

# ENGAGING ALL HEALTH CARE PROVIDERS IN TB CONTROL



*Guidance on Implementing  
Public-Private Mix Approaches*



**World Health  
Organization**

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## **ACKNOWLEDGEMENTS**

Based on the evidence and experiences from field-based initiatives of several countries, this document was prepared by Mukund Uplekar and Knut Lönnroth. Many technical experts and programme implementers with hands-on experience contributed substantially to the development of this document.

The core group of the Stop TB Partnership's Subgroup on PPM for DOTS Expansion comprising Dongil Ahn, Samiha Baghdadi, JM Chakaya, Phil Hopewell, Daniel Kibuga, SS Lal, KJR Murthy, Nani Nair, Akihiro Seitani, Pieter van Maaren, and Charles Yu contributed to the different sections and also reviewed the draft versions of the document. Karin Bergstrom helped in revising the section on training.

The document was presented and discussed at the Third meeting of the Stop TB Partnership's Subgroup on Public-Private Mix for DOTS (PPM DOTS) in Manila, Philippines, in April 2005. The members of the Subgroup reviewed and endorsed the draft for publication.

The authors acknowledge supervision and support of Leopold Blanc, Coordinator, TB Strategy and Health Systems and appreciate the efficient secretarial assistance provided by Caroline Sorel. Prompt support offered for the printing of the document by Raphaël Crettaz, Pascale Broisin, Frédérique Robin is much appreciated.

Mario Raviglione, Director, Stop TB Department, has been a constant source of guidance and encouragement to the process of developing the concept of Public-Private Mix that has culminated in the production of this guidance document. The authors are grateful to him for writing a preface to the document.

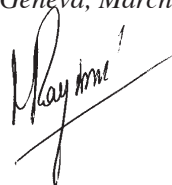
## PREFACE

*“.....We hope that on the basis of this, locally appropriate ways of involving private practitioners in DOTS implementation will be tried out and documented. This will help create an evidence-base for achieving an effective Public-Private Mix (PPM) for TB control. Such an evidence-base will also help delineate more concrete guidelines that may be published subsequently....”*

This was foreseen five years ago in the concluding paragraph of the Preface of the WHO document: *“Involving private practitioners in tuberculosis control: Issues, interventions and emerging policy framework”*. As envisaged then, several locally appropriate ways of involving private practitioners in TB control have indeed been tried out, documented and published. Importantly, however, the concept of PPM has evolved further in response to the ground realities. In different country settings, different types of private as well as public providers operate outside national TB programmes (NTPs). They include informal village doctors, private general practitioners, large public hospitals, specialist physicians, nongovernmental organizations, medical colleges, corporate health services etc. Since WHO’s embarking on the global PPM project, several initiatives in different countries have successfully engaged diverse health care providers in DOTS implementation. Evidence from such initiatives shows that the diversity of settings and provider types regardless, there are distinct commonalities in setting up productive collaborations with the wide array of public and private care providers and that they all fit well under the common umbrella of PPM. Evidence also indicates that PPM DOTS not only improves access to quality TB care but also saves costs of care for the poor. Therefore, engaging all health care providers in TB control is an essential component of the new Stop TB strategy and the Global Plan to Stop TB 2006-2015.

This document guides NTPs on how to engage all relevant health care providers in TB control and thereby promote the use of evidence-based, International Standards for TB Care. The experience and evidence on scaling up and sustaining PPM is now clearly emerging. We hope that this document will help countries to scale up PPM DOTS more rapidly and contribute significantly to achieving the TB-related Millennium Development Goal.

Geneva, March 2006



*Dr. Mario Raviglione,  
Director, Stop TB Department*



## ABBREVIATIONS

DEWG	DOTS Expansion Working Group
DOT	Directly Observed Treatment
DOTS	The internationally recommended TB control strategy
GFATM	Global Fund to Fight AIDS, TB and Malaria
HIV	Human Immunodeficiency Virus
IMA	Indian Medical Association
KAPTLD	Kenya Association for Prevention of Tuberculosis and Lung Disease
MDG	Millennium Development Goal
MDR TB	Multidrug-resistant Tuberculosis
NGO	Non-Governmental Organization
NTP	National Tuberculosis Programme
PhilCAT	Philippines Coalition Against Tuberculosis
PhilHealth	Philippines Health Insurance Corporation
PhilTIPS	Philippines Tuberculosis Initiatives for the Private Sector
PPM DOTS	Public-Private Mix DOTS
RNTCP	Revised National Tuberculosis Control Programme (India)
TB	Tuberculosis
TB/HIV	The intersecting epidemics of TB and HIV
WHO	World Health Organization





## 1 RATIONALE AND PURPOSE

A great deal of progress has been made in global tuberculosis control in recent years through the large-scale implementation of DOTS<sup>1</sup>. It has been acknowledged though that TB control efforts worldwide, although impressive, are not sufficient. The global TB targets – detecting 70% of TB cases and successfully treating 85% of them, and halving the prevalence and mortality of the disease by 2015 as part of the Millennium Development Goals (MDGs) – are likely to be met only if current efforts are intensified. Among the important interventions required to reach these goals would be a systematic involvement of all relevant health care providers in delivering effective TB services to all segments of the population. Therefore, engaging all health care providers in TB control is an essential component of WHO's new Stop TB strategy<sup>1</sup> and the Stop TB Partnership's Global Plan to Stop TB 2006-2015<sup>2</sup>.

In most countries with a significant burden of TB, DOTS implementation is limited largely to public sector services under national tuberculosis programmes (NTPs). In reality, however, many patients with symptoms of TB, including the very poor, do seek and receive care from a wide variety of health care providers outside the network of NTP services. The magnitude and the role of these non-NTP providers, both private and public, vary greatly from country to country. Some countries have a large private medical sector that provides services to all segments of population, both rich and poor. Private providers also include practitioners who may not be formally qualified, such as traditional healers in rural areas and informally-trained practitioners in urban slums. Civic groups working with disadvantaged communities and nongovernmental organizations (NGOs) provide TB care in many countries. Urban areas in most countries have a mix of public sector providers, which include medical college hospitals, speciality centres such as chest clinics and general public hospitals. In spite of being a part of the public sector, these providers do not always coordinate with NTP or apply DOTS. Many countries have networks of health services for their specific worker populations such as those run by social insurance organizations or public sector undertakings like military, railways or mines. Private industries may also offer health services for employees. These private and public providers, who manage sizeable proportions of TB patients, often remain outside the purview of NTPs. Thus the TB patients they serve are deprived of the benefits of DOTS.

In order to address this apparent weakness in global TB control, efforts have been under way within and outside the WHO's Public-Private Mix (PPM) initiative. An increasing number of countries are now interested and ready to implement PPM so as to link all relevant public, private and voluntary health care providers to their NTP. A considerable amount of knowledge and field experience on how to undertake PPM for TB control now exists (Annex 5). However, this has not

<sup>1</sup> The new Stop TB Strategy ([www.who.int/tb](http://www.who.int/tb)), which builds on the DOTS Strategy comprises the following six components: 1. pursue high-quality DOTS expansion and enhancement; 2. address TB/HIV, MDR-TB and other challenges; 3. contribute to health systems strengthening; 4. engage all health care providers; 5. empower people with TB and communities and 6. enable and promote research.

<sup>2</sup> The Stop TB Partnership. The Global Plan to Stop TB 2006-2015. WHO/HTM/STB/2006.35. Geneva: World Health Organization, 2006.

been synthesized in a form that could be useful to guide implementation. This document aims to guide NTPs to initiate and expand programmes to involve all relevant health care providers in TB control. The obvious goal of developing this document is to promote access to quality TB care worldwide. This is expected to help not only in increasing TB case notification but also in reducing financial burden on TB patients.

Addressing and expanding PPM could get a further boost through the recently developed International Standards for TB Care (ISTC)<sup>3</sup>. In accordance with the Stop TB Strategy, these standards address the basic elements of diagnosis and treatment of TB with a series of straightforward statements that are backed by evidence. The ISTC could be used to secure a broad base of endorsements – NTPs, professional medical and nursing societies, academic institutions, NGOs, HIV-focused organizations – and to create peer pressure for providers to conform to the principles of PPM for TB control as well as to serve as the basis for pre-service and inservice training.

