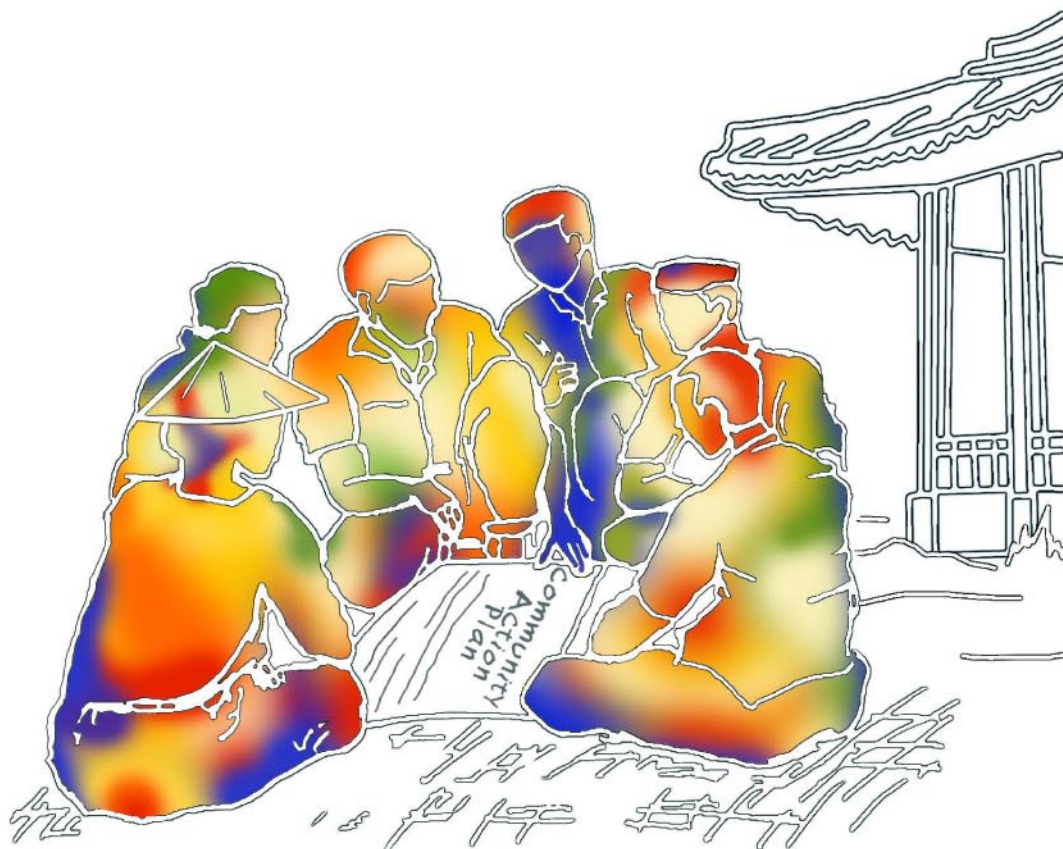




WORLD HEALTH ORGANIZATION

COMMUNITY CONTRIBUTION TO TB CARE: AN ASIAN PERSPECTIVE



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**COMMUNITY CONTRIBUTION
TO TB CARE:**

AN ASIAN PERSPECTIVE



Community contribution to TB care: an Asian perspective

BV Sharma, Senior Lecturer, Department of Anthropology, University of Hyderabad, Hyderabad, India

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LIST OF ABBREVIATIONS

ADMO	Additional District Medical Officer
AIDS	Acquired Immunodeficiency Syndrome
ANCC	Antenatal Care Clinic
ARI	Annual Risk of Tuberculosis Infection
ARTI	Acute Respiratory Tract Infection
AWW	Anganwadi Worker
BHC	BRAC Health Centre
CDPO	Child Development Project Officer
CHW	Community Health Worker
DANIDA	Danish International Development Assistance
DANTB	DANIDA Assisted TB Project
DOT	Directly Observed Therapy
DOTS	The international strategy for TB control
DTC	District Tuberculosis Centre
DTO	District Tuberculosis Officer
ESP	Essential Services Package
FWV	Family Welfare Visitor
GDP	Gross Domestic Product
GoB	Government of Bangladesh
GNP	Gross National Product
HIV	Human Immunodeficiency Virus
HNPP	Health, Nutrition and Population Project
HPSP	Health and Population Sector Programme
ICDS	Integrated Child Development Scheme
IEC	Information Education and Communication
IMR	Infant Mortality Rate
LAMB	World Mission Prayer League
LCC	Long Course Chemotherapy
LTCA	Leprosy and Tuberculosis Control Assistant
LTCP	Leprosy and Tuberculosis Control Programme
MBDC	Mycobacterium Disease Control
MC	Microscopy Centre
NTI	National Tuberculosis Institute
NTP	National Tuberculosis Control Programme
OP	Out patient
ORS	Oral Rehydration Solution
PDP	Participatory Development Programme
PHC	Primary Health Centre
PHI	Primary Health Institute
PO	Programme Organizer
RDP	Rural Development Project
RDRS	Rangpur Dinajpur Rural Service
RHDC	Reproductive Health Disease Control

RNTCP	Revised National Tuberculosis Control Programme
SN	Smear Negative
SP	Smear Positive
SCC	Short Course Chemotherapy
SS	Shasthya Shebika
STD	Sexually Transmitted Disease
STS	Senior Treatment Supervisor
TB	Tuberculosis
TBA	Traditional Birth Attendant
THC	Thana Health Complex
TLCA	Tuberculosis and Leprosy Control Assistant
TRC	Tuberculosis Research Centre
VO	Village Organization



EXECUTIVE SUMMARY

Introduction

The control of TB in many countries is the responsibility primarily of the government. The Ministry of Health in many countries approached this problem up until 10 or 15 years ago by provision of curative services through a limited number of specialized institutions located at selected urban centres. This approach met with only limited success, largely due to the problem of inadequate accessibility. In view of this limited success, the implementation of the internationally recommended TB control strategy, known as the DOTS strategy, requires complementary approaches, including community contribution to TB care.

Background

The “Community TB care in Africa” project was coordinated by WHO from 1996-2000, in response to the particular problem in sub-Saharan Africa of escalating TB rates, fuelled by the HIV epidemic. The project documented experiences from eight districts in six countries using diverse approaches to provide community TB services. As documented literature on community-based DOTS in Asian settings is scanty, WHO commissioned a study examining certain examples in Bangladesh and India to provide an Asian perspective on community-based TB care. This report describes the results of the study.

Study objectives

1. To review documented literature on community-based TB care in Asia.
2. To make field visits to selected community-based TB care projects.
3. To understand, using appropriate methods, the origins, performance, acceptability, effectiveness and sustainability of these projects.

Methods

1. Field visits to five different sites (two in Bangladesh and three in India).
2. Discussions with programme managers and in-depth interviews with field staff of NGOs, public health staff and community-based volunteers using interview guides.
3. Use of secondary sources, published articles, reports and unpublished reports.
4. Data from the quarterly reports of TB programmes and other registers.

Key findings

- 1.** The community-based projects are initiated with the twin objectives of:
a) overcoming the problems of physical access and reducing the patient costs of treatment, and b) maximizing the returns for the infrastructure and human resources available.
- 2.** The initiative for community-based TB care is taken either by the NGOs or by the District TB Control Officers of the public health staff.
- 3.** The community-based projects largely served rural and tribal populations. The projects in the urban areas targeted the slum populations.
- 4.** Components of care rendered in community-based projects are not the same in all projects. The ones which are common in many projects are: i) DOT, ii) default retrieval and iii) identification of symptomatics. The other components considered are i) IEC activity relating to tuberculosis, ii) pre-treatment education of patients and their family members, and iii) sputum microscopy.
- 5.** While in certain projects, members belonging to only one particular community are chosen for all the activities identified for community-based TB services, in certain others, different communities have been mobilised for different roles.
- 6.** The communities from which community volunteers were selected varied across the projects. In the NGO collaborated projects, there is a greater involvement of members of the community in the selection of volunteers.
- 7.** Requisite training for community-based volunteers is largely provided by the NGO supervisory staff when the project involved NGO collaboration. In India, the training is provided to the women and child health workers by the public health field staff under the programme of training of trainers.
- 8.** Strategies for care provision varied according to who is providing the care and also the place where the care is provided. As regards DOT, the community volunteers or CHWs administering the medicine at home allowed greater flexibility of time and place, and hence relatively greater acceptability. The defaulter retrieval is achieved mostly by fulfilling the socio-psychological needs of the patient, either by themselves or by mobilizing the community support. The paid NGO workers depended on intensive health education for default retrieval.
- 9.** Supervision of the performance of community-based volunteers is the responsibility of both the NGO staff and the public health staff.
- 10.** Incentives for the community-based volunteers were of a different nature in different projects. The volunteers received cash incentives in certain projects, while in others, they served on a purely voluntary basis. In some, the volunteers rendered services for informal and intangible rewards.
- 11.** Comparison of cure rates, the proportion of sputum positive to sputum negative cases, and the proportion of women to men reveal that the community-based TB projects are as effective as, and in some cases, more effective than projects which are not community-based. Documented experience also points out that community-based projects resulted in improving the performance by 20% to 50% with regard to both case finding and cure/treatment completion rates.

12. With regard to acceptability, it is clear that members of only certain communities will be acceptable as providers of community-based services. While the community-based DOT is an appropriate answer to the problems of the stigma associated with TB in some cases, stigma is also the reason for non-acceptance of community-based DOT in case of others.

Recommendations

1. When the problem of access is the key factor influencing the effective implementation of the DOTS strategy, NTPs need to consider all possible means of harnessing the community contribution to TB care.
2. When community-based TB projects are considered, opportunities to integrate such projects with already established and highly successful community-based health and rural development projects need to be first explored, as in such cases the projects will achieve sustainability and also result in greater success.
3. There is a need to establish effective communication between the community TB treatment supporters and the health units. This can be achieved by regular review meetings, through the involvement of NGOs and constituting joint supervisory teams.
4. Periodic refresher training for community-based volunteers is necessary. The training should be very role specific.
5. Community-based volunteers do not replace, but complement, the public health staff in the provision of TB services. Patient choice for DOT and other services needs to be completely respected.
6. It is necessary to ensure recognition of services rendered by the community TB supporters in the ways best appreciated by them, to sustain their interest and commitment.

BACKGROUND

The “Community-based TB Care in Africa” project was launched in 1996 and has been coordinated by WHO. The project set out to evaluate how communities can contribute to TB care in countries where HIV is highly prevalent and fuelling the TB epidemic, with the result that government health facilities may be failing to cope with increased TB case rates. Three aspects of these projects have been studied: effectiveness (TB programme performance), acceptability, and cost-effectiveness. Well-documented experiences from 8 district-based projects in 6 African countries using diverse approaches to provide community-based TB care were presented in a “lessons learned” workshop in 2000.¹

Many Asian countries have a long experience of community contribution to TB care, but the documented experience in countries in Asia is scanty. WHO commissioned a study of examples of community contribution to TB care in Asia, comprising a literature review and field visits to sites selected in consultation with WHO regional and national level staff.

1.1 STUDY OBJECTIVES

1. To review the documented literature on community-based TB care in Asia.
2. To make field visits to selected community-based TB care projects.
3. To understand using appropriate methods, the origin, performance, acceptability, effectiveness, and sustainability of the projects.

