the patient enrolled during July to September 1996. The cure rate in DOTS is 87.5 % and in SCC is 47 %.

Table 4.V analyses the number and percentage of the treatment supervisors. As from the table it is apparent that the wives are the most available treatment supervisors.

Table: 4. 1: No of patients enrolled in DOTS and SCC (quarterly report)

Quarter	DOTS	SCC
1/6/'96-30/9/'96	8	7
1/10/'96-31/1/'97	21	21
1/2/'97-31/5/'97	20	22
1/6/'97-30/9/'97	8	8

Table 4.2 :Quarterly report (sputum conversion) DOTS

quarter	Total	neg	pos	died	defau	trans
1/6/'96 30/9/'96	8	8	-	-		
1/10/'96 30/1/'97	21	13	-	6	1	1
1/2/'97 31/5/'97	19	17	-	-	1	1
Total	48	38	-	6	2	2

Table 4.3 :Quarterly report(sputum conversion) SCC

quarter	Total	neg	pos	no results	died	defa u	trans
1/6/'96 30/9/'96	7	5	-	-	-	2	-
1/10/'96 30/1/'97	21	15	-	-	-	5	-
1/2/'97 31/5/'97	21	16	3	-	-	2	1
Total	49	36	3	-	-	9	

Table 4.4 Treatment outcome (1 Jan 1995-Mar 1995)

	CURE	COMPL ETED	FAIL URE	DEAD	DEFAU LTER	TRANS FER OUT	TOTAL
DOTS	19 (61%)	1 (3.2%)	-	6 (19.2%)	3 (9.6%)	2 (6.4%)	31
SCC	15 (48%)	3 (9.6%)	-	-	12 (38.4%)	1 (3.2%)	31

Table 4.5 : Treatment outcome of DOTS and SCC (1/7/96--30/9/96)

Cure	COMPLETE	DIED	FAILURE	DEFAU	TRAN OUT	TOTAL
DOTS 108	2	8	2	2	2	124
87.5 %	1.61 %	6.45 %	1.61 %	1.61%	1.61%	100 %
SCC 73	36	12	11	13	10	155
47 %	23.2%	7.8%	7.1%	5.2%	6.5%	100

Table 4.6 : Number and percentage supervisors

SUPERVISORS	NUMBERS	PERCENTAGE %
HUSBANDS	6	4.8
WIFE	49	39.5
FATHER	4	3.2
MOTHER	12	9.6
SON	10	8.1
DAUGHTER	20	16.1
BROTHER	5	4.0
SISTER	5	4.0
DAUGHTER-IN-LAW	2	1.6
NEPHEW	3	2.4
COUSIN	3	2.4
VOLUNTEER	5	4.0
TOTAL	124	100 %

As we can see from the above tables above that DOTS has better results and better compliance to treatment compared to SCC given to patients without any supervision. The patients on DOTS have almost 87.5 % cure rate where as SCC has only 48 % cure rate. So there is no doubt that DOTS is the best method .

4.6 Discussions

Implementing DOTS is a challenging task to be achieved by any National TB programs. To implement DOTS it is very difficult in a country with scarce resources. To implement DOTS there has to be a political commitment from the government as well. The National TB Program also must be well prepared and must have a trained manpower.

To improve the cure rates is the main aim of the National TB program. If we cannot improve the cure rates to 85 % as recommended by the WHO. To decrease the prevalence TB to half, there has to be continuous achievement of cure rate of 85 % and case finding 70 % for 12 consecutive years. This is a tremendous amount of work to be done.

As we can see from the data exercise that the people have to see that TB is indeed their problem. And they have to try and help cure the patients acting as treatment supervisors.

We can clearly see from the cohort analysis that DOTS is better in achieving the cure rates than the SCC. If the patient is cured it is apparent that no other person is cured from that source. Treating a TB patient is the best prevention of TB.

The high cure rates in Cholburi by treatment supervisors can be explained because Thailand has one of the best PHC services. The per capita income of Cholburi is around US \$ 6000, the highest in Thailand (US \$ 2400). The per capita income of Nepal is only US \$ 180. Therefore, the per capita income also plays a vital role in people completing the treatment.

4.7 Lessons Learned

The main aim of the data exercise is field test instruments. The data exercise has shown that if the supervisors are trained properly they can properly guide the patients to take the medicines regularly so that the patients do not default from treatment and develop multiple drug resistance. There has to be a proper supervision from the service providers as well. Otherwise these treatment supervisors will say that they have supervised the patients taking the drugs but patient might not have taken.

Therefore, a proper supervision and training of the treatment supervisors is necessary to succeed in achieving 85 % cure rates with DOTS. Also there has to be a proper supervision from the health care provider to these treatment supervisors. Supervision at all levels from all levels is necessary

4.8 Limitations and constraints :

The first constraints of data exercise is my inability to speak, read and understand Thai language that caused difficulty in understanding records in Zonal TB Center and in conducting smooth discussion with one another during interviews and observations. This also caused usability to conduct key informant interview with community people and local health workers. Secondly, my stay in the Cholburi was very short. For example, I could not observe the people swallowing the drugs in front of the supervisor and supervisor marking it in the DOTS card because the drugs are taken very early in the morning before breakfast

Key informant interview with the patient could not be done because of language barrier and time constrain. Focus group discussion also could not be tested because of the same constraints.