The following section presents the basis for this guiding document, explaining the evolution of PPM and the evidence base collected from the field. Developing a national strategy to foster the involvement of diverse health care providers and translating it into a local programme that effectively links these providers are two distinct processes. A step-by-step approach to national strategy development and local implementation is presented in Section 3. The last section contains annexes on some of the important aspects of PPM, summaries of a few country experiences and useful resource materials for further reading.

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<sup>3</sup> Tuberculosis Coalition for Technical Assistance. International Standards for Tuberculosis care (ISTC). The Hague: Tuberculosis Coalition for Technical Assistance, 2006.

## EVOLUTION AND EVIDENCE

As the first step of the PPM initiative, WHO conducted a global assessment of the role of private providers in TB control in 1999-2000<sup>4</sup>. The assessment helped to both underscore the need and identify possible approaches for NTPs to work with the private sector to initiate and sustain productive collaboration. An expert group that convened at WHO headquarters in Geneva in 2000 discussed the findings of the assessment and recommended the setting up of demonstration projects on PPM in different settings and using successful models as the basis for scaling up<sup>5</sup>. In 2001, WHO helped to set up or formalize local PPM initiatives at diverse sites in Asia and Africa. A systematic documentation of processes and outcomes of these and other projects provided evidence for the feasibility and effectiveness of PPM for DOTS implementation<sup>6</sup>. Practical tools to help implement PPM were then developed based on these projects and other experiences on the ground<sup>7</sup>.

To build on the work undertaken in developing PPM DOTS and to address the issue urgently and effectively, the global DOTS Expansion Working Group (DEWG) established a Subgroup on Public-Private Mix for DOTS Expansion (PPM DOTS Subgroup) with its secretariat based in WHO, Geneva. The first meeting of the Subgroup, held in Geneva in November 2002, urged WHO regions and countries to embark on and expand PPM DOTS activities<sup>8</sup>. The development of practical tools enabled the development of new PPM DOTS initiatives in several settings.

The concept of PPM has evolved rapidly and its scope has been broadened in response to ground realities. A common observation among many countries has been that several public sector care providers such as general public hospitals, academic institutions and health insurance organizations have also been, like private providers, indifferent to the principles of DOTS in managing TB cases. Moreover, in some countries, these institutional providers managed much larger TB case load than private providers. The second meeting of the PPM DOTS Subgroup, held in New Delhi in February 2004, acknowledged this and recommended widening of the scope of PPM to include all public and private health care providers not linked formally to NTP<sup>9</sup>. The term PPM thus represents a comprehensive approach to engage not just the private sector but all relevant health care providers in DOTS implementation. It encompasses all forms of public-private (between NTP and the private sector), public-public (between NTP and other public sector care providers) and private-private (e.g. between an NGO or a private hospital and the neighbourhood private providers) collaboration for the common purpose of ensuring provision of standard TB care in a community.

<sup>4</sup> Involving Private Practitioners in Tuberculosis Control: Issues, interventions, and emerging policy framework. WHO/CDS/TB/2001.285. Geneva: World Health Organization, 2001.

<sup>5</sup> Informal consultation on private practitioners involvement in control of communicable diseases with a focus on tuberculosis. WHO/CDS/TB/2000.282. Geneva: World Health Organization, 2000.

<sup>6</sup> Lönnroth K, Uplekar M, Arora VK, Juvekar S, Lan NTN, Mvaniki D, Pathania V. Public-Private Mix for Improved TB Control – what makes it work? Bulletin of WHO, 2004; 82: 580-86.

<sup>7</sup> Public-Private Mix for DOTS - Practical tools to help implementation. WHO/CDS/TB/2003.325. Geneva: World Health Organization, 2003.

<sup>8</sup> Report of the First meeting of the Public-Private Mix Subgroup for DOTS expansion. WHO/CDS/TB/2003.317. Geneva: World Health Organization, 2003

<sup>9</sup> Public-Private Mix for DOTS. Global progress. Report of the Second Meeting of the Public-Private Mix Subgroup for DOTS Expansion. WHO/HTM/TB/2004.338. Geneva: World Health Organization, 2004.

PPM-related activities have increased and evolved significantly over the last few years. However, only a few countries have begun scaling up PPM. The third PPM Subgroup meeting, held in Manila in April 2005, reviewed and discussed barriers to scale up PPM and concluded that advocacy as well as technical assistance for PPM needed to be intensified<sup>10</sup>. There was an increasing number of requests from countries to help design and assist implementation of PPM programmes as a part of DOTS expansion. Hence this guiding document.

To date, over 40 PPM projects have been implemented in 14 countries, of which over 25 have been evaluated with regard to process and/or outcomes (a list of references is provided in Annex 5). These include diverse projects linking NTPs to various care providers like non-qualified village doctors (Bangladesh), informal and formal private practitioners (India), private general practitioners (Myanmar), specialist chest physicians (Kenya), public and private hospitals (Indonesia and China), nongovernmental organizations (Bangladesh and Nepal) and a mix of providers (Philippines and India). Treatment outcomes have been evaluated for over 20 000 TB patients. Treatment success rates in the projects that provided drugs free of charge to patients were between 75% and 90%. The impact on case detection has also been evaluated in several PPM projects. All these projects have shown an increase in case detection ranging from 10% to 60%. A cost and cost-effectiveness analysis undertaken for two well-established projects in India showed that PPM DOTS was at least as cost-effective as DOTS delivered exclusively by the public sector, and that the approach was much more cost-effective as compared with TB treatment provided in the conventional non-DOTS private health sector. Moreover, PPM significantly reduced the financial burden on TB patients and facilitated their access to quality TB care<sup>11</sup>. Data from Bangladesh, India, Myanmar and the Philippines indicate that PPM helps to reach the poor when providers used by them are also involved. In conclusion, evidence emerging from the field shows that PPM is a feasible, productive and cost-effective approach to improve case detection and treatment outcomes as well as to foster equity in access to TB care and financial protection for the poor.

The generic PPM approach that has emerged from these projects involves mapping of all relevant public and private health care providers in a given setting and identifying suitable roles for different providers in TB control. It is essential that NTPs develop and maintain strong stewardship capacity to guide and oversee the newly joined private and public providers. The generic PPM model (see Annex 1) entails that the government-run NTP assumes the responsibility of funding, regulating and monitoring, while the day-to-day collaborative implementation may be carried out by the local unit of NTP itself or by relevant non-NTP providers. The type of contractual arrangements and compensation in cash or in kind to involve providers will vary depending on the local context. The basic premise of PPM for TB control is that the financial resources for coordination, training, supervision and surveillance are provided or arranged by NTP, the provision of drugs to patients is free of charge, and the fees for tests and consultations are waived or kept to a minimum to facilitate access by the poor.

<sup>10</sup> Public-Private Mix for DOTS: Towards scaling up. Report from the 3<sup>rd</sup> meeting of the PPM Subgroup for DOTS expansion. WHO/HTM/TB/2005.356 Geneva: World health Organization, 2005

<sup>11</sup> Cost and cost-effectiveness of Public-Private Mix DOTS: Evidence from two pilot projects in India WHO/HTM/TB/2004.337. Geneva: World health Organization, 2004.

Local situations, characteristics of diverse providers and approaches to collaboration vary greatly across and within countries. Therefore, guidelines that can be applied equally well to all settings are difficult to formulate. This document, therefore, intends to offer guidance that may help countries to develop their own guidelines. This task should primarily be undertaken by NTPs. And NTPs should involve all other stakeholders from the public, private and NGO sectors from the outset. The following guiding principles are based on a synthesis of an expanding evidence base on the processes and outcomes of field-based PPM initiatives in diverse country settings.



## IMPLEMENTING PPM FOR TB CONTROL

Implementing PPM for TB control involves the following main steps:

- National situation assessment
- Creating national resources
- Developing operational guidelines
- Local implementation
- Scaling up

### 3.1 National situation assessment

Patients with symptoms suggestive of TB present themselves to any of a broad array of health care providers depending upon availability, acceptability, costs and many other factors (Box 1). This provider mix varies across and within countries. Almost every health care provider in any setting can potentially contribute to TB control by undertaking one or more of the several essential tasks of suspecting, referring, diagnosing, managing and notifying TB cases. Without PPM in place, TB patients may shuttle among health care providers, speciality clinics and other sources of care before or during the course of their diagnosis and treatment.