1.2 GUIDE TO EVALUATING PROJECTS THROUGH FIELD VISITS

The following points were considered while reviewing the projects/programmes:

- NTP and context description; evolution of DOTS strategy; site-specific justification for community-based TB care.
- Site-specific “meaning” of community-based TB care and description of components of care which are community-based.
- Characteristics of the community where the programme is based, e.g. rural, urban, slums, particular income-groups.
- Community-based care provider: who provides ? what care tasks ? and how ?
- Process of selection, training, retraining, and supervision of the community-based TB care provider.
- Incentives for the community-based TB care provider: cash, kind, formal, informal or purely voluntary?
- Assessment of acceptability by the community.
- Assessment of accountability to the TB programme and to the community.
- Measures for performance of the community-based TB care provider.
- Effectiveness in terms of the usual TB programme indicators, e.g. case-finding and treatment outcomes, and costs (if available).

- Factors favouring and not favouring sustainability of community-based TB care components within the ongoing programme.
- Similarities and differences between the projects/programmes.

1.3 INTRODUCTION TO LITERATURE REVIEW AND FIELD VISITS

The concept of community participation

Development theorists and practitioners have used the term “*community participation*” (or one of its variants, e.g. “*community involvement*”, “*community contribution*” and “*community-based*”) quite widely since the 1970s. These terms have been used in the context of a model of development known variously as “*alternative development*”, “*participatory development*”, “*another development*”, “*people-centred development*”, “*counter development*” **and** “*participatory development*”.² This model was viewed as the antithesis of the top-down model adopted previously and is essentially based on the premise that: i) poverty is structural and is deeply rooted in economic and political conditions that influence peoples’ livelihoods and ii) development projects and programmes have largely bypassed the vast majority of people.³

The concept of community participation entered the health field too. Member states of the UN in the Alma-Ata declaration sought commitment for “health for all by the year 2000”. This was to be achieved through the strengthening of primary health care (PHC), an important element of which was “more effective community participation in services and structures”. It meant communities identifying their own health needs and assuming responsibility for their own health development.⁴ Community participation came to be viewed as the most critical element of PHC development.

The term “community participation” gained greater currency, with different interpretations. For instance, participation has been viewed as “agreement to and control over resources” or “specific targeting of projects benefits to previously excluded groups”. There are two broadly different interpretations: one meaning participation as a means and the other meaning participation as an end.⁵ Rifkin noted the different levels of participation in the context of health care, and pointed out participation in terms of involvement of local people in programme planning or in translating their felt needs and interests into grass roots development as only one of these levels, which is rarely achieved.⁶

In the context of tuberculosis services, community participation meant anything from mere acceptance of the services to involvement in provision of certain services voluntarily or on payment of some incentive. Citing the distinction offered by Rifkin⁷ in this regard between two approaches (medical and health services approaches) in direct participation, Maher⁸ concluded that there appears to be limited experience of the health services approach to community-based tuberculosis control (defining community participation as the mobilisation of community members to take an active part in delivery of health care).

1.4 THE NEED FOR COMMUNITY CONTRIBUTION TO TB CARE

The control of tuberculosis in many countries is the responsibility primarily of the governments of the respective countries. The Ministry of Health in many countries approached this problem up until 10 or 15 years ago by provision of curative services through a limited number of specialized institutions located at selected urban centres. This approach met with only limited success, largely due to the problem of inadequate accessibility.⁹ In view of this limited success, the implementation of the internationally recommended TB control strategy, known as the DOTS strategy, requires complementary approaches, including community contribution to TB care.

The recommendation to integrate the National Tuberculosis Control Programmes (NTPs) with general health services is aimed at addressing the problem of access.¹⁰ However, even this does not ensure that effective tuberculosis care is available at an accessible distance to the entire population.¹¹ The increase in the tuberculosis burden on the one hand and the more widespread implementation of the internationally recommended DOTS strategy for tuberculosis control on the other, demand alternatives which can overcome the limitations of public health services. There is increasing recognition of the need to harness the community contribution for effective tuberculosis care.¹² Further, it is held that "contribution of communities to tuberculosis care represents a particular aspect of the more general issue of community participation in Primary Health Care".¹³

LITERATURE REVIEW OF EXPERIENCES OF COMMUNITY CONTRIBUTION TO TB CARE IN ASIA

There is little published literature on community-based TB care in Asian countries. Maher¹⁴, in his review article published recently, provided the details of nine studies during 1978 and 1997, of which five pertain to Asian countries. He mentions a possible under-reporting of community TB care projects, on account of low priority given to research on NTP service delivery. A further search for the published literature on community-based TB services for the purpose of the present assignment resulted in identification of a few more studies from India, Nepal and Bangladesh. The studies reveal that community TB services have been explored in various socio-cultural settings and that a range of communities have been involved with different means. All these projects pointed out acceptability of the services and recorded that the effectiveness is better than that of programmes operating only through public health institutions. The following table shows the key features of these studies.

YEAR	SETTING	COVERAGE	COMMUNITY INVOLVED	COMPONENTS OF CARE PROVIDED	EFFECTIVENESS
1982 ¹⁵	Tribal hamlets in Tamilnadu, India	Hamlets: 62 Population: 96,000	Literate tribal youth	Identification of symptomatics; Sputum collection and transportation	Increase in the case finding by 20%
1997 ¹⁶	Slum areas in Madhurai city in Tamilnadu, India	46,000	Student volunteers	Drug dispensing Chasing of defaulters	Treatment completion rate of 83% Default retrieval successful on 57% occasions
1987 ¹⁷	Rural villages in Tamilnadu, India	Villages: 44	Dais (TBAs)	Identification of symptomatics; Collection and transportation of sputum samples; Distribution of drugs; Monitoring drug consumption.	600 symptomatics identified in 5 years; (Sputum positive cases: 2.8%) Cure rate: 85%
1997 ¹⁸	Slum areas in Ahemadabad city, India		CHWs	Identification of symptomatics; Patient motivation to complete treatment Monitoring drug consumption; default retrieval maintaining of drug stocks	Identification of 382 sputum positive patients during 4 years Cure rates of 82% - 93%

YEAR	SETTING	COVERAGE	COMMUNITY INVOLVED	COMPONENTS OF CARE PROVIDED	EFFECTIVENESS
1992 ¹⁹	Hill districts in Nepal		Traditional healers	Identification of symptomatics	Improvement of out patient attendance in PHIs One-third of diagnosed patients are referred by healers
1997 ²⁰	Rural community National Demonstration Centres (4), Nepal		Social Workers and Community Workers	Direct Observation of Treatment and default retrieval	85% cure rate
1990 ²¹	Urban and Rural settings, Philippines		Lay and Church group volunteers	Observation of Treatment	90% cure rate in rural areas; 80% cure rate in urban areas
1991 ²²	Rural Thanas in Bangladesh		CHWs	Identification of symptomatics; Referral and Follow up Drug distribution and monitoring of consumption Default retrieval; Health education	Improvement in case finding Cure rate of 66.3%
1996 ²³	Rural and urban provinces	Through out the country	Village Doctors	Direct Observation of Treatment	90% cure rate among new sputum positive patients 81% cure rate among previously treated patients

CASE STUDIES OF COMMUNITY CONTRIBUTION TO TB CARE IN BANGLADESH AND INDIA

Field visits were made in order to evaluate selected community-based projects. The observations relating to organization of community-based TB services, their acceptability and effectiveness, based on this review, are presented below.

3.1 CHARACTERISTICS OF POPULATIONS COVERED BY THE PROJECTS

Projects of community-based TB care both in India and Bangladesh largely covered rural and tribal communities. This is particularly relevant in view of the problems of access to public institutions for the members of these communities affecting early diagnosis and compliance to treatment. However, there are also projects based in urban population in cities or based in industrial population in semi-urban areas. Some projects launched in cities specifically targeted the slum population. Appendix 8 provides details of the characteristics of the populations covered by the projects reviewed.

3.2 JUSTIFICATION FOR COMMUNITY CONTRIBUTION TO TB CARE

In Bangladesh the initiative for the community involvement to render certain TB services is largely taken by the some established NGOs with which the government of Bangladesh is collaborating for the implementation of the National Tuberculosis Programme. The Bangladesh Rural Advancement Committee (BRAC) collaborates with the government of Bangladesh to render TB services by integrating the TB programme from the start with its other community-based health and rural development programmes. BRAC built on earlier successful experience in selected areas.

Public health functionaries in India have largely taken the initiative for community-based TB services. This mostly involves the Anganwadi Workers of the ICDS projects available in each of the rural villages. The partnership with NGOs for rendering TB services is only on a limited scale. However, in some cases NGOs have taken the initiative to organize community-based services by involving local youth, private medical practitioners and paid NGO workers.

The justification for organizing community-based TB services varied slightly from site to site. In Bangladesh the justification given by BRAC for selection of specific Thanas for implementation of the NTP by it through community involvement included:

- Successful mobilization of community groups and existence of strong community-based rural development programme.
- Existence of HNP programme and trained community health workers in each

- village, providing opportunities to integrate TB services with other programmes.
- Existence of infrastructural facilities including Shushathos (BRAC health centres) and supervisory staff for providing technical and clinical back up.
- Comparatively inadequate government health infrastructure and human resources.

HEED (another NGO in Bangladesh) has chosen specific Thanas for implementing the community-based TB programme for the following reasons:

- Opportunities to integrate the programme with its community-based leprosy control programme in such Thanas.
- Comparatively inadequate government health infrastructure and human resources.
- Experiences of successful mobilization of community groups for organizing women's groups for thrift and micro-credit.

The justification for evolving strategies for community-based DOT by district level TB managers in Khenjohar district in India was given as:

- Presence of significant tribal population living in small settlements and inadequate health staff for extension of services at an accessible distance to these populations.
- Multiple roles of health staff and perceived limitations of them in providing TB related services, particularly keeping in view the geographical coverage of these workers.
- Limitations of non-tribal health workers in motivating the tribal patients for completion of treatment by mobilizing the community support.
- Inadequate transport facilities resulting in difficulty for patients to reach the health functionaries/health centres promptly.

Considerations for organizing community-based DOT through mobilizing private medical practitioners and other volunteers by ACT (NGO in Madras in India) included:

- Inability to participate in the programme by the patients due to distances they need to cover to reach public health facilities.
- Inconvenient clinic timings of the public health institutions.
- Social stigma associated with TB and the desire to maintain the secrecy of the treatment.
- Inability of the public health functionaries in meeting the socio-psychological needs of the patients.

Another NGO, SEWA, preferred a community-based TB programme in the areas it has chosen to implement the RNTCP in the city of Ahemadabad in Gujarat, as it was thought that this strategy will help to overcome the following problems:

- Distance to public health facilities.
- Poor economic status of the residents and their inability to meet the direct and indirect costs of treatment from the public facilities.

- Social access due to the ethnic and class identities of the patients and providers of the treatment in public facilities.

SEWA's desire for a community-based TB programme builds on its successful mobilization of community groups for organizing community-based health and other development programmes targeted to women, and takes the opportunity to integrate the TB programme with such programmes.

3.3 COMPONENTS OF CARE RENDERED

The components of care rendered in different community-based projects as well as the ways in which the services are organized are not the same. In some projects (e.g. BRAC, SEWA and HEED), the NGOs have been given complete responsibility for implementation of NTP activities in specified geographical areas. The components of care rendered included: sputum microscopy through the establishment of microscopy centres; collection of sputum samples from the symptomatics by organizing the static and mobile sputum collection centres; health education relating to TB; identification of symptomatics and referral to the diagnostic centres; pre-treatment education; Direct Observation of Treatment (DOT); default retrieval. In projects like in Khenjohar district in Orissa, India the services are limited and included identification of symptomatics and referral and DOT. The ACT project in Chennai City in India restricts itself to organizing DOT and default retrieval.