#### Box 1. Some categories of health care providers who manage TB symptomatics and patients

##### Public health care providers

- General hospitals
- Speciality hospitals and academic institutions
- Health institutions under state insurance schemes
- Health facilities under government corporations and ministries
- Prison health services
- Army health services

##### Private health care providers

- Private hospitals and clinics
- Corporate health services
- NGO hospitals and clinics
- Individual private physicians, nurses, midwives, clinical officers, etc
- Pharmacies and drug shops
- Practitioners of traditional medical systems
- Informal, non-qualified practitioners



The simple first steps in situation assessment would be to:

**a. Map Providers:**

- make a list of all health care provider groups including, for example, public, voluntary, academia, private-qualified, private non-qualified, etc.;
- determine if they are presently linked with NTP and, if so, what is their current role in DOTS implementation;
- assess what potential contribution the providers can make; and
- identify input required to optimize their contribution.

This simple exercise could help assess whether and how PPM needs to be undertaken in a particular country setting.

Gathering more detailed information on each provider group such as a mapping of their service areas and determining their TB management practices, the number and proportion of TB cases they detect and treatment outcomes among their patients could be very useful in designing PPM interventions. In reality, however, for most settings, all this information is neither available nor essential. Eventually, implementation of PPM in itself should help produce this information on a regular basis.

**b. Assess NTP capacity for PPM:**

A pertinent question for the next step would be when to implement PPM. To be able to engage other health care providers in TB control, NTPs should not only have demonstrated how DOTS can be successfully implemented but should also have additional capacity to set up and support a sustainable partnership. Therefore, a situation assessment should also examine the capacity of the NTP to start engaging other providers. However, initiation of PPM need not wait until an NTP achieves full coverage with DOTS all over the country. It can be started in areas where DOTS is effectively operational. Evidence shows that PPM can be successfully undertaken if functioning microscopy units and treatment and supervisory services are available locally within the public sector. Even in the absence of these services, NTPs could begin involving the non-NTP providers early in the planning stages of setting up and developing DOTS programmes. Early involvement is particularly relevant in areas where public sector services are sparse or do not exist at all.

**c. Assess regulatory environment:**

Existing regulation concerning anti-TB drug prescription and TB notification should be reviewed as part of the situation assessment. Although there are few successful examples of effective regulation of retail drug sales in poor countries, ways to enforce existing regulations which are beneficial for DOTS should be explored. Free supply of anti-TB drugs may be linked to a system of certification to ensure their proper use. Few developing countries have a functioning policy for notification of all TB cases diagnosed or treated outside NTP facilities. If such a legislation exists, PPM should facilitate its enforcement.

### 3.2 Creating national resources

For systematic and sustainable development of PPM, having a PPM focal person at a senior level in NTP is essential. This focal person should be advised and guided by a steering group such as a national PPM task force with representatives from major provider groups and stakeholders (Box 2). The task force should meet regularly,

at a greater frequency initially, to ensure that the willingness and commitment for PPM translates into practice in a systematic and phased manner. Depending on the size of the country, the number of non-NTP health care providers, the volume of TB suspects and patients they manage and the systems required to link the providers to NTP, the national PPM focal person and the task force may have counterparts at regional, provincial, district and sub-district levels.

### Box 2. PPM stakeholders at national, provincial and local levels

- Ministry of Health, its departments and sub-national counterparts
- Other ministries such as Ministries of Labour, Interior, Defence etc.
- Health insurance organization
- Drug regulatory authority
- Academic institutions
- Social welfare programme for the poor and marginalized
- Professional organizations
- Hospital associations, Pharmacy associations etc
- National and international NGOs involved in TB service delivery
- Pharmaceutical industry
- Consumer organizations

Resources need to be mobilized in order to ensure sufficient manpower for planning, implementation and supervision of PPM at national, regional and local levels. All relevant local, national and international funding sources should be tapped for PPM piloting and scale up. Annex 3 provides a generic format for budgeting of PPM activities.

### 3.3 Developing operational guidelines

Operational guidelines are essential to clarify the mutual roles and responsibilities of NTP staff and non-NTP health care providers. PPM national policy and operational guideline should be developed and implemented as an iterative process: policy leading to preparation of operational guidelines to help phased implementation and results of implementation feeding back into policy for any revision required.

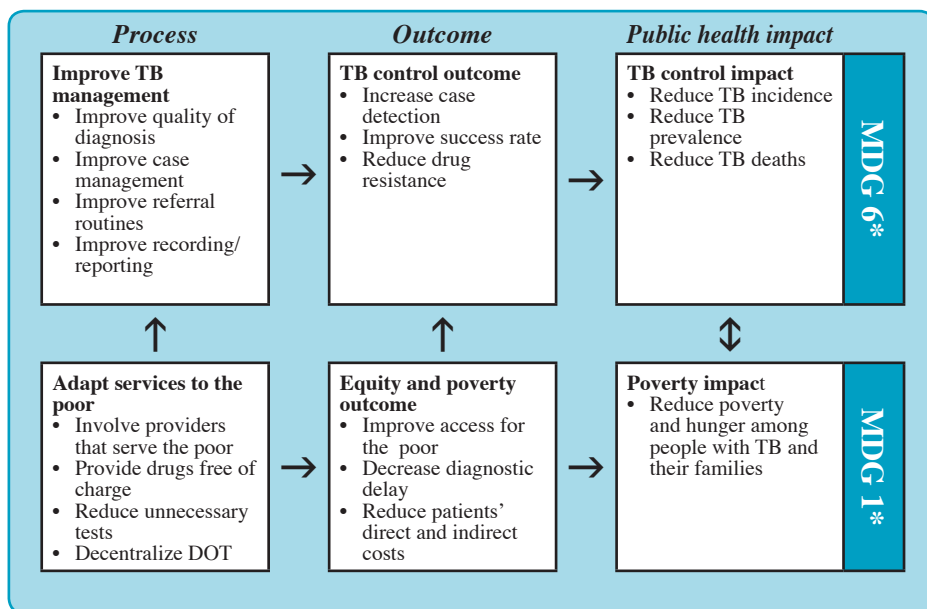
There are seven essential elements of developing operational guidelines for PPM. These include:

- 1) formulating objectives;
- 2) defining the task mix for different providers;
- 3) developing practical tools to help implementation;
- 4) training;
- 5) certification;
- 6) incentives and enablers; and
- 7) monitoring and evaluation.

**3.3.1 Formulating objectives for PPM DOTS**

Objectives should be formulated in relation to national TB control objectives and targets as well as to the Millennium Development Goals (MDGs). Objectives may be defined with regard to process, outcome and impact of PPM for TB control (Figure 1).

*Figure 1. Logical framework for linkages between PPM objectives, TB control and MDGs*



(\*MDG 6: Combat HIV/AIDS, Malaria and other diseases. MDG 1: Eradicate extreme poverty and hunger)

**3.3.2 Defining task mix**

A central part of planning a PPM initiative locally is to map health providers and investigate their current role in TB diagnosis and treatment, their capacity to perform different DOTS tasks as well as their willingness to participate in PPM (see Section 3.4). To guide this process, it is useful to define which provider type can take on which task. Table 1 lists some of the main tasks of DOTS implementation, divided into "clinical" and "public health" functions, and indicates how these tasks may be distributed. The suggested provider types and task mix is indicative and need to be adapted to local contexts. The Table does not include TB/HIV management or management of multidrug-resistant (MDR) TB. Depending on local contexts, these tasks should also be considered for relevant provider categories.

*Table 1. Indicative DOTS task mix for different provider categories. Shaded cells correspond to tasks that could be taken up by respective provider type*

	Tasks	National TB programme	Public or Private Institution	Individual private provider	Private/Public laboratory	Non physician/pharmacy
Clinical tasks	Identify TB symptomatics					
	Collect sputum samples					
	Refer TB suspects					
	Notify/Record cases					
	Supervise treatment					
	Do smear microscopy					
	Diagnose TB					
	Prescribe treatment					
	Inform patients about TB					
Public health tasks	Identify and supervise treatment supporters					
	Follow up on defaulters					
	Training care providers					
	Supervision					
	Quality assurance for laboratories					
	Monitoring and evaluation					
	Drugs and supplies management					
	Provide stewardship: financing and regulation					

To illustrate, an NTP should be in a position to carry out all the tasks; a medical college or a public, voluntary or private institution may also be able to undertake most clinical and public health tasks. Individual providers including pharmacists

and non-physicians may be able to refer suspects and, at times, supervise treatment while trained physicians could diagnose and categorize patients as well as initiate treatment. The NTP would be expected to fill the gaps and weaknesses by supporting or taking on the tasks that other providers are unwilling or unable to carry out.