3.4 WHO PROVIDES THE CARE?

Where the components of care rendered included sputum microscopy, the trained laboratory technicians appointed by the NGOs provide the services. In the SEWA project, two microscopy centres are set up, providing services at an accessible distance. While one centre is managed by two laboratory technicians, four laboratory assistants and one Dai, the other is managed by one laboratory technician and a Dai. In the case of projects run by BRAC, laboratory technicians appointed in each of the BRAC health centres (BHCs) undertake the sputum microscopy. In HEED projects in Bangladesh, 2-3 tuberculosis and leprosy control assistants (TLCAs) appointed by the NGO, render assistance in sputum microscopy to the laboratory assistants in the government Thana health complexes (THCs). The sputum collection centres in the SEWA project are managed by the trained CHWs working full time, and in the BRAC operated projects, by the paramedical staff of the BHCs.

The CHWs available in each of the villages in the projects operated by BRAC undertake activities including health education relating to TB, identification of symptomatics and referral, DOT and default retrieval. In the Thanas managed by HEED, these activities are performed by the TLCAs. However, the TLCAs undertake the DOT only at the THCs. The first dose of the week is administered by the TLCAs at the THC and the rest of the doses for the week are distributed to the patients for consumption at home. The TLCAs identify one of the family members of the patients for administration of medicine at home. In Khenjohar in Orissa, the community based child health worker (AWW) available in each tribal settlement oversees DOT and default retrieval. The full time CHWs in the

SEWA project take care of health education relating to TB and identification of TB symptomatics. DOT and default retrieval are undertaken by some volunteers living in the neighborhood. In the ACT project, DOT is undertaken by a community volunteer, who may be a family physician, staff member of a nursing home or a hospital or any other who is residing in the same locality. Full time employees of the NGO take the responsibility of default retrieval.

3.5 SELECTION OF COMMUNITY-BASED WORKERS UNDERTAKING TB SERVICES

3.5.1 SEWA PROJECT

SEWA organizes health care for all its members and also for their family members through its social security organizations formed by the actual caregivers. The health cooperatives formed at each locality are promoted to be self-reliant and sustainable. The members of local cooperatives with the assistance of “*arogya karyakarta*” (health organizer) of SEWA select one of their members who is dynamic and committed to being their “health worker” and to provide 14 different health services after an intensive training.

The selection of community volunteers for DOT was made by the local SEWA “*arogya karyakarta*” in consultation with the local health workers and the *agewans* of the SEWA health cooperatives. The selection was primarily based on factors such as their association with SEWA, community rapport, earlier involvement in SEWA's other programmes (e.g. *balwadi* teacher), proven commitment to service (e.g. member's participation in health activities organized by SEWA such as eye camps, Family Planning camps, campaigning for clean and green city, workers rights), enthusiasm of the members to undertake TB services, availability at home during most of the daytime, family members support for undertaking TB services.

3.5.2 BRAC PROJECTS

Health interventions, as in the case of others relating to nutrition or rural development, are introduced/undertaken by the BRAC by mobilizing the members of targeted groups for collective action to address their felt needs. The BRAC Programme Organizers (POs) visit the selected villages and meet the targeted women in groups and individually to discuss the need for community action, and demonstrate the advantages of collective action. This initiates the process of formation of village organizations (VOs). Ideally each VO comprises of members of 40-50 households.

Once a VO is formed, the members are facilitated to select a dynamic member to act as *Shasthya Shebika* (village health worker) to provide selected health services. The *Shasthya Shebika* activities include: health teaching in mothers' clubs; immunization; treatment of conditions such as diarrhoea, dysentery; fever, pneumonia, wounds, ear and eye infection, and night blindness; referral of complicated cases to *Shasthya*; conduction of safe delivery; and providing health education on personal hygiene as well as prevention of diseases.

3.5.3 KHENJOHAR PROJECT

The *anganwadi* workers (AWWs) are community-based child health workers under the government's Integrated Child Development Scheme (ICDS). These are women with at least primary education belonging to the same village where they are expected to serve. Their selection is made after an assessment of their commitment by the ICDS functionaries at the district level and in consultation with the local political representatives to ensure their acceptability.

3.5.4 ACT PROJECT

In Chennai, India, the volunteers to supervise DOT are identified by the patients themselves in consultation with the private medical practitioners who diagnosed their disease. However, the social workers employed by the NGO ascertain the commitment and ability of the volunteers to meet the socio-psychological needs of the patients before accepting the proposal of the patients and their doctors.

3.6 TRAINING OF COMMUNITY-BASED HEALTH WORKERS

The CHWs of SEWA received their initial intensive training for rendering the 14 different health activities identified by SEWA at the SEWA training centre itself. The health coordinators and *arogya karyakartas* of SEWA imparted the training for about 30 days. Thereafter they also received one day's refresher training each month at the head office of SEWA. The CHWs and other community DOT volunteers received job-specific training for DOT for two days at the government chest hospital. The refresher training programmes for the SEWA CHWs incorporated TB services. Further once a month refresher training programmes are being organized for DOT volunteers also.

The Shasthya Shebikas (CHWs in BRAC projects) are trained at the BRAC training centres initially for seven weeks to provide a range of health services. The participatory training activity also includes socio-psychological issues such as community organization and dynamics, gender discrimination and motivation. For the purpose of tuberculosis care, the health workers are further trained for five days on the specific role expected of them, including supervising DOT. The workers are also called for one-day refresher training every month to the BRAC Shushatho. The Programme Organizers, the Quality Control Managers, and the Medical Officer of the Shushatho impart the training.

The AWWs in the Khenjohar project have been trained for the specified roles of health education and IEC activities, identification of symptoms and DOT by the district programme managers by organizing training of trainers. The Medical Officers of the PHCs along with the senior treatment supervisor (STS) provided the necessary training in small groups. The training was participatory in nature and involved techniques such as role-playing. However, when needed, the Multipurpose Health Workers also undertook "on the spot training".

No formal training is provided to the DOT providers in the ACT project. The social workers of the NGO give them "on the spot training" at their homes on dispensing

drugs, the need for follow up sputum examination, possible side effects and the procedure for filling the treatment cards.

3.7 HOW SERVICES ARE PROVIDED

The table shows the details of how the important services are being provided by the community-based workers/volunteers in different projects:

Service	Project				
	BRAC	HEED	SEWA	KHENJOHAR	ACT
IEC relating to TB	* By SS during her routine home visits * By POs during their field visits	* By the LTCAs during their field visits	* By CHWs during their routine home visits * By CHWs during health camps * By CHWs to the members of patients' family after the initiation of treatment	* By the AWWs during their routine home visits * By AWWs by organizing formal group meetings	
Identification of symptomatics	* By SS during the home visits * By POs during their field visits * By MOs of BHCs from OP attendance	* By the LTCAs during their field visits	* By CHWs during their routine home visits * By CHWs through enquiries with the Sevikas and Agewans of the local units of SEWA * By CHWs during health camps * By the CHWs at fixed health centres	* By the AWWs during their routine home visits * By the AWWs through informal inquires with members of the community	* By the PMPs participating in the project
Treatment initiation	* By the SS at her home after proper introduction of the patient by the PO and execution of a bond by the patient for completion of treatment with signatures of two community members as witness to the agreement and paying a deposit of Tk 200	* By the TLCAs soon after the diagnosis at the THCs	* At the residence of the DOT volunteer after formal introduction by the SEWA staff	* At the residence of the AWW after formal or informal communication of the diagnosis and the treatment prescribed or at the local P.H.C by the Health Worker in her presence	* At the residence or work place of the DOT volunteer after a formal introduction (and spot training, if necessary) by the ACT social worker/volunteer

DOT	* At the SS residence but allows flexibility of timings	* At the THCs * No flexibility regarding time and place	* Mostly at the residence of the DOT volunteer * Allows enough flexibility regarding both place and time	* Mostly at the AWWs residence or at her work place * Allows flexible timings and ready to administer at the residence of the patient	* Strictly at the residence or work place of the DOT volunteer * rigid timings, if the DOT is at the work place
Default retrieval	* By seeking the counseling by the BRAC health staff Ensuring to fulfil the socio-psychological needs of the patient and his/her family members	* Through intensive health education to the members of the family	* By health education to the members of the family and the patient * Ensuring to fulfil the socio-psychological needs of the patient and his/her family members	* Mobilising the community support for motivating the patient and for fulfillment of socio-psychological and economic needs of the patient * By managing to put community pressure by way of formal or informal sanctions	* Through intensive health education * By seeking the support of ACT social workers for counseling and motivating

3.8 SUPERVISION OF COMMUNITY-BASED WORKERS

Both BRAC functionaries and the government functionaries responsible for the NTP, particularly the District Civil Surgeon, closely monitor the services provided by the Shasthya Shebikas in the BRAC projects. The POs in the BRAC areas provide the first level supervision, while the Quality Control Managers (Health) form the second level. In addition to them, the Medical Officers of the BHC, Project Manager (at the district level), Zonal Medical Officer (Regional level) and Senior Sectoral Specialists (Central level) also periodically supervise the activities of the lower levels of supervisors. Further, the Monitoring and Internal Audit department as well as the Research and Evaluation department of BRAC also conduct systematic checks and give feedback to the BRAC health team members. The supervision is very intensive. The review of treatment cards of selected patients revealed that the patients have been visited a minimum of 6-8 times during the intensive phase.

To ensure treatment completion by all the TB patients, the SEWA health team evolved procedures for close monitoring and supervision. The laboratory assistants as well as the laboratory technicians routinely visit selected DOT providers each afternoon and see that every DOT provider is visited at least weekly to find out whether or not the patients under their observation are complying with the treatment. However, the visit of the SEWA health workers or others, and the specific action taken, is not properly recorded anywhere. The diary maintained by the workers only reveal "visit" to particular patient(s) on a particular day. The performance of the DOT providers is also monitored by the STS appointed by the local Municipal Corporation.

The multipurpose health workers of the local PHC closely monitor the activities of the AWW by visiting them at least once every month. The STS under the RNTCP appointed at each sub-district level would visit every patient at least once during each phase of treatment. The MOs also periodically supervise the activities of the AWW particularly when the lower level health staff report a need for it. The ICDS supervisors as well as the Child Development Project Officers (CDPOs) also periodically review the TB services along with other ICDS services during their sector meetings. However, the health staff as well as the ICDS staff do not always make it a point to record their supervisory action on the treatment cards or in any other register with the AWW. This makes it difficult to quantify the degree of supervision.

While the performance of community-based DOT providers in the ACT project is monitored by the social workers appointed by the NGO, the performance of TLCAs in the HEED project is monitored by the Medical Officers of the project employed by HEED, as well as the Civil Surgeon of the local THC.

3.9 INCENTIVES PROVIDED TO THE COMMUNITY-BASED HEALTH WORKERS

As stated before, different categories of communities have been involved in the SEWA programme. The rewards are not the same for all of them. The CHWs who act as DOT providers, besides rendering other services related to TB, do not receive any extra cash payment for their service. TB services rendered by them are considered part of their role. However, some CHWs do admit that “treating TB patients is an opportunity to prove their commitment and dedicated service”. Curing TB patients enhances their status, gives popularity as efficient health worker and therefore influences acceptance of their other services which would increase their incomes.

The SEWA members (*sevikas*) or leaders (*agewans*) who act as DOT providers do so purely on a voluntary basis. They have different perceptions of their service. Many however, believe that serving the poor TB patients will result in some reward by God. Rukmini Ben thinks their polio-affected son will be helped by God to have a good education and a good job so that he will be able to get married and lead a decent life. Leelben asks “how would I find reason when my son escaped unhurt in one major road accident. Is it not the reward by God for my service”? One *agewan* explains her decision to serve in a different way as she states, “I do not require any reward. I only wish that my children at least learn that helping others is a highest value for human beings and without that value we are just not human beings”.

The *sevikas and agewans*, though working purely on voluntary basis may enjoy some indirect benefits. Their services may be recognized in terms of either opportunity provided for self-employment through SEWA's other schemes or favourable consideration for their requests for housing loans.

The Shasthya Shebikas in BRAC projects do not charge for their TB or other services (except in case of deliveries), but charge for medicine (not for TB) at a slightly higher rate, though still cheaper than the rate at the pharmacy in town. The medicines are sold

at a slightly higher price to those who are not members of their Village Organization. They also earn from sale of intravenous fluids and other goods (generally to promote health and hygiene, e.g. iodized salt, soaps, detergents), by referring patients to BRAC health centres, and by promoting the use of bore wells and individual latrines. The income from commissions varies from one worker to the other and from one month to another. The interviews revealed a monthly income of 350 – 600 rupees per month. For providing DOT, the Shasthya Shebikas retain a part of the amount deposited by the patients at the start of the treatment.

The AWWs in Khenjohar receive an honorarium of 500 rupees per month towards their services relating to ICDS. They are not paid any extra amount for their TB related services. The interviews with AWWs revealed that they will be happy if some monetary incentive is considered for the TB related services. However, a majority of them (about 80%) are willing to continue to render TB services even without any monetary incentive. Mrs Guddi stated " I expect some monetary incentive because we are also poor. We are no longer part-time employees. With so many responsibilities and frequent visits of officials, I am unable to go for any other work. I am so much occupied with different activities that sometimes I am forced to engage labour to work in our agricultural fields". She continued "...but I will continue without incentive also. It gives great satisfaction to me when someone of my own community gets cured of TB because of my effort. I, and also my family members, feel proud when patients publicly appreciate our effort".

In the HEED project in Bangladesh, the TLCAs are paid monthly salaries and hence no additional incentives towards their TB services. Though the community-based volunteers for DOT in ACT project render the services purely on a voluntary basis, the social workers who render certain other services are paid an honorarium on a monthly basis by the NGO.

3.10 SITE-SPECIFIC MEANING OF "COMMUNITY CONTRIBUTION"

The nature of the community contribution in providing TB services as revealed in the above account is definitely not the same in the case of each of the five projects reviewed. The projects are community-based in several different senses. The specific meaning it connoted to the project organizers is set out as follows.

3.10.1 BRAC projects

- Provision of certain services with some nominal incentive by members of the community chosen by the members of the same community to which they belong.
- Rendering TB services through the health infrastructure of the NGO.
- Community support to the patients in several ways, including monetary support, as for example in the case of raising funds for the deposit amount.
- Indirect and direct involvement of community members other than the CHWs, in the provision of certain services such as default retrieval, social and moral support to the TB patients and their families.

3.10.2 HEED PROJECTS

- Provision of TB services by the health staff of an NGO (not for profit) for some nominal honorarium.
- Rendering TB services through the health infrastructure of the NGO.
- Undertaking the TB services by mobilising community action.

3.10.3 SEWA PROJECT

- Direct involvement of community members and volunteers in the provision of certain services (e.g. health education, increasing awareness of availability of free and quality treatment in public facilities for TB, DOT, default retrieval and social support to patients for completion of treatment).
- Provision of services purely on a voluntary basis by the members of the community.
- Community participation in decision-making relating to provision of TB services (e.g. establishment of sputum collection centers, selection of CHWs).
- Provision of facilities by community for providing TB services (e.g. space/building for running a health center/sputum collection center).
- Mobilizing funds to meet part of the expenses relating to TB care services (e.g. organizing economic activities by forming a cooperative).
- Indirect involvement of community members/volunteers in the provision of certain services such as default retrieval, social and moral support to the TB patients and their families.
- Direct and indirect support to cured TB patients.

3.10.4 KHENJOHAR PROJECT

- Provision of services of DOT (including default retrieval) and also IEC relating to TB by certain members of the community with whom the patients identify, without payment of any incentive.
- Community involvement in fulfilling the socio-psychological and economic needs of the patients.
- Community recognition for the services rendered by the volunteers and community action on patients failing to comply with the treatment.

3.10.5 ACT PROJECT

- Provision of certain services such as DOT by members of the community purely on voluntary basis.
- Provision of certain services by TB volunteers for some nominal honorarium.
- Mobilising funds for rendering TB services from non-governmental sources.

RESULTS

4.1 ACCEPTABILITY

4.1.1 BRAC PROJECTS: ACCEPTANCE OF SHASTHYA SHEBIKA SERVICES

The TB services of the community-based health workers at present are by and large acceptable to all sections (community members, patients and the public health workers). Initially, however, the Shasthya Shebikas, particularly the younger ones, faced resistance from the elderly members, more particularly, the religious leaders and the other men. The resistance was in view of the religious sanctions for Moslem women to go out to public places and interact with "other" men. Some workers narrated that their experiences almost followed us whenever and wherever we went and constantly watched our character". Some others revealed that they had been warned that after her death their dead bodies would only be covered with a black cloth. One other narrated how the villagers made a fence across the private road to stop her coming to that part of the village.

According to the health workers, they could overcome the initial resistance with their dedicated services to all, including to the same persons who opposed them. The TB services provided by them are acceptable to the patients and their family members in view of the increased access (and so also reduced costs), emotional support and their confidence in their knowledge about TB treatment. The services are acceptable to the public health workers because: i) they are convinced by the skills and training of the Shasthya Shebika; and ii) it lessens their work load and so they are able to give more time to other activities.

4.1.2 SEWA PROJECT: ACCEPTABILITY OF CHWs AND COMMUNITY VOLUNTEERS

Accessibility (distance, travel time and transportation facility) is an important but not a determining factor for TB patients' choice of a particular provider for patients in the SEWA project. The data shows that out of all the patients treated under the DOTS strategy from January to December 1999, the proportion of patients who chose the DOT at the microscopy centres to those who preferred to go the community-based DOT provider was 53% to 47%. It also needs to be noted that majority of those receiving drugs from a community member have preferred a CHW or other paid worker of SEWA. The patients have not always preferred a member of the local community closest to their residence. The patients belonging to Asarwa locality chose to go to the civil hospital for DOT and covered a distance of about 4 km to reach the facility. As many as 347 patients of Asarwa locality preferred to go the civil hospital, even though they had the option to choose one of the seven community DOT providers available in their area. The following led patients to choose DOT at

the microscopy centres in many cases:

- Desire to maintain secrecy about the disease, particularly in the case of women.
- Belief that health workers at the microscopy centres are qualified and educated and so will be able to provide better services (e.g. appropriate dosages, management of minor side effects).
- Assumption that they have to necessarily adjust to the convenience of the DOT provider.
- Conviction that community volunteers have no or less accountability whereas the staff at the microscopy centres being “paid workers” have greater accountability.
- Problems of social access like acceptability of DOT from Gujarati speaking DOTS provider by non-Gujarati migrants of Uttar Pradesh and Bihar.

The provision of TB services through the community-based workers is not totally acceptable to health workers of all levels. However, it was generally agreed that even though many patients prefer to go to health centers, involvement of community-based workers is necessary in particular cases, particularly the old and the very poor, who cannot visit the health facility every alternate day for their DOT. The community-based workers are not acceptable to the health officials for the reason that it is difficult to guarantee accountability in their case. Some thought there is need for more “intensive supervision” when the community-based volunteers are preferred to health workers for the DOT and other services. One supervisor thought that his workload had increased with the involvement of community-based workers. He stated “if it were to be health workers of government, I will have a number of opportunities to review the work in the meetings. I can also call a meeting of all DOT providers exclusively to review the TB work. I can ensure that all attend the meeting. Calling a meeting of the community volunteers will not work. I cannot ensure attendance of all. I have to personally visit all of them. This means more work”. Some health officials observed that the community-based providers cannot retrieve the defaulters as successfully as the trained health workers since they lack the necessary skills and medical knowledge to convince the patients. Further they also expressed their doubts about the amount of “community support” one can mobilize in urban areas in retrieving the defaulters, as the community sentiments here are not as strong as those in rural areas.

The interviews with the community members revealed general acceptance of community-based care for TB patients. Many felt that treatment through the community members is an assurance to the patient that drugs are free and available for the entire period of treatment. Many also felt that it will increase adherence to treatment as the patients do not need to travel long distances and also do not need to go at fixed times. Furthermore, it was also thought that the family members and community members can put greater moral pressure on the patient to continue the treatment. However, the neighbours of the DOT providers often felt that the community volunteers should undertake the DOT at a public place some distance from the residential area. Shashiben, a CHW of SEWA accepted the responsibility of DOT for patients in her locality. The patients were coming to her residence for drugs. Her neighbours objected to her undertaking this activity because they felt that they might also suffer from TB sooner or

later. Leelaben was advised by her neighbours not to accept the responsibility of DOT at her residence for many patients and also that, instead of her offering a glass of water, she should insist that the patients should come with a glass of water to prevent her family members and others living close by getting TB.

4.1.3 KHENJOHAR PROJECT: ACCEPTABILITY OF AWWs

TB services rendered by the AWWs are generally acceptable to the patients for the following reasons:

- It enabled the patients to obtain drugs within the village and so reduce direct and indirect costs of the treatment.
- Being members of their own community they are more “understanding” and so allow for flexibility as regards to timings and place of DOT.
- Perceived higher levels of social accountability as the services of AWW are viewed as a fulfillment of social obligation.

Not all the services of the AWW are unanimously acceptable to the health functionaries. A study by the DANIDA-assisted TB project (DANTB) in the three districts also revealed that about 40% of the health workers thought that the AWW are not competent to render the TB services. It was thought by the health workers that AWW would best be involved in IEC activities rather than as DOT providers. They held this view because AWWs do not possess the minimum education and skills for record keeping and observation of side effects. Furthermore, they thought that the AWW, precisely because they are from the same village and many times related, allow many concessions to the patients including not strictly adhering to DOT. Some health workers felt that the AWWs have too many roles and are paid too little to demand dedicated work. The medical officers felt that the patients will hesitate to complain against the AWWs who fail to provide services as i) the community members may feel that they have no obligation to render TB services, and ii) they have an obligation to protect the interests of the AWW who is after all their own community member.

4.1.4 ACT PROJECT: ACCEPTABILITY OF COMMUNITY VOLUNTEERS

The question of non-acceptability of services by community volunteers rarely arises as the patients themselves identify such volunteers according to their needs.

4.2 EFFECTIVENESS

4.2.1 BRAC PROJECT

For the purpose of understanding the effectiveness of community-based TB services, data has been obtained from two selected Thanas and compared with the achievements of the NTP as a whole. Comparative data available for two districts (one BRAC and one Government of Bangladesh area) have also been considered.

The treatment outcomes in the two select Thanas covered by BRAC, are very impressive. The cure rates in the first two quarters of 1999 were 85.54% and 87.5% respectively. The cure rate is over 85% since 1995 in the selected Thanas. The cure rate was as high as 91.7% in 1996 in Bogra Shadar sub-district. The data reveals that the cure rates are higher in the two sub-districts as compared to the NTP achievement for the country as a whole. While the cure rate in the NTP for the country as a whole increased from 79% in 1995 to 82% in 1998, the cure rates recorded in the selected Thanas remained over 87.5% during the same period.

Data also reveals that cure rates are not only high in the two selected sub-districts, but also in the whole of the run by BRAC as compared to the cure rates in the Thanas where the programme is being implemented by the Government of Bangladesh. Table 3 shows the treatment success rates in new sputum smear-positive TB treated under the DOTS strategy by year in the two areas.

That the community-based TB care in the areas run by BRAC is as effective as the other models has been established in an earlier study. The treatment outcomes of patients registered in the year 1997 in two districts, one where BRAC, and the other where the Government of Bangladesh implements the programme, have been compared for the purpose. Table 4 shows the cure and default rates, which are similar in the two areas.

The proportion of women in the total number of cases diagnosed (Table 5), as well as the proportion of sputum positive cases to the total cases (Table 6) is also higher in the case of community-based TB programme implemented by BRAC.