Stewardship and key functions of NTP include provision of funds, supply of drugs and other materials and quality assurance. The NTP should constitute a local task force, coalition or coordination committee. It should have representatives of relevant stakeholders. This body can act as an interface between NTP and other providers. It may also advise NTP in carrying out various tasks such as advocacy, sensitization, training, supervision, quality control, monitoring and evaluation. In some settings, the issue of diagnosis of smear- and culture-negative forms of TB has been effectively addressed by establishing diagnostic committees comprising relevant local experts.

### 3.3.3 Developing practical tools

The building blocks for PPM implementation are tools such as the laboratory request form, referral-for-treatment form, feedback or back-referral form, transfer form, laboratory register, TB register and the TB treatment card. Most of the tools could be adaptations of those used routinely by NTP. A few new tools may have to be developed. As in the case of operational guidelines, the development of PPM tools should be undertaken in close consultation and dialogue with stakeholder provider groups. Their proper use in practice is likely only if they are a few in number and are simple, mutually acceptable and useful.

The practical tools are also discussed in greater detail in a published document<sup>12</sup>. In summary, three types of practical tools have been found to be useful:

- 1) templates of contract to formalize collaboration such as a memorandum of understanding (MOU) for institutions and a letter of agreement (LOA) for individual providers;
- 2) tools of referral to facilitate referral routines and flow of information such as laboratory request form, back-referral or feedback form, case notification form, etc; and
- 3) tools of supervision to enable monitoring which include the usual NTP tools with minor adaptations such as treatment cards, laboratory and treatment registers, supervision check lists, quarterly reports, etc.

Large hospitals that receive and diagnose cases from wide catchment areas may not be well-suited or willing to undertake directly observed treatment (DOT) or absentee retrieval. To ease the burden of these essential tasks to enhance adherence, effective referral links should be established between such institutions and providers operating close to patients' homes or workplaces. Locally-appropriate mechanisms and resources may be required to monitor referrals and to ensure that patients diagnosed with TB do not drop out after referral for treatment. For example, a log of referred TB cases can be kept while copies of referral forms are sent to staff dedicated to follow-up referrals.

<sup>12</sup> Practical tools for PPM DOTS: A Guide for NTP Managers WHO/CDS/TB/2003.325. World Health Organization, Geneva. 2003

Adaptation of existing implementation tools or introduction of new tools should be kept to a minimum. In some settings, implementation and evaluation of PPM projects have been possible with the introduction of just two additional new formats – referral forms for the use of non-NTP providers and acknowledgement or feedback forms for NTP – along with proper recording of the identity of referring and treating provider in laboratory and treatment registers.

#### 3.3.4 Training

Often, the success of PPM initiatives depends on how receptive NTP staffs are to the idea of PPM and how well other provider groups are sensitized and trained. Therefore, PPM operational guidelines should include a training strategy, which is linked to or integrated with other NTP training activities. It is as important to train NTP staff on their assigned PPM tasks as it is to train other involved providers. The training strategy should include the following steps:

- Determine the task mix (see Section 3.3.2).
- Decide on training content for different providers, including NTP staff, based on an analysis of training needs in relation to assigned tasks.
- Adapt training methods to local context and the providers' different characteristics and working conditions.
- Develop training materials and training programmes, using or adapting available TB training modules (see Annex 5).
- Devise a structure for follow up after training, which is linked to ongoing programme supervision activities.
- Periodically revise training programmes and plans based on evaluations.

Existing NTP and international training materials and methods should be used as a basis for the training. Some of these are listed in Annex 5. However, training materials and methods need to be suitably adapted to special needs and working conditions of different types of providers. For example, it is unreasonable to expect a busy private practitioner to attend a training course for several days. A large part of the training may have to be offered "on the job", combined with supervision.

It is also important to identify and use suitable trainers. To illustrate, heads of large hospitals or medical colleges may be influenced most effectively through information, training and encouragement by senior-level NTP staff. Individual qualified providers may be briefed by medical officers within NTP, while non-physicians may be comfortable interacting with field-level technical staff. A common observation has been that the involvement of senior officials within NTP and well-known local and national experts in the private sector as trainers helps considerably to improve the credibility and acceptance of the training.

### 3.3.5 Certification

Certification is a process by which an NTP officially acknowledges that a provider, laboratory or an institution has met the appropriate criteria to provide the services being certified. For example, in case of institutions, the certification would require compliance with a uniform set of standards and procedures essential for proper delivery of standardized, quality TB care. While the criteria for certification and de-certification should be related to the specific task allocated to respective providers, these criteria should be similar for the public and private sectors. The certification may be informal initially and may gradually evolve into a formal, standardized procedure. Periodic evaluations of the system of certification as well as that of the criteria used for it should be undertaken. Re-certification should be done at regular intervals. Sufficient field-level experiences on a working system of formal certification are not yet available.

### 3.3.6 Incentives and enablers

A range of factors affect the ability and motivation of providers of all types to engage in the DOTS approach. Incentives and enablers, if well designed, can overcome some of the motivational barriers. They are useful not only to attract care providers and ensure their continued involvement but also to enhance their performance. A common notion has been that private care providers may not be interested in collaboration without adequate and direct financial compensation. Financial compensation may be necessary for providers who manage a large number of TB suspects and cases. However, evidence shows that individual private practitioners who have few TB patients at any time, and voluntary organizations providing TB care may find in-kind, non-monetary incentives sufficient to enter into collaboration with NTP. Some examples of effective non-monetary incentives include: access to free TB drugs, an opportunity to serve society through free care for the poor, access to free training and continuing education, free microscopy services, opportunity to deliver high quality services, recognition due to formal association with a government programme and potential to expand business as a result thereof. The types of incentives may vary from setting to setting. Financial incentives may have to be considered when bringing PPM DOTS to scale or when negotiating collaborative arrangements with professional associations. Payments to providers contracted by NTP or a health insurance organization may be linked to certification or accreditation by a third party or another mechanism created specially for the purpose. The reluctance to pay cash incentives often stems from the complexity of setting up and operating a transparent system that does not leave any scope for corrupt practices to creep in.

### 3.3.7 Surveillance and monitoring

The main aim of implementing PPM is to improve case detection and case management by bringing all patients managed by diverse health care providers under DOTS. It is important to monitor the process of PPM in relation to defined objectives. Indicators to monitor the quality of diagnostic and treatment services are the same as for any DOTS programme. Core indicators for monitoring the process and measuring the contribution of providers to overall TB control targets are summarized in Table 2. A suggested format for annual report of provider involvement and selected data on contribution by different providers to case detection and treatment is provided in Annex 4. Other objectives to monitor may

include: improved access for the poor, reduced diagnostic delay and financial protection for the poor patients (Figure 1).