TABLE 1 TREATMENT OUTCOMES % IN BOGRA SHADAR AND PHULPUR THANAS

Year	Bogra Shadar			Phulpur Shadar		
	Cured	Defaulted	Others	Cured	Defaulted	Others
1995	87.7	2.0	10.3	-	-	-
1996	90.2	2.4	7.4	-	-	-
1997	92.4	0.6	7.0	95.3	0.9	3.8
1998	94.9	0.6	4.5	85.9	2.6	11.5
1999 Q1	85.2	0.0	14.8	88.1	2.4	9.5
1999 Q2	87.5	4.1	8.4	89.5	1.2	9.3

TABLE 2 TREATMENT OUTCOMES SINCE THE IMPLEMENTATION OF DOTS IN THE SELECT THANAS IN COMPARISON WITH THE ACHIEVEMENTS OF NTP

Treatment out come	Year	NTP	Select Thanas
Cured/Treatment Completed (%)	1995	79.0	87.9
	1996	79.0	91.7
	1997	81.0	90.2
	1998	82.0	91.3
Defaulted (%)	1995	11.0	1.9
	1996	11.0	2.9
	1997	10.0	1.3
	1998	9.0	1.7
Others (%)	1995	10.0	10.2
	1996	10.0	5.3
	1997	9.0	8.5
	1998	9.0	7.0

TABLE 3 TREATMENT OUTCOMES % IN AREAS RUN BY BRAC AND GOVERNMENT OF BANGLADESH (GoB)

Category	Treatment outcome	Trishul (BRAC)	Sreepur (GoB)
New sputum Positive	Cured	86.5	82.0
	Died	9.5	12.0
	Failure	2.0	2.4
	Defaulters	2.7	2.4
	Referred	-	3.6
Sputum positive Retreatment	Cured and completed	81.8	100.0
	Died	13.6	-
	Failure	-	-
	Defaulters	-	-
	Referred	4.6	-
Sputum negative and Extrapulmonary	Treatment completed	62.5	87.5
	Died	18.7	-
	Defaulters	18.7	-
	Referred	-	12.5
	Failure	-	-

TABLE 4 PROPORTION OF WOMEN % IN THE TOTAL DIAGNOSED TB CASES IN THE BRAC AREAS COMPARED TO NTP ACHIEVEMENTS

SEX	NTP	BRAC Area	GoB Area	Select Districts
Males	70.8	71.5	80.0	68.0
Females	29.2	28.5	20.0	32.0

TABLE 5 PROPORTION % OF SMEAR-POSITIVE PULMONARY TB CASES TO OTHERS

Year	NTP		BRAC	
	Positive (SP)	Negative (SN)	Positive (SP)	Negative (SN)
1999	52.8	47.2	82.6	17.4

4.2.2 HEED PROJECT

The cure and success rate (cure and treatment completion) as observed in a selected Thana (Hobiganj) for different quarters in the years 1998 and 1999 are as below:

Year and quarter	% Cure rate (SP Cases)	% Success rate (SP & SN cases)
1998/01	71.8	75.0
1998/02	84.0	85.0
1998/03	78.1	79.1
1998/04	81.5	86.5
1999/01	84.6	78.2
1999/02	72.2	86.6

The cure and success rates are influenced by significant number of patients who died during the treatment period (9%-15% of the total cases registered). The percentage of defaulters was less than 6.5% in any quarter. The 81.8% cure/treatment completion rate for the year 1998 is about 8% less than the rate observed for the selected districts run by BRAC, but almost equal to the achievement of the NTP for the country as a whole.

The proportion of women (29.4%) in the total cases in the HEED area in 1999 is similar to the proportion for the NTP as a whole (29.2%). Similarly the proportion of sputum-positive cases (55%) of the total cases is also comparable to the national average (52.8%).

4.2.3 SEWA PROJECT

Out of a total of 205 patients registered in Q1 and Q2 of 1999 in the SEWA TB Unit, 144 are sputum positive (109 new sputum positive and 35 retreatment cases). The number who have been reported cured being 75, the cure rate works out to 52% for the first two quarters. The success rate (treatment completed plus the cured) in case of pulmonary tuberculosis patients (sputum positive and sputum negative) is 65%. The total number of defaulters (all categories) is 45 (21.9%). There were 19 (9.2%) treatment failure cases among new cases and 5 out of 32 (62%) treatment failure cases among retreatment cases.

Treatment outcomes for the first quarter for the Ahemadabad City as a whole excluding the SEWA TB unit are also available. Out of the total 89 patients registered during the quarter 78 are sputum positive (50 new and 28 retreatment cases). The cure rate is 41.02%. The treatment success rate for the pulmonary tuberculosis patients is 44.82%. Thus, the percentage of defaulter is considerable high with about 46%. However, the treatment failure is in the expected range at about 4.5%.

4.2.4 KHENJOHAR PROJECT

The programme in Orissa is effective both in terms of case finding and cure rate. The cure rate is approximately 11 times more than the NTP areas without the DOTS strategy. What is impressive is that the programme also achieved about 90% case detection. The treatment outcomes for the Khenjohar district as a whole are as follows:

Cure rate % for Q1&2 and for Q3&4 of 1999		
Outcome	Q1&2	Q3&4
Cure rate (new sputum positive)	90.9	84.1
Cure rate (new and retreatment)	84.3	76.2
Success rate (all sputum positive and negative)	86.4	87.9

Proportion of smear positive, smear negative and extrapulmonary cases in the new cases				
Year	Positive	Negative	E.P	Total
2000	45.6%	40.8%	13.6%	951
1997	58.6%	31.4%	10.0%	150

Proportion of retreatment cases			
Year	New cases	Retreatment cases	Total
2000	90.6%	9.4%	1049
1997	84.7%	15.3%	177

Percentage of females and males in the registered cases						
Year	All cases			New Smear Positive Cases		
	Males (%)	Females(%)	Total	Males (%)	Females (%)	Total
2000	66.7	33.3	875	67.3	32.7	422
1999	72.1	27.9	1356	75.0	25.0	621
1998	72.6	27.4	951	77.8	22.2	397
Total	70.8	29.2	3182	73.5	26.5	1440

DISCUSSION AND RECOMMENDATIONS

The qualitative assessment and the quantitative data reveal that the community-based TB services are not only effective but also particularly acceptable in the tribal and rural populations. These services also successfully address the sociological issues of the programme such as the gender issues. The strategy of community involvement provides various options convenient for TB patients and their family members.

The review of the projects suggests the possibility of adopting community-based TB projects in all socio-cultural settings. However, the community groups which could be mobilized for the purpose of TB services need not be the same for all populations. Different community groups could be mobilized for the same or different services and to render services purely on a voluntary basis.

5.1 SUSTAINABILITY

The sustainability of community-based TB care projects in general can be judged from the following analysis of sustainability of different projects reviewed:

5.1.1 BRAC PROJECT: *highly sustainable*

Factors favouring high sustainability:

- Least dependence on support of TB programme Managers at different levels for infrastructural facilities, manpower, training etc.
- Highly motivated staff, and the well designed training programmes responsible for such motivation;
- The programme is integrated into the already existing and highly successful community based health projects, which allowed evolving: i) strategies to meet the socio-psychological and economic needs of the TB patients and their families and ii) intensive monitoring systems by experienced staff;
- Greater acceptability of the services by DOT providers as they belonged to the same village community to which the patients belonged to. The community was involved in their selection and hence, greater acceptability;
- Impressive decrease in the cost, direct and indirect, of treatment for the patient
- Adoption of policy of patient accountability to the programme and to community.

5.1.2 SEWA PROJECT: *sustainable*

Factors favouring sustainability:

- The programme is integrated into the already existing and highly successful community based health projects, which allowed evolving strategies to meet the socio-psychological and economic needs of the TB patients and their families. The health projects into which the TB programme has been integrated are already on the way to attaining sustainability in terms of people's acceptance and funding.
- The programme involves members committed for voluntary service for non-material rewards and hence greater motivation.
- Helps reducing the problems of accessibility, physical, economic as well as social, for the patients.

Factors which do not favour sustainability:

- Problems of coordination between different officials of the health department, the municipality, and the NGO implementing the project;
- Social stigma associated with TB and problems for acceptance of DOT from neighbourhood DOT providers;
- Weak supervision and monitoring system

5.1.3 KHENJOHAR PROJECT: *moderately sustainable*

Factors favouring sustainability:

- Providers of TB services and the patients most often share the same ethnic identities leading to greater acceptability of the services;
- Greatly reduces the problems of physical access for the patient to the public facilities for DOT;
- Great economic relief for the patients, considering otherwise the direct and indirect costs of treatment for the patients.

Factors not favouring sustainability:

- Services are not provided on voluntary basis, but the work is thrust on them from above;
- Involvement of these workers in several health related work, increasing their work load;
- No monetary rewards effecting the workers commitment (this is especially keeping in view the poor economic status of many of the AWWs in these tribal areas);
- Poor comprehension levels and professional skills due to low educational attainments and poor training of the workers;
- Relatively weak systems of monitoring and supervision.

5.1.4 ACT PROJECT: *least sustainable*

Factors favouring sustainability:

- The programme involves members prepared for voluntary service for non-material rewards and hence greater motivation.
- Reduces the problems of physical access for DOT
- Helps the patient maintaining the secrecy of the disease and treatment, if so desired (this is in view of the social stigma associated with TB in case of certain communities).

Factors not favouring sustainability:

- Large coverage and inadequate staff leading to weak supervision;
- Involvement of limited number of private practitioners (this reflects the limited support to the community based programme by the private providers);
- Problems of coordination between the private medical practitioners, Municipality officials, NGO workers and DOT providers;
- Problems in meeting the training needs of the DOT providers
- Poor back up support from the field level staff of the programme;
- Interest conflict of programme managers and project managers (beneficiaries of the project are largely middle and lower middle classes)

5.2 RECOMMENDATIONS

1. When the problem of access is the key factor influencing the effective implementation of DOTS, NTPs need to consider all possible ways and means for harnessing of community contribution to TB care.
2. When community based TB projects are considered, opportunities to integrate such projects with already established and highly successful community based health and rural development projects need to be first explored, as in such cases the projects will achieve sustainability and also result in greater success.
3. The extent of effective communication between the community TB treatment supporters and the health units through the NGO staff determines the success of the programme. Regular review meetings, through the involvement of NGOs and constituting joint supervisory teams can achieve the communication.
4. Periodic refresher training as also training on motivation to community based volunteers is necessary. The training needs to be very role specific.
5. Community based volunteers do not replace, but complement the public health staff in the provision of TB services. Patient choice for DOT and other services need to be completely respected.
6. Ensure recognition of services rendered by the community TB supporters in the ways best appreciated by them, to sustain interest and commitment in them.

BANGLADESH AND INDIA: BRIEF COUNTRY PROFILES

Bangladesh

Bangladesh, part of India first and then of Pakistan, attained its independence after the war of independence during 1971-72. With a total population of about 128 million and a total area of 147 thousand square km's, the country has 850 people/sq.km. (excluding water area). Administratively, the country is divided into six divisions, 64 districts and 497 sub-districts (Thanas), and 4451 unions. As many as 98% of the population speak the same language (Bengali). While 86% follows Islam religion, those who follow Hindu and Buddhism account for 12% and 8%, respectively. 82% of the population is rural and 64% are involved in agricultural related activities. Agriculture accounts for 46% of the GNP. Only about 47% (59% male and 42% female) over the age of 6 years are literate. Compared to many other countries in south Asia, the GNP per capita is low (USD 277). About 50% of the households are below the poverty line.

Regarding health indicators, maternal mortality rate is 4.2 per 1000 live births and infant mortality rate is 728 per 1000 live births. The life expectancy for males and females is 59.6 and 59.1 years respectively. About 50% of the under 5 year olds are under weight. About 60% of the population (mostly people living in the 86,038 villages) have no access to basic health services.

India

India is the second most populous country in the world with 846.3 million. The country is divided into 32 States/Union Territories, which are further divided into more than 550 districts. The state populations range from 0.07 to 170 million, while the district population ranges from less than 0.1 million to 9.5 million. Most of the population lives in rural areas in 580,781 villages. There is also significant (7%) tribal population living in forest and hilly areas.

The population density is 273 per sq. km. The sex ratio is 927. The only state where females outnumber the males is Kerala (sex ratio of 1.036). The literacy rate varies across the states from about 34% in Bihar to 89% in Kerala. The female literacy is very low (39.29% for the country as a whole). 83.5% in the country follow Hinduism. Moslems and Christian constitute about 10.7% and 2.4% respectively.

The agriculture sector in Indian economy employs almost 64% of the work force and constitutes to 27.4% of GDP. The GNP per capita for the period 1992-97 is USD 430. The infant mortality and child mortality rate (per 1000 live births) for the year 1998 are 72 and 97, respectively. The maternal mortality (per 100,000) in 1990 is 570. Nearly half of the children below the age of three years are under weight or short for their age. During the last 15 years considerable progress has been made in the provision of safe drinking water. More than 85% (as compared to 54% in 1980-85) have access to safe water.

TB EPIDEMIOLOGY AND NATIONAL TB PROGRAMMES IN INDIA AND BANGLADESH

The burden of tuberculosis (TB) is enormous by any indicator in India. Two million people in India develop TB and about 450,000 die from this disease every year. It is estimated that 40% of the population has *M. Tuberculosis* infection; the annual risk of tuberculosis infection (ARI) is between 1% to 2% with variation between areas; with estimated incidence of new smear positive tuberculosis of 85 per 100,000 population, there are about one million new smear positive cases of TB. Over 1.2 million cases are reported every year through the National TB Control programme. TB is the biggest single cause of adult illness and death from a communicable disease in India. TB represents 3.7% of India's disease burden, eleven times that of malaria. More women die of TB than from pregnancy and childbirth.

An accurate estimate of the size of the TB problem in Bangladesh cannot be made with great certainty. During the review of the programme in 1997, the annual risk of TB infection was estimated to be 2.3%. From these estimates at least 50% of the adult population is infected with *M. Tuberculosis* in the country. Assuming a relationship of 1% ARTI equivalent to 49 smear positive cases per 100,000 population per year, estimated over all incidence of new smear positive TB cases in the country in 1996 is 111 per 100,000 population. Thus, the estimate of smear positive and smear negative cases for the whole country is 137,000 and 167,000, respectively. It is also estimated that as a consequence of inadequate services, more than 60,000 deaths due to TB would have occurred in the year 1999. As conditions for HIV transmission have been proven already in place in the country, further increase of number of TB cases and death due to TB is a natural expectation. It has been estimated that there will be an excess of 12,000 TB cases related to HIV infection.

The National Tuberculosis Programme in India

The NTP was initiated in the year 1962. It was a decentralized programme with District TB Centers (DTC) established for implementation of the programme at the district level. A total of about 440 DTCs established out of the 520 districts throughout the country. Besides, these DTCs, about 330 chest clinics were also set up in urban areas. There were more than 47,000 beds exclusively for TB patients. Below the level of district, it is integrated into the general health services provision through the network of Primary Health Centers and first and second level referral health institutes. The programme was also supported by 16 State TB Demonstration and Training Centers and some select national and state institutions like NTI, TRC, and LRS.

The major objectives of the NTP are to: 1) diagnose as large a number of cases as possible and provide efficient treatment placing priority on smear positive patients; and 2) implement these activities in an integral part of general health services.

The treatment under NTP was either Long Course Chemotherapy (LCC) (otherwise known as standard regimen or SR) of either 12 or 18 months or Short Course Chemotherapy (SCC). By 1997 in almost two-thirds of the country's districts (292 out of 520), SCC has been introduced. However, due to lack of resources, there has been dependence on SR rather than SCC, even in the "SCC districts".

Under the NTP, the TB symptomatics have been by and large referred (or approached on their own) to the DTCs located at District head quarters for diagnosis. The patients who were diagnosed TB were referred back to the nearest Primary Health Centre from where the patients collected their drugs once a month for self administration at home. The patients returned to the DTC for the follow up check ups or for the treatment of side effects.

The NTP existence for over three decades now has, however not helped much to reduce the TB cases significantly in the country. In fact, the effects of the programme are difficult to assess with no reliable information on many aspects. It is assumed that at best NTP reached 50% of the cases and cured 30% of them. As stated in the recent joint review by WHO, under the NTP, reported completion rates are available for a sub set of patients only. The report mentioned that completion rates are low (about 52%-59% for SCC and 28% - 35% for SR).

The joint review of the NTP in 1992 clearly indicated the shortcomings of the programme, more particularly the inaccurate diagnosis and high default rates of patients from TB treatment. The review lead to the design of the Revised National TB Control Programme (RNTCP), implementing the DOTS strategy. The RNTCP began in 1993 and has been gradually expanded in the subsequent years. The large-scale implementation, however, began in 1998. By early 2000, the RNTCP covered 150 million people in different states. The results of the programme are very encouraging with cure rates varying between 70% and 84% and treatment completion rates 54.2% and 81.7%. The defaulter percentage has gradually reduced to about 8%.

National Health Planning and TB services in Bangladesh

The country, ever since its independence, has been striving to improve the health status of its people through its five-year plans in the health sector supported by international aid. Beginning from the First Population Project of the years (1975-80), through the Second Population and Family Health Project (1980-86), Third Population and Family Welfare Project (1986-91), Fourth Population and Health Project (1992-98) and finally Fourth Health and Population Sector Programme (1998-2003), there have been various attempts to review the progress, integrate the different health services, prioritize the health problems periodically and address the short comings of the earlier approaches. In the currently adopted Health and Population Sector Programme (HPSP), some major initiatives in health, population and nutrition have taken place. This programme adopted a sector wide approach to deliver Essential Services Package (ESP) targeted to most vulnerable sectors of the population. The Communicable Disease Control is part of the ESP.

The TB services in the country were for a long time very limited and mainly curative. The TB services first began in 1952 with establishment of a TB clinic in Dhaka City. TB services were provided during 1965-1980 through 44 TB clinics, 8 segregation hospitals and 4 TB hospitals. During the period 1980-85, under the project "Strengthening TB/Leprosy Control Services", TB services were expanded to 124 Thana health complexes. Further under the Mycobacteria Control Programme, during the years 1986-1991, TB and leprosy have been integrated operationally. In the fourth Population and Health Project of 1992-98, the National TB programme was launched with an objective of further developing the TB and leprosy control services being undertaken under the MBDC programme. In the Health and Population Sector Programme, the NTP is part of Communicable Disease Control under the ESP. This reflects the government's commitment to TB control. Further, with sector wide approach, there is change in the NTP management structure. Staff and infrastructure available at different levels have greater involvement than before in TB control programme, thus ensuring ownership of the programme and sustainability.

In view of the inadequate TB services and with only less than 40% of the population having access to the basic health care, the effectiveness of services prior to the implementation of HPSP project and the adoption of DOTS strategy was very limited. In 1985 when the TB services were expanded to Thanas, only 560 sputum positive patients were identified in 1987. Treatment completion rate was below 25% (Islam 1987). The study by World Bank in 1990 reported that less than 50% of TB patients were completing treatment and less than 20% of estimated cases were being detected.

In order to improve the performance of the NTP, the DOTS strategy has been adopted in the year 1993. Starting in November 1993, after the preparatory phase (during which preparation of national guidelines, materials were undertaken besides undertaking training courses and procurement of equipment and supplies), DOTS was implemented in four rural Thanas in the districts of Brahmanbaria and Narayanganj. Implementation of DOTS has been expanded gradually and by June 1998, DOTS has been implemented in 460 Thanas.

BRIEF PROFILES OF NGOS (SEWA, BRAC, HEED AND ACT)

SEWA

SEWA stands for “Self Employed Women’s Association”. Members of the association are workers who have no fixed employee-employer relationship and depend on their own labour for survival. SEWA was born in Ahmedabad City three decades ago, organizing a handful of workers – the head loaders of main city cloth merchants. The size of the association grew rapidly in subsequent years and has also spread to other parts of Gujarat. It is in the year 1972, SEWA has been registered as Trade Union with local units. The association is primarily to ‘organize the workers for full employment and self reliance’. “It is both an organization and movement – labour movement, cooperative movement and women’s movement”. The women workers of SEWA include three types:

- Hawkers, vendors and those engaged in small business like vegetable, fruit, fish, egg and other food items and clothes;
- Home based workers like weavers, potters, agarbatti workers, papad rollers, ready made garment workers, women who process agricultural products and artisans; and
- Manual labourers and service providers like agriculture workers, construction workers, contract labourers, handcart pullers, head loaders, domestic workers and laundry workers.

The activities of SEWA are largely:

- Income generation and improvement of incomes encouraging thrift, improving marketing, management skills, providing capitals, credit;
- Social security – provision of health care, housing, child care and insurance;
- Campaigning for workers rights and protection of interests.

SEWA organizes its activities for the set goals through the formation of cooperatives (like dairy cooperatives, artisan cooperatives, service and labour cooperatives, trading and vending cooperatives), societies, producer associations etc. The microcredit programme through the SEWA bank helps many a member to self-employment. Further, the different economic activities of the cooperatives also provide opportunities for employment, and so for higher incomes, to many of its own members. The health care to the members of SEWA and their family members are extended through the social security organizations formed by the actual caregivers. Such organizations are promoted to be self reliant and sustainable. Self-reliance is achieved to a great extent by choosing a dynamic and dedicated member and then arranging for intensive training in various health care services. These trained health care workers then provide services to the members for a notional honorarium. The amount of honorarium is mobilised by way of nominal fees paid for different services by the members, sale of medicines and other items required for personal hygiene through drug depots and the health workers, through the membership fees of the members of the cooperative society etc. These

local health cooperatives are of various sizes and named differently (e.g. Lokswasthya SEWA Health Cooperative, Krishna Dayan cooperative) in different localities. The health services rendered through the local health cooperatives include 14 different activities. The services are rendered by full time trained health workers chosen from amongst the members of the cooperative. As of 1999, SEWA's efforts resulted in the formation of six health cooperatives with a total membership of 1107 and extending services to about 111,119 members.

SEWA's experience of community-based TB services

The need for extending TB care services to the members of SEWA was realised quite early, not only for the reason that many members of SEWA suffered from TB or possessed the risk of developing active TB but also that those who experienced the illness faced severe socio-economic consequences. The issue of providing TB services by way of collaboration with the Ahemadabad Municipal Corporation and government of Gujarat was soon discussed. From the year 1993, SEWA evolved strategies for collaboration with the health department for effective implementation of NTP. SEWA's services then were identified as:

- Identify patients for screening and bring them to the TB hospital for sputum and X-ray tests;
- Follow patients closely and undertake to ensure that drugs are regularly taken;
- Maintain drug depots at SEWA so that trips to the hospital and thus time and money are saved for the patients;
- Ensure that patients come for regular check ups at hospital;
- Ensure that patients are admitted to hospital when required;
- Provide health information to members, patients and their families through training of SEWA union leaders and members, distribution of literature, and meetings, discussions, slide shows and video re-plays.

The results of the collaborative efforts proved to be very encouraging. The case detection and cure rates have gradually increased over the years. The defaulter percentage was less than 10% during 1993-96 in the areas where SEWA undertook the above mentioned services.

SEWA's participation in the RNTCP

RNTCP was launched in the city of Ahemadabad in February 1999. In view of SEWA's offer to collaborate with the government of Gujarat in the implementation of the programme in Ahemadabad City, it was decided to give complete responsibility of implementation of the programme in one of the TB units in the city.