*Table 2. Indicators for PPM interventions and their measurement*

Indicator	Measurement*	Data source**
<b>Process indicators</b>		
1. Proportion of reporting units that have implemented a PPM strategy	Number of reporting units (e.g. districts) that have implemented PPM strategy / total number of units in the selected area	Yearly report marked to indicate the presence of PPM interventions during the reporting period
2. Proportion of non-NTP health units (such as clinics, hospitals, institutions, etc.) participating in referral/ diagnosis / treatment / reporting of TB cases	Number of non-NTP providers in an area (unit) who are participating in DOTS implementation / all non-NTP providers in the selected area	Inventory of non-NTP providers in the area with identification of participating providers
<b>Outcome indicators</b>		
3. Proportion of new smear-positive cases detected through referral by non-NTP providers	Number of new smear-positive cases registered from among those referred by non-NTP providers / all new smear-positive cases registered	Standard laboratory register with a record of referring provider
4. Proportion of new smear-positive cases detected through diagnosis by non-NTP providers	Number of new smear-positive cases diagnosed by non-NTP providers / all new smear-positive cases registered	Standard laboratory register kept by respective diagnosing unit
5. Proportion of new smear-positive TB patients receiving DOT from non-NTP providers	Number of new smear-positive cases who received DOT from non-NTP providers / all new smear-positive cases registered	Standard TB register with a record of treating provider
6. Treatment outcomes of new smear-positive cases treated by different non-NTP providers	Cohort analysis disaggregated by type of health care provider delivering DOT	Standard TB register with a record of treating provider

\* Indicators 2-6 may be reported for each provider category of interest

\*\* See Annex 4 for suggested format of annual report of PPM involvement and contribution



### 3.4 Local implementation

Experiences of NTPs repeatedly inviting other care providers for training and receiving discouraging responses are not uncommon. In view of the inexperience of local NTP staff in interacting with diverse, independent care providers, clear guidance on how to proceed with local implementation should be given. The logical five steps in local implementation of PPM for TB control would be:

- 1) preparation
- 2) mapping and first contact with providers
- 3) selection of providers
- 4) implementation proper and
- 5) advocacy and communications

#### 3.4.1 Preparation

A clear, written message from the top NTP management on the importance and priority of PPM is the first prerequisite before local implementation begins. Operational guidelines, including guidance on local implementation, should preferably be made available. Draft sensitization and training materials should be ready for use. The implementation tools, including any new formats and adapted NTP registers and reports, should be handy. Most importantly, NTP staff must be oriented about PPM; their tasks and responsibilities should be defined and a plan of implementation should be available according to locally defined objectives for PPM. A local task force, equivalent to national task force, may be established to engage all relevant partners in planning and implementation at local level. Such a local task force might also be given operational responsibilities towards sensitization, training, supervision and quality control.

#### 3.4.2 Mapping and first contact

The local NTP unit should have a map of its area to enable marking of all public and non-public providers on it. In many settings and in large urban areas, such maps may have to be prepared with a door-to-door census of all types of health care providers. Other public health and development programmes and NGOs working in the local area may be able to assist in this task. In dealing with private providers, using a neutral interface such as a local NGO or a civil society institution has been found to expedite both provider enrolment and programme implementation. Depending on the local context and resources, mapping, making the first contact with the provider and sensitization may or may not be combined. While mapping will provide a general idea of the nature of individual and institutional providers, a first contact with the providers will be required to understand their current and potential contribution to TB control. During these visits, relevant NTP staff should also provide general information about the local DOTS programme and convey the desire to begin collaboration. Information obtained on different providers during the first contacts should be included in the mapping exercise.

#### 3.4.3 Selection of providers

Prioritization of providers for active collaboration and their training are important steps that require serious thought in local implementation. Some common

principles should be given consideration:

- a) Institutional providers are likely to give a higher yield of cases but will also require greater time and attention on the part of senior NTP staff. These may include medical colleges, general public hospitals, corporate health care institutions, institutions under health insurance organizations, etc.
- b) Private practitioners may not be handling a large number of cases individually but it may be possible to identify and target first the ones handling a large number of suspects and cases. Chest physicians with large practices may belong to this category.
- c) Since private practitioners may be the first port of call for most people, involving them will have additional benefits like reducing diagnostic delay and cost of care for patients.
- d) The poor are likely to first approach NGOs operating in poor areas, non-physicians like pharmacists, non-qualified providers and traditional healers. Approaching these types of providers might help in providing the poor with better access.
- e) In some communities, female patients may prefer female care providers. Involving female care providers may help to address gender differentials in case detection.
- f) Involving other public sector institutions within and outside the Ministry of Health may require a parallel process of getting approvals and directives from their top regional or national management.
- g) After initial mapping, first contact and sensitization, it should be possible to identify tough-to-tackle providers. It is worthwhile making a beginning with willing providers before spending energies on those reluctant to collaborate.

#### 3.4.4 Implementation proper

The method of launching PPM locally will vary from setting to setting. A proper launch with fanfare may be inspiring to both NTP staff and other care providers and may boost their initial commitment. In the beginning, PPM should be seen by both public and private counterparts as a "learning- by-doing" exercise. A key requirement, therefore, for NTP staff in particular, would be to give a fair amount of time and input patiently before expecting great outcomes. It is important that NTP staff stick to their commitment and diligently follow whatever is mutually agreed upon. The referral routines should be adhered to and proper records maintained. Any irregularity on the part of collaborating providers with regard to adherence to guidelines, providing quality care and maintaining proper records, if found, must be brought to their notice immediately but gently, and corrective measures taken to avoid recurrence. Also, in early stages, some form of documentation of the process should be maintained. Notes of problems that may arise and are locally identified should be made and forwarded to senior NTP management. This could help in better understanding the process of collaboration and also contribute towards any future revision of operational guidelines. Continuous dialogue between involved partners is necessary to address identified problems and potential tensions. Proper use of the practical tools and process and outcome indicators referred to above will help monitor the progress and evaluate the outcome of PPM.

### 3.4.5 Advocacy and communications

A good NTP DOTS programme is self-advocating, both for patients and for other care providers. It has been observed that as the services improve, more and more patients get attracted to them. This also helps in improving the image of the programme among other care providers. A successful and strong NTP is in a better position to elicit collaboration from other care providers. To generate and sustain interest in PPM DOTS, advocacy should be directed both at NTP managers and staff and their counterparts among other private and public provider groups. Improvements in communications are required at two levels – inter-provider communication and patient-provider communication. NTP staff may need input to learn to communicate effectively with diverse provider groups and all care providers would benefit from lessons in improving their communication and interaction with TB suspects and cases. Providing information to patients on the availability of TB services in the public and private sectors and the charges they may or may not need to pay for different services offered would help make the collaboration open and transparent and may also help minimize the possibilities of misuse and malpractice. NGOs with expertise in communication and social mobilization may provide useful assistance in communicating with both providers and patients. Locally-appropriate advocacy and communication methods and materials should be used giving due consideration to the social stigma attached to the disease and to those suffering from it.

### 3.5 Scaling up

Doing a proper situation assessment, creating adequate national resources, developing operational guidelines and giving guidance on local implementation should greatly facilitate setting up PPM initiatives in multiple and diverse settings. It is advisable to initiate implementation at sites where DOTS is being implemented satisfactorily and some additional capacity is available to take on PPM. Experience shows that implementation at all sites may not be equally smooth. Some unforeseen issues may surface during early implementation. Development of mutual trust will also require some time. Early initiatives will help demonstrate the capacity and willingness of both the public and private sector counterparts to actually undertake the tasks agreed upon. A careful process and outcome documentation of early initiatives will provide important lessons. Based on these, the operational guidelines should be modified or finalized. The International Standards for TB care (ISTC) could be a powerful tool for advocacy and education as well as implementation of PPM.

Scaling up of PPM should be in phases and should be based on a national plan. It should be an iterative process informed by experience gained from local implementation. Some examples of how countries have gone about initiating and scaling up PPM are given in Annex 2.