BRAC

BRAC stands for Bangladesh Rural Advance Committee. BRAC was formed in 1972 principally to provide relief and rehabilitation in Sylhet district to thousands of refugees returning to their home after the war of independence. A year later, however, the organization shifted its focus to long term community development. BRAC adopted a targeted group approach and focused on the landless, manual labourers, who form the poorest of the poor. It committed itself to the reduction of poverty and empowerment of these sections of the population. Further, having realized the fact that the women in Bangladesh have a low status in spite of being key players of household economy and possessing a great potential to bring changes at the family level, BRAC targeted women in its programmes.

BRAC follows a holistic approach to poverty reduction and so interventions for economic development, improving health status and educational levels are simultaneously planned and implemented. The rural development programme addresses the socio-economic development of underprivileged rural women through access to credit, capacity development and mobilisation of savings, institution building and awareness raising. While the Health, Nutrition, and Population Programme addresses the health and nutritional status of children and the women, the education programmes provides for the needs of the children of poor families. Of all the programmes, the rural credit and training programme, however, remains as the most important programme component.

The most basic unit at which all the activities - economic, education and health activities – are organized is the Village Organization. Beyond the level of village organization are the federations, Polli Shomeij - the ward federations - represented by women of different village organizations falling within a Union.

Towards the economic development, BRAC implements a variety of programmes according to the felt needs of the members - Poultry programme, Live stock programme, Rural enterprise programme, Micro-entrepreneur lending and assistance, Agriculture programme, Sericulture, Fisheries etc. BRAC strategy has been to foster linkages within and among the sectors and provide skills, credit and marketing.

The HNPP of BRAC has two components. One is an integrated and comprehensive set of health interventions for RHDC focused primarily at the poor people living in the programme including the members of the Village Organization. The other is providing technical assistance and support to national programmes, as partners to the Government of Bangladesh. Currently in the areas covered by the RHDC, BRAC implements Pregnancy care services, Family planning services, Maternal mortality reduction project, adolescent family life education, Community based RTI/STD prevention and control project, and HIV/AIDS staff education programme under the reproductive health care component. Under the nutrition programme, different initiatives such as supplementary nutrition to select groups of children and women and intensive nutrition education linked with rural development programmes for home gardening, poultry, fisheries etc. are being piloted in select areas. The disease control programme includes community based ARI control programme, community-based tuberculosis control programme and the childhood illness control (covering immunization, control of blindness and worm infection) programmes.

Most of the health interventions of BRAC are through community based health workers such as Shasthya Shebika or Shasthya Karmi. These village level health workers are intensively trained for their respective roles and closely monitored by the BRAC community health organizers, who are in turn supervised by Programme Organizers and also other staff. However, a back up to the community based health intervention has also been part of the health activity of the BRAC. BRAC runs Shushatho (BRAC Health Centers) to provide technical and clinical back up. The BHCs are staffed with a Medical Officer, two FWVs, one laboratory technician and a trained traditional birth attendant. One Zonal Medical Officer for about 20 BHCs supervises the activities of the BHCs. Thus, the household or household clusters based approach for limited ESP care through SS, Depot Holder and Trained Traditional Birth Attendant (TTBA) is first level of BRAC's service delivery, the community out reach centres usually called Antenatal Care Centers (ANCC) is the second level for selected ESP care. The Shushatho provides support to the first two levels of service delivery in terms of training, quality monitoring, further care and referral linkages.

BRAC currently covers over 50,000 villages. A total of about 90,250 VO groups have been formed just in the areas where the RDP is in place. The organization employs over 20,868 full time staff and 33,746 part time staff making it a total of 54,614 staff.

BRAC's community-based TB programme

BRAC initiated community based TB control project in 1984 as a pilot in Manikganj Thana situated about 50 km west of Dhaka, covering a population of about 220,000. This was infact a joint project of BRAC, Anti TB Association of Bangladesh and Government TB Control Project. The National TB control project provided microscope, reagents and drug supply, while the TB Association gave over all support and coordination. The BRAC organized TB services through the Community Health Workers - Shasthya Shebika (SS) - who already existed in BRAC initiated community programme. The SS provided services like the identification and referral of symptomatics, drug administration/distribution and patient motivation for completion of treatment. The SS administrated streptomycin injections during the first two months on every alternate day and provided other drugs for one or two weeks. During the period of project implementation a total of 224 CHWs participated covering 294 women's groups. The activity of the CHWs was closely monitored by 10 Programme Organizers and the BRAC Health Center provided the clinical and technical back-up by way of microscopy services and treatment of side effects etc.

The project proved to be successful with treatment completion rate of 66.3% and defaulter rate of only 8%. The pilot project also helped to learn that integration of programmes with government health systems cannot be easily achieved (under the circumstances then prevailing) for "the doctors in hospitals insisted that the diagnosis and medication be done only by qualified doctors" (Chowdhury et al; 1991). The 1989 programme review also revealed that Shebikas were not very motivated to collect sputum without incentive.

With the successful outcome in the Manikganj Thana, the coverage has been extended to 10 more Thanas covering a population of approximately 1.8 million in 1992. The treatment outcomes with about 80% during this scaling up also, were encouraging.

HEED

HEED stands for Health, Education, and Economic Development. The activities of HEED began in 1972, with the work of concerned members of Christian community who offered services to government of Bangladesh in the area of medical and nursing care, in terms of relief care after the birth of Bangladesh as an independent sovereign nation. HEED, with that name, however was established in 1974, first to render services to Bihari refugees of Dhaka City. From the subsequent year, the activities of HEED have been expanded to the rural areas of the country.

On the initiative of the Government of Bangladesh, HEED agreed to undertake Leprosy Control activities in Komalganj sub-district in 1976. As a part of Leprosy Control programme, a leprosy hospital has also been established in Komalganj in the land and buildings offered by the government. Later in 1978, HEED commenced an integrated Leprosy and TB Control Programme (LTCP). The LTCP presently covers the whole of Sylhet Division and a population of about 75,00,000. As part of LTCP, two other programmes namely West Sylhet Education Programme and TB and Leprosy Rehabilitation Programme have also been started recently. The education programme is aimed at producing TB and Leprosy community educators, besides providing comprehensive health education to the community currently. HEED diversified its activities further and adopted Participatory Development Programme (PDP) since 1985. The PDP aimed at increasing income levels, and empowerment of rural poor. Microcredit programmes together with programmes for education of the children, legal aid to women and community health have been initiated towards overall development of rural community. Towards organizing of the participatory development programme and others, HEED mobilizes members to form community organizations – women's groups comprising about 20 members in each – are formed. The members identify the felt needs and organize themselves for the achievement of the needs through technical and financial assistance from HEED. By 1999, as many as 2602 women groups with a total membership of 54,465 have been formed in 23 Thanas in 11 districts. After the launch of revised NTP using DOTS approach, HEED accepted to partner the Government of Bangladesh in the implementation of the programme according to the national guidelines in select areas. HEED initially chose to undertake the TB control activities in three districts namely Moulibazar, Sylhet and Hobiganj in the Sylhet region. HEED is currently running the programme in 25 Thanas in these three districts. The increase of coverage in different years is as follows.

Year & Quarter	Number of Thanas	Popn	Year & Quarter	Number of Thanas	Popn
94/3	01	230,889	97/1	08	1,836,301
94/4	01	230,889	97/2	12	2,738,865
95/1	01	230,889	97/3	12	2,738,865
95/2	01	230,889	97/4	14	2,923,495
95/3	01	230,889	98/1	15	3,154,040
95/4	01	230,889	98/2	25	5,687,188
96/1	02	422,561	98/3	25	5,687,188
96/2	02	422,561	98/4	25	5,687,188
96/3	04	817,726	99/1	25	5,687,188

ACT

ACT (Advocacy for Control of Tuberculosis) is a project of a registered society named REACH (Resource Group for Education and Advocacy for Community Health) working in Chennai, Tamilnadu, India. ACT is essentially a community initiative to highlight the problems in TB control and increase awareness among the different communities of the spread of tuberculosis. ACT adopted as its guidelines the five tenets of DOTS strategy and aims to propagate and further the concepts of this strategy for effective tuberculosis control. ACT was formally launched on World TB day in 1998 with the following objectives:

- ACT will function as a resource and linkage agency for the various groups in the community involved in the problem of tuberculosis;
- Disseminate information on the strategies, policies and thinking on this subject to various target groups;
- Act as liaison between the scientific experts and policy makers, administrators and health care providers as well as members of the community at large;
- Mobilise resources in terms of manpower expertise and funds for supporting and implementing programmes for TB control.

The way ACT actually functions for achieving the set objectives is:

- Linking up patients, private practitioners with Chennai corporation and Institutional intermediaries;
- Identifying Community volunteers for DOT area wise to recommend to private practitioners enrolled to participate in the programme;
- Registering and recruiting Labs for training in quality sputum microscopy at TRC, Chennai;
- Organizing clinical meetings for private practitioners;
- Organizing awareness lectures for doctors through medical associations and recruit more private practitioners for participation in DOTS;
- Monitoring private/institutional remedies;
- Creating public awareness through print and electronic media.

Achievements:

- Enlisted 51 private practitioners into the programme, of whom 37 agreed to be DOT providers themselves;
- One established hospital run by an NGO (Not for profit) joined the programme;
- Lab Technicians of 21 Labs have been trained in Sputum Microscopy at TRC
- One private industry tie up is established, by setting up DOT centres for their employees and the neighbourhood;
- 230 patients have been registered by ACT for DOT since December 1998.

BRIEF PROFILE OF KENJOHAR DISTRICT, ORISSA, INDIA

The state of Orissa in eastern India comprises of a total population of 35 million. The state has a very significant tribal population, comprising about 22% of the total population. About 35% of the total land area is covered with forests. The state is gifted with rich mineral resources, particularly in the districts of Khenjohar, Sundergarah, Mayurbhanj, Dhenkanal, Balasur and Jharsuguda, which lie towards north and northwest of the state. A sizable proportion of the population in this part is engaged as mining or industrial labour. In the northern Orissa, agriculture is the main occupation of the majority of the inhabitants. The literacy rate among males being 63% is satisfactory. However, the literacy among tribals and women in particular is very poor (10%). The per capita income as well as the health status of the inhabitants, as revealed by different indicators, are also less than the national averages.

Until a few years ago the State comprised of 13 districts. With the recent reorganization of districts, the number increased to 30 with populations ranging from 1 to 2 million. The total number of inhabited villages is 46,989.

It is estimated that there are 500,000 TB patients in the state, and out of them 125,000 are sputum positive. About 80,000 new cases are being added every year to the existing pool of cases. The number of TB patients dying every year is estimated to be around 17,500.

Profile of Khenjohar district

<i>Population:</i>	1.4 million
<i>Tribal population:</i>	45%
LITERACY RATE:	
General	
<i>Male:</i>	59%
<i>Female:</i>	30%
Tribal	
<i>Male:</i>	30%
<i>Female:</i>	12%
<i>Forest area:</i>	30%
<i>Villages:</i>	2,067
<i>TB prevalence No. of cases:</i>	21,000
<i>Sputum positive:</i>	5000
<i>New cases per year:</i>	3000
<i>TB mortality rate per year:</i>	700

Activities of NTP in Orissa were launched in the state in 1964. As, in the rest of the country, the programme was initially through the establishment of DTCs in each district, and it was integrated into the general health services below the level of district.

However, in practice the patients were diagnosed and treated at the DTCs. With reorganization of districts, the DTCs have also become by and large defunct. There are no district level programme officer (DTOs) exclusively for TB. At the present, the ADMO (Medical) looks after the TB programme at the district level.

The treatment was LCC until 1983. SCC was provided in a phased manner since 1983 in 8 districts. Around 30,000 TB cases were detected every year under the programme, out of which about 30% were smear positive. The cure/completion rate was only about 10-11%.

Bearing in mind the WHO recommendations and national guidelines, the decision for implementation in a phased manner of revised NTP following DOTS was taken in the early 90s. The programme was launched with support from DANIDA in 1997 in three districts. It was planned to expand the programme to another 11 districts by 2001.

RNTCP has been implemented in Khenjohar district since 1997. For the purpose of implementation of the programme, the district has been divided into four TB Units. While the population covered varied between 3 to 3.5 lakhs in the case of three TB units, in the case of the fourth unit it was only about one lakh. The fourth unit predominantly comprised of mining and industrial employees and their families living in urban areas. The TB Units have been located in the Sub-divisional hospitals and are staffed by a Medical Officer (TB Unit), Senior Treatment Supervisor (STS) and a Senior TB Laboratory Supervisor (STLS). Further still, about 28 Microscopic Centres (MC) have been established in different Primary Health Centres (PHCs) in the district for improving access to sputum microscopy. The MCs covered approximately a population of 50,000. The treatment services have also been decentralized by making provision for TB treatment at the PHI level.

It has been the policy of the government not to recruit additional staff or create additional infrastructure for the purpose of RNTCP. At the same time no staff were to be forcibly recruited into the RNTCP with additional responsibilities. Thus the positions of Medical Officers, STS and STLS in the TB Unit were filled with the health staff in the health department who are sufficiently qualified and volunteered to take the additional responsibilities. Similarly, when the lab technicians were not available to undertake the TB work in the microscopy centre, other health staff like the pharmacists, staff nurse or the Multipurpose Health Workers of the head quarters village who have volunteered to do the lab work have been trained and given the responsibility. Under the present set up, laboratory facilities in all the PHIs in the district have been strengthened by providing necessary equipment for functioning as Microscopy Centres. As each PHI covers a population of about 50,000 in 15-25 villages, the microscopy services are available within easy reach. The patients need not travel more than 3-5 kms for sputum microscopy.

The X-ray facilities are available in the Sub divisional hospitals only. The patients requiring X-ray are referred to these hospitals by the medical officers of the PHIs. Similarly, the patients requiring inpatient treatment or advice by the specialists during the course of treatment are referred to either the Sub-divisional hospital closest to them or to the District hospital.

BRIEF DESCRIPTION OF POPULATIONS COVERED BY THE PROJECTS REVIEWED

SEWA (Project population covered = 270,000 in two urban slums)

Profile:

95% Hindus

15% - 20% migrants from other states

85% - 90% are daily wage labourers or those engaged in self-employment, e.g. vegetable vending, petty business, diamond-cutting.

Literacy about 25% - 30%

Annual income less than US\$ 390 in case of approximately 25% - 30%

BRAC (Project population covered = 714,000 in two rural Thanas)

Profile:

100% rural population

98% - 99% Moslems

Agriculture is the primary occupation for about 80% of the families

Literacy rate is approximately 30%

Monthly income is less than US \$ 435 for about 45% - 55% of families

HEED (Project population covered = 218,000 in one Thana)

Profile:

90% are rural population, of which about 70% is population in tea gardens

80% is Moslem population; 18% - 20% is Hindu population

Literacy rate is less than 30%

Monthly income is less than US \$ 435 in case of about 50% - 60% of families

ACT (Project population covered = 4.5 million of city of Chennai, India)

Profile:

100% Urban

Literacy rate above 65%

Varied occupations

Varied income levels

Khenjohar (Project population covered = 1.4 million in one district)

Profile:

45% are tribal and the rest is largely rural

Predominantly Hindu population

Literacy rate is 45% for rural and about 22% for tribal

Primary occupation is agriculture for 80% and the rest are engaged as unskilled labour in mining industry

NTP AND NGO COLLABORATION IN BANGLADESH

One of the important features relating to the provision of health care in Bangladesh has been the involvement of many NGOs in health care activities. While some of these NGOs have provided exclusively health services, others extended health services as part of their comprehensive rural development programmes.

The Government of Bangladesh has always shown keen interest to collaborate with the NGOs as the use of NGO service facility and community based infrastructure ensures greater geographical and population coverage of its health programmes. The government is quick to realize the benefits of partnership with NGOs for control of tuberculosis too. After the integration of TB and leprosy activities in 1986, on the initiative of the government, NGOs involved in leprosy activities have included TB services in their programme. Besides those NGOs, others like BRAC have provided TB services in specific areas as early as 1984 using certain innovative approaches.

Since the implementation of NTP and more particularly the DOTS strategy, the collaboration with NGO has been increased and more specifically defined. The specific roles of government and the NGOs in the programme are clearly stated and the adoption of national guidelines for undertaking TB control activities is ensured. The government – NGO collaboration currently is with six national level NGOs (BRAC, Damian Foundation, DMCM, HEED, LAMB, and RDRS). Most of the NGOs with whom the government has signed the MoU for collaboration were involved in community-based treatment and control of leprosy.

Of the total 440 Thanas where the NTP adopting the DOTS strategy is being implemented, NGOs are collaborating with the GoB in 186 Thanas. The number of Thanas covered by the NGOs has gradually increased over the years, from 26 Thanas in 1995 to 186 in June 1998. The number of Thanas covered by BRAC itself increased from 45 in 1995 to 222 in 1998. The cumulative number of Thanas covered by BRAC in different divisions and in different years beginning from 1995 is as follows:

Division	1995	1996	1997	1998
Rajshahi	27	39	51	128
Dhaka	16	38	62	64
Sylhet	1	4	0	30
Chittagong	1	4	0	0
Total	45	85	113	222

ACTIVITIES AND INVOLVEMENT IN TB CONTROL OF ANGANWADI WORKERS (AWWS)

AWWs are the community health workers for undertaking a variety of services under the Integrated Child Development Scheme (ICDS) of the government. These are women with at least primary education belonging to the same village where they are expected to serve. Their selection is made through a local notification by the ICDS functionaries and in consultation with the political representatives of the Block level. The different services provided by these workers under the ICDS scheme include:

- 1.** Pre-school education to children of 3-5 years of age;
- 2.** Provision of supplementary nutrition to preschool children, pregnant and lactating women;
- 3.** Registration of births and monitoring of growth of children;
- 4.** Providing health and nutrition education to pregnant women and lactating mothers;
- 5.** Assisting health workers in the antenatal care and immunization;
- 6.** Promotion of family planning among eligible couples;
- 7.** Providing first aid and dispensing drugs for minor illness;
- 8.** Referring members of the community to Health Centers for appropriate care in case of morbidity.

In addition to the above mentioned activities, the AWW also render many other services such as being Depot holders for malaria control programme, distribution of ORS packets to needed members etc.

The district functionaries of the TB programme felt that the Anganwadi Workers are the natural choice for initiating community based TB care. This is because:

- 1.** Availability of this cadre of workers in sufficient numbers, particularly in places where the health workers are not able to reach;
- 2.** Intensive training already imparted to these workers for promotion of skills and knowledge for undertaking health-related activities;
- 3.** Possibility of close monitoring of the activities of these workers both by the ICDS functionaries and the health staff;
- 4.** Achievement of "smooth" collaboration already between the personnel of health department and ICDS, including those at the level of AWW and the health workers at the field level for undertaking services like Antenatal and postnatal care;
- 5.** Acceptability of their health related services by the community members.

LIST OF OFFICIALS, PROGRAMME MANAGERS AND PROJECT STAFF INTERVIEWED

Sl. No.	Designation and organization/project
01	WR, WHO Office, Dhaka, Bangladesh
02	TB Officer, WHO, Dhaka, Bangladesh
03	Deputy Programme Manager (TB), Government of Bangladesh, Bangladesh
04	Deputy Programme Manager (Leprosy), Government of Bangladesh, Bangladesh
05	Director, HNPP, BRAC, Bangladesh
06	Senior Sectoral Officer (TB), BRAC, Bangladesh
07	Zonal Medical Officer, Phulpur Shadar Area Office, BRAC, Bangladesh
08	Quality Control Manager, Phulpur Shadar Area Office, BRAC, Bangladesh
09	Medical Officer, BHC, Phulpur Shadar, BRAC, Bangladesh
10	Programme Officer, Phulpur Shadar Area Office, BRAC, Bangladesh
11	Medical Officer, BHC, Bogra, BRAC, Bangladesh
12	Medical Officer, BHC, Bogra, BRAC, Bangladesh
13	Medical Officer, BHC, Bogra, BRAC, Bangladesh
14	Civil Surgeon, Bogra Sadar Thana, Bangladesh
15	Junior Consultant, TB Clinic, Bogra, Bangladesh
16	Medical Officer (Communicable Diseases), Ullapara THC, Mymensingh District, Bogra
17	TLCAs, Ullapara THC, Mymensingh District, Bogra
18	Programme Director, HEED, Bangladesh
19	Senior Medical Officer, HEED Leprosy Hospital, Molvi Bazar, Bangladesh
20	TLCAs, HEED, Komalganz THC, Bangladesh
21	Civil Surgeon, District Hospital, Molvi Bazar
22	TB Officer, WHO, New Delhi, India
23	Joint Director (TB), Government of Gujarat, Ahmedabad, New Delhi
24	Director, STDC, Government of Gujarat, Ahmedabad, New Delhi
25	District TB Officer, Ahmedabad District, Gujarat, India
26	Programme Coordinator (Health), SEWA, Ahmedabad, India
27	Medical Officer (RNTCP), SEWA, Ahmedabad, India
28	Medical Officer, SEWA Dispensary, Ahmedabad, India
29	WHO Consultant (RNTCP), Gujarat State, Ahmedabad, India
30	Programme Officer, (TB), DANTB Office, Bhubaneswar, India
31	Programme Officer, (IEC), DANTB Office, Bhubaneswar, India
32	Consultant, RNTCP, DANTB Project, Khenjohar, Orissa, India
33	STS, RNTCP, Anandapur TB Unit, Khenjohar, Orissa, India
34	Executive Treasurer, ACT, Chennai, India
35	Executive Secretary, ACT, Chennai, India
36	Municipal Commissioner, Chennai Municipal Corporation, India
37	Medical Officer (RNTCP), Chennai Municipal Corporation, India

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END NOTES

¹ Harries A et al. 2000

² Okley Peter et al (1999)

³ Okley Peter et al (1999)

⁴ Stone Linda (1992)

⁵ Okley Peter et al (1999)

⁶ Rikfin SB (1990)

⁷ Rikfin (1985)

⁸ Maher D et al (1999). Medical approach defines community participation as activities undertaken by groups of people following the directions of medical professions to reduce illness and improve general environment.

⁹ Foster GM (1977) earlier stated, "I am increasingly convinced that economic and social costs are more in determining the use or non-use of scientific medicine than is the belief conflict between traditional and modern medicine".

¹⁰ WHO (1994); Enarson DA (1991)

¹¹ Maher D et al (1999)

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WORLD HEALTH ORGANIZATION
Communicable Diseases Programme
20 Avenue Appia
CH-1211 Geneva 27 - SWITZERLAND
tel +41 22 791 2111 - fax +41 22 791 4268

SOUTH EAST ASIA REGIONAL OFFICE
WORLD HEALTH HOUSE
Indraprestha Estate - Mahatma Ghandi Road
New Delhi 110 002 - INDIA
tel +91 11 337 0804 - fax +91 11 337 9507

For further information about tuberculosis
or other communicable diseases, please contact
Information Resource Centre Communicable Diseases
WORLD HEALTH ORGANIZATION
CH-1211 Geneva 27 - SWITZERLAND
cdsdoc@who.int
tel +41 22 791 3504 - fax +41 22 791 4285

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