Some early experiences of scaling up show that making PPM an integral part of national TB control efforts requires sustained input and attention from NTP as well as involvement and support from major nongovernmental players such as intersectoral coalitions to fight TB and professional associations. The initial enthusiasm on both public and non-public sides may wane for a variety of

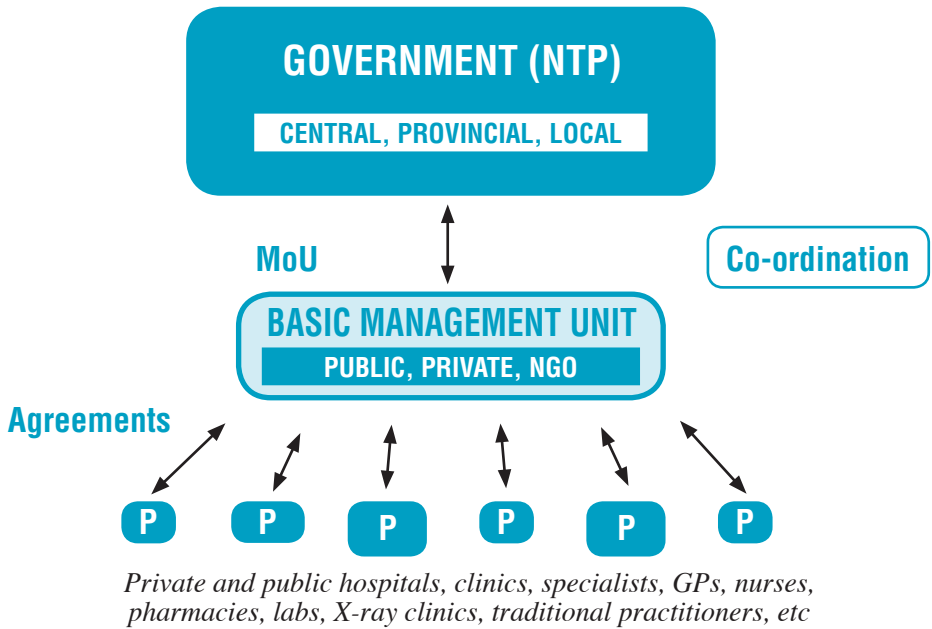
reasons. The staff may view PPM-related work as additional burden. Supervision may suffer if any additional staff inducted are withdrawn. Routine transfers of public sector staff, in or out of the PPM areas, necessitate their orientation and introduction to PPM activities which, if not done, may set back the process of ongoing implementation. It is, therefore, necessary to ensure sufficient long-term financial and human resources for PPM, and make PPM training a part of human resource development plans in NTP. Annex 3 provides guidance on budgeting for PPM.

It is also important to integrate PPM into routine surveillance and monitoring system using the forms suggested in Annex 4. If the results of collaboration in terms of increasing participation of other providers, increased case notification, improved programme performance, enhanced image of the programme in the eyes of other care providers and the community and, above all, increased patient satisfaction become apparent to involved partners, they are likely to remain enthused and to continue their productive collaboration.



Annex 1 THE GENERIC PPM MODEL

PPM DOTS: The Generic Model



The national government formulates a PPM policy in consultation with relevant stakeholders and takes on the stewardship role. A coordination mechanism helps to bring the public and the private sectors together, agree on implementation schemes and maintain a dialogue. The basic management unit – public, private, corporate or voluntary – implements DOTS through a network of willing health care providers in an area. P stands for health care provider of any type.



## SUMMARIES OF COUNTRY EXPERIENCES IN SCALING UP PPM DOTS

### INDIA

#### The context

India has the highest global burden of TB and the largest private medical sector. For most patients, including those with symptoms of TB, the first port of call is often a neighbourhood private doctor. The private health care providers are a heterogeneous, largely unregulated group and include those qualified in the Western and indigenous systems of medicine as well as non-qualified practitioners. Several studies have documented inappropriate TB management practices in the private sector. Anti-TB drugs are available on prescription in the private retail market. It is not difficult though to obtain TB drugs even without a prescription.

The Indian Medical Association (IMA) is the largest professional association that represents the general and specialist practitioners trained in Western medicine. Their membership is voluntary and less than a half of the eligible practitioners are members of IMA. Nongovernmental organizations providing primary health services also have a large presence in the country. Some of the large business houses provide health services to their employees and their families.

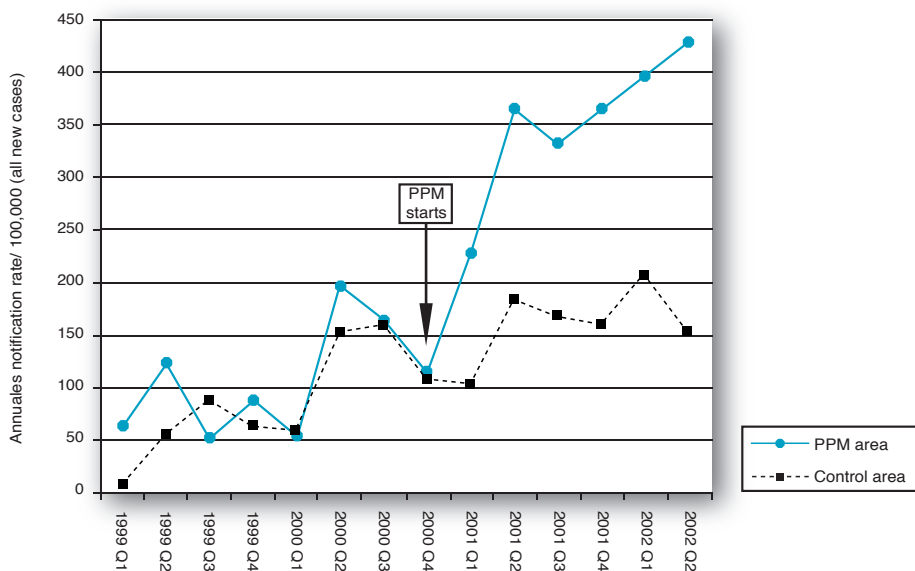
The Revised National Tuberculosis Control Programme (RNTCP) has been implementing a well-functioning DOTS programme that covers almost all parts of the country through its vast public health sector network. Besides the private sector, there are other public sector health care institutions in the country which manage significant proportions of TB cases. Traditionally they have not been linked to RNTCP and do not necessarily apply the DOTS strategy. These institutions include, for example, the Indian Railways (Ministry of Railways), the Employees' State Health Insurance Scheme (Ministry of Labour), the Central Government Health Services (Ministry of Health), the Armed Forces Medical Services (Ministry of Defence) and others.

#### Early experiences

Over the past decade, several initiatives to involve private health care providers have been launched in different settings within the country. They are being implemented variously by NGOs, local medical associations, academic institutions and by local RNTCP itself. The Mahavir Project in Hyderabad, Andhra Pradesh, was the first initiative to formally involve private providers in RNTCP where a charitable hospital was given the responsibility of implementing DOTS in a phased manner in a population of 500 000. The hospital linked up with neighbourhood private providers – formal and informal – practising in the area and engaged them in referring TB suspects and, if prepared, in administering DOT close to the patients' homes or workplaces. The project consistently achieved high treatment success rates and helped in reducing the cost of TB care for the patients (Murthy et al. 2001). Several other PPM DOTS initiatives have since been in place. A project in Delhi, supported by RNTCP, was started by the local medical association, which facilitated the engagement of small private hospitals and private general practitioners for DOTS implementation. This resulted in a rapid increase in case notification. (Fig 1; Arora et al. 2003, 2004).



**Figure 1. Case notification of new cases under DOTS in a PPM DOTS project area in New Delhi compared to a control area without PPM DOTS initiative.**

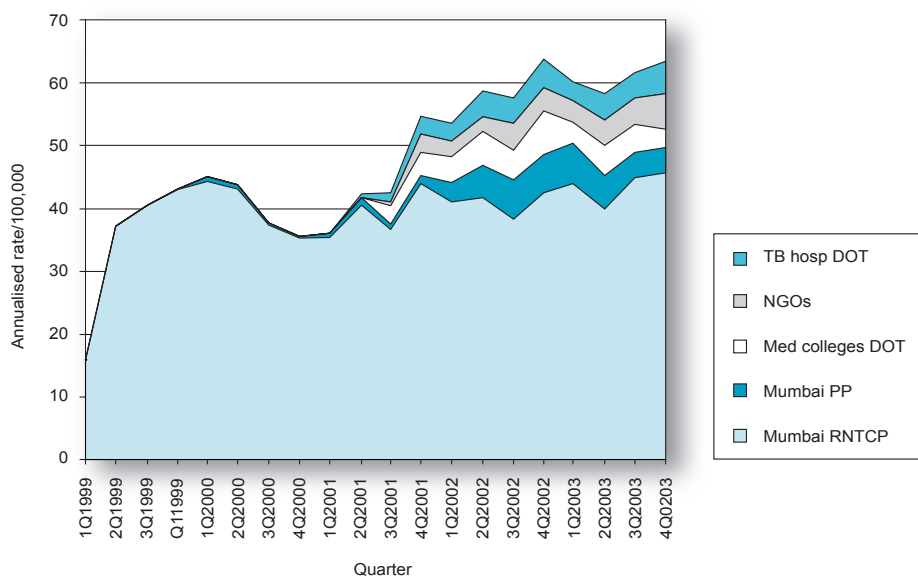


(Ref.: Arora et al. 2004)

Other PPM initiatives, including those in the state of Kerala, focused on collaboration with private clinics and laboratories and showed positive effects on TB case detection and treatment outcomes (Kumar et al 2005). In a working example of corporate sector involvement, PPM initiatives in the tea gardens of the states of West Bengal and Assam contributed about 40% of the case detection in the districts in which they are situated (Dewan et al 2003). In another PPM model in the state of Uttar Pradesh, an NGO contributed 18% of the total TB case detection. In Mumbai, the largest city in the state of Maharashtra, a comprehensive approach to involve all health care providers led to 40% increase in TB case detection in the city (Figure 2; Ambe et al. 2005). High treatment success rates were achieved at all sites.

All these initiatives demonstrated the feasibility of detecting and successfully treating significant numbers of additional TB cases through PPM DOTS. Subsequently, an economic evaluation of the PPM DOTS projects in Hyderabad and New Delhi was also undertaken. It showed that PPM DOTS can give good returns on investment. It not only saves costs to RNTCP but also, and more important, reduces the cost of care for patients (WHO, 2003; Floyd et al 2006).

**Figure 2. New smear-positive case detection under DOTS, by referring/diagnosing provider type, Mumbai 1999-2003.**  
 NGO=Non-governmental (not-for-profit) organization, PP=Private (for-profit) providers.



(Source: Ambe et al. 2005)

### Scaling up

Using the lessons learnt from productive collaborations with diverse types of providers and in consultation with some of their representatives, RNTCP has developed national guidelines to involve NGOs (MoH 2001) and private practitioners (MoH 2002) in DOTS implementation. The guidelines offer a menu of options for collaboration and clarify the mutual roles, responsibilities and rewards for the contribution. Training modules on PPM for RNTCP staff as well as a special training module on DOTS for private practitioners have also been prepared (Central TB Division, 2005).

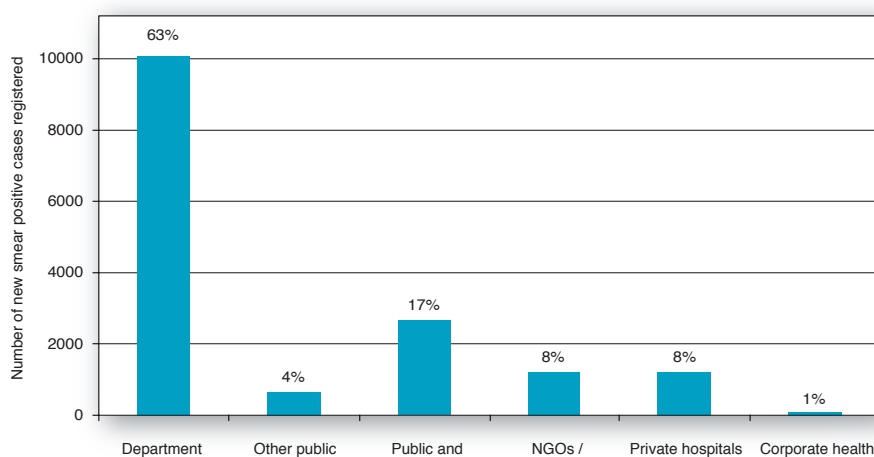
The RNTCP has also addressed the issue of the involvement of public and private medical colleges through a strategic approach. A national task force has been created to steer the collaboration. This was followed by the constitution of zonal- and state-level task forces specifically for the involvement of medical colleges. Each medical college has established a core committee for TB control to facilitate the application of DOTS to their patients. The RNTCP has offered additional staff and equipment where required and ensured regular flow of drugs and supplies. Guidance on referral and transfer management is available. Most of the public and private medical colleges have started collaborating with RNTCP. DOTS is a part of the medical curriculum as well.

The involvement of the public and private corporate sectors' health services in RNTCP has been undertaken through advocacy, training and provision of quality-assured drugs and supplies where required. Several corporate sector units such as tea gardens and coal mines have been collaborating with RNTCP. Linkages with other public health care providers have also been established. This is being achieved through a three-pronged approach of the

national unit of RNTCP generating policy directive from the relevant ministries to health facilities under their jurisdiction, state-level RNTCP staff pursuing it through, and local-level staff undertaking training, implementation, support and monitoring.

The RNTCP has recently started to intensify scaling up of PPM DOTS in 14 selected large urban areas. Under a special project, a PPM DOTS consultant has been appointed in each of the cities, supported by two field supervisors, to facilitate step-wise implementation. All cases detected through various PPM DOTS providers are registered in the standard district TB registers. For monitoring and evaluation and for drawing lessons for nationwide replication, a modified recording and reporting system has been designed. Source of referral of TB suspects, place of diagnosis, place of treatment and treatment outcome disaggregated by provider type are recorded. Initial results are encouraging, showing substantial contribution to case detection by different additional health care providers (Figure 3) and early treatment results are encouraging as well, with sputum conversion rates of 85-95% among patients treated by different provider types. After evaluation, a selected part of the PPM reporting may be mainstreamed into the national recording and reporting system. Lessons learned from the experiences and outcomes in 14 cities are being used for countrywide expansion and integration of intensified PPM DOTS into RNTCP.

**Figure 3.** *New S+ cases notified, by source of referral, in the last three quarters of 2004 in 12 cities (with a total of about 50 million population) scaling up PPM DOTS in India. Numbers above bars represent percentage of the total number of cases registered. About a third of the medical colleges are private. Thus, the total contribution from private sector providers, including NGOs, is about 20%*



(Source: Dr L.S. Chauhan, RNTCP, India)

## KENYA

### The context

A health systems assessment of TB care delivery in Kenya found that 61% of all health facilities in the country were dispensaries run by the public sector. It showed that while 40% of TB suspects sought care initially from a public dispensary, fewer than 15% of the dispensaries were engaged in DOTS implementation. Similarly, middle-level private practitioners are the first contact for care for a substantial proportion of the urban population. About a third of the health facilities are in the private sector. Little data exist on the role of pharmacies, private laboratories, army and police health services, prison health services and corporate health services involved in TB diagnosis and treatment.

Anti-TB drugs are available in the retail market and can be accessed by non-qualified providers as well. Different health care provider groups have their professional associations: Kenya Medical Association, Kenya Association of Physicians, Kenya Clinical Officers' Association and Nursing Association of Kenya. The Kenya Association for Prevention of Tuberculosis and Lung Disease (KAPTLD) is an NGO active in TB control. It has members from both the public and private sectors. KAPTLD has been at the forefront of initiating and helping expand PPM DOTS implementation in the country. There are two medical schools and their associated teaching hospitals. Both are engaged with the National Leprosy and TB Programme. The Kenya Medical Training College trains paramedical staff as part of the public sector DOTS network.

The emergence of HIV has led to a five-fold increase in TB case notification rates in Kenya over the past decade. In 2003, the DOTS case detection rate was 46% and the treatment success rate was 79%. Among other initiatives, an urban TB control project is planned, with a focus on expanding TB services to slum populations in cities.

### Early experiences

After much groundwork, a project to engage private chest physicians in TB control was launched in Nairobi in 2000 under the auspices of KAPTLD. This was initiated by the then NLTP (National Leprosy and Tuberculosis Programme) manager, who also happened to chair KAPTLD. Willing chest physicians were offered anti-TB drugs for their patients at subsidized rates and were asked in return to keep essential records and provide them to NLTP. Despite problems related to drug supply, supervision and support from NLTP, participating chest physicians recruited 173 TB cases within the first year of the project. Among the 61 sputum smear-positive cases, a treatment success rate of 84% was achieved (Mwaniki et al 2002).

In this first KAPTLD/NLTP initiative on PPM DOTS, some simple practical tools to facilitate collaboration were also developed and used. The tools included: agreement form for the collaborating facility, agreement form for the patient, referral-cum-notification form, patient appointment card and TB register. Drugs were not offered free to the patients but were given at substantially reduced rates. Doctors were allowed to charge for consultation. Poor patients, therefore, had difficulties accessing the services, but were referred to the public NLTP facilities. Training was arranged through the relevant professional association.

### Scaling up

Encouraged by the positive response of the PPM DOTS initiative and the role KAPTLD played in carrying out the project, NLTP has embarked on scaling up PPM DOTS in

large part initially through strengthening support to KAPTL D. The KAPTL D currently has a national coordinator, a technical officer, an advocacy and communications officer, a laboratory coordinator and a health information management specialist – all working on PPM DOTS expansion. At the national level within NLTP, the focal person for urban TB control is also responsible for the development of PPM DOTS. The Nairobi PPM DOTS initiative has already been scaled up. In 2004, 9% of around 20 000 cases notified in Nairobi were reported by and managed in the private sector. It is believed that, when fully engaged, the private sector would contribute about 20% of the cases in the city. PPM DOTS initiatives have also been started in the remaining four large cities in the country.

The focus of PPM DOTS has also been broadened to include the first-level care providers – nurses and clinical officers. Willing private practitioners are offered short training courses on the NLTP guidelines on DOTS and the role they could play in TB control. These courses are organized through relevant professional associations. The courses range from evening "continuing professional development" meetings for medical doctors to a two-day more intensive training for nurses and clinical officers. There is a substantial amount of "door-to-door" messaging to private health care providers by both NLTP and KAPTL D staff. In line with often successful marketing tactics of drug companies, it is felt that PPM DOTS could be scaled up faster and better if the "door-to-door" messaging by special NLTP/KAPTL D staff recruited specifically for this purpose is undertaken. This process could be used to disseminate guidelines and other educational materials for improving TB management practices in the private sector.

The TB register now has a column to capture data on referrals of patients from several potential sources, including the private sector. The TB register used in the private sector is exactly the same as the one in the public sector. NLTP programme staff will regularly collect, analyse and aggregate data from private health care providers in their zones. However, NLTP has instructed to disaggregate the data initially so that the contribution of the private sector to TB control can be carefully monitored and evaluated (Table 1).

The NLTP recognizes that effective scaling up of PPM DOTS will require sufficient additional resources – human as well as financial. Efforts are under way to tap all available resources through various mechanisms at the disposal of NLTP, including a grant application to the Global Fund to Fight AIDS, TB and Malaria.

*Table 1. All cases of TB registered by PPM project in Nairobi, 2002-2004*

Year	New ss+ PTB	Re-treatment	Smear-negative	Extra-pulmonary	Un-classified	Total
2002	121	4	93	82	99	399
2003	354	26	454	344	298	1475
2004	471	44	932	426	63	1936

## THE PHILIPPINES

### The context

The Philippines has a large and well-developed private health sector comprising several thousand individual practitioners and over a thousand hospitals of various sizes. The national tuberculosis prevalence survey of 1997 showed that over a third of TB symptomatics consulted a private physician for treatment. Large proportions of symptomatics also self-medicate or seek relief at pharmacies. Studies in the past have documented low awareness of DOTS and inappropriate TB management practices in the private sector. Anti-TB drugs have been available in private pharmacies without much regulation on their sale. Several national and international NGOs are active in the field of TB control.

The Department of Health (DoH) adopted the DOTS strategy for TB control in 1996 and expanded it rapidly to achieve countrywide coverage by 2003. Thanks to strong government commitment and a relatively well-staffed programme, the country has already met the global target for treatment success and is on its way to achieve the case detection target.

The Philippines offers a very good example of partnership building for TB control. Several unique initiatives from within and outside DoH have helped strengthen partnership for both TB advocacy and care provision. A pioneering one has been the creation in 1994 of the Philippines Coalition Against Tuberculosis (PhilCAT) – an NGO platform set up to bring together all stakeholders including, among others, the Department of Health and the private sector, for the common purpose of controlling TB in the country.

A significant enabler for PPM DOTS in the Philippines has been the government's social insurance scheme for health care provision managed by PhilHealth – Philippines Health Insurance Corporation. PhilHealth compensates private providers for their contribution to proper TB case management.

### Early experiences

The early PPM projects were initiated by the private sector with support and encouragement from DoH. These projects included a DOTS clinic started by a private infectious disease specialist at a university hospital as early as 1995, even before DoH adopted DOTS as the national strategy. This was soon followed by the launching of a DOTS programme for a neighbourhood slum by a health foundation based in a tertiary care medical institution. Both the projects succeeded in setting up, strengthening and sustaining their programmes. They also provided important lessons for subsequent projects.

The early projects led to the establishment of several other initiatives in diverse settings such as workplaces, hospitals, corporate health facilities, family practices, health maintenance organizations, etc. Evaluations of these projects convincingly demonstrated the feasibility of effectively engaging different types of health care providers in DOTS implementation.

The existence of an umbrella organization like PhilCAT has helped greatly in sustaining the interest and enthusiasm of both DoH and other care providers despite the teething troubles in getting the collaborations working. PhilCAT has been instrumental in generating resources for setting up and guiding pilot projects as well as in monitoring and

evaluating them. To facilitate the involvement of medical colleges, PhilCAT established a TB task force for medical colleges. Being a decentralized health system, both PhilCAT and DoH had to make efforts to promote the application of PPM DOTS by regional and local governments. PhilCAT has also been undertaking training of private providers for their certification by PhilHealth.

### **Scaling up**

As it was for the early initiatives, scaling up of PPM DOTS in the Philippines has also been realized through strong efforts on both sides – the private sector and DoH. PhilTIPS has been a well-funded, medium-term project specially for engaging the private sector in TB control (TIPS stands for Tuberculosis Initiatives for the Private Sector). The DoH prepared proposals and has received grants from both the Global Drug Facility and the Global Fund to Fight AIDS, TB and Malaria for expanding PPM DOTS in the country.

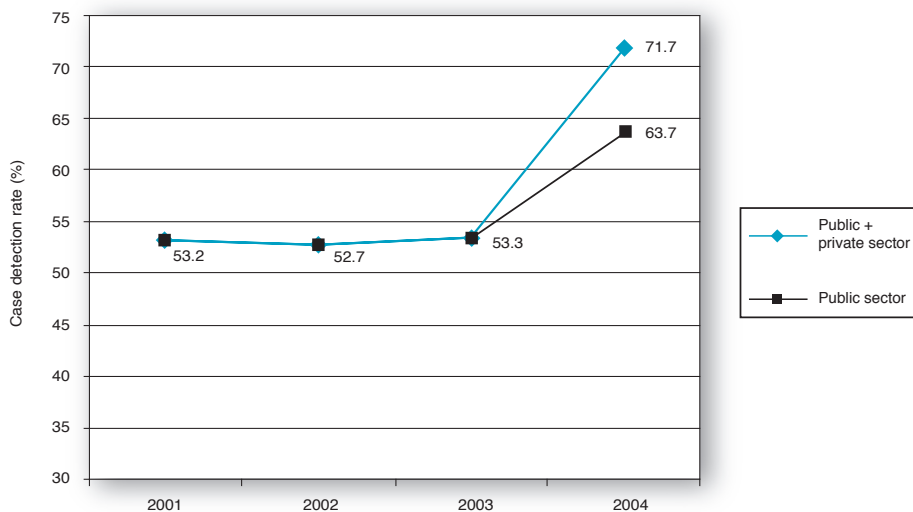
Building on the foundation laid by PhilCAT and DoH, PhilTIPS has been engaged in action on the ground, training and research through several initiatives. Some of the important ones include establishment of several PPM DOTS units in the private sector across the country, a Pharmacy DOTS Initiative and competitive Master TB Educator Awards for selected medical colleges incorporating DOTS in their teaching curriculum in innovative ways.

Thanks to the resources available from GFATM and the commitment of DoH, PPM DOTS has been mainstreamed into national TB control efforts. National and regional coordinating committees for PPM DOTS have been set up, operational guidelines for PPM DOTS developed (DoH and PhilCAT 2004), training materials prepared and several PPM DOTS units established. Standards for certifying these units have also been introduced.

A major enabler to attract private providers to join PPM DOTS has been the ‘TB DOTS outpatient benefit package’ of PhilHealth as mentioned above. After much consultation, PhilHealth has developed a ‘TB package’ within which accredited health institutions would be compensated for TB care provision. Accreditation is given only to those institutions which are certified by the National Coordinating Committee. Individual providers could avail the benefits by linking themselves to the accredited health institutions after first undergoing training in DOTS. PhilCAT has been given the responsibility of training care providers for certification purposes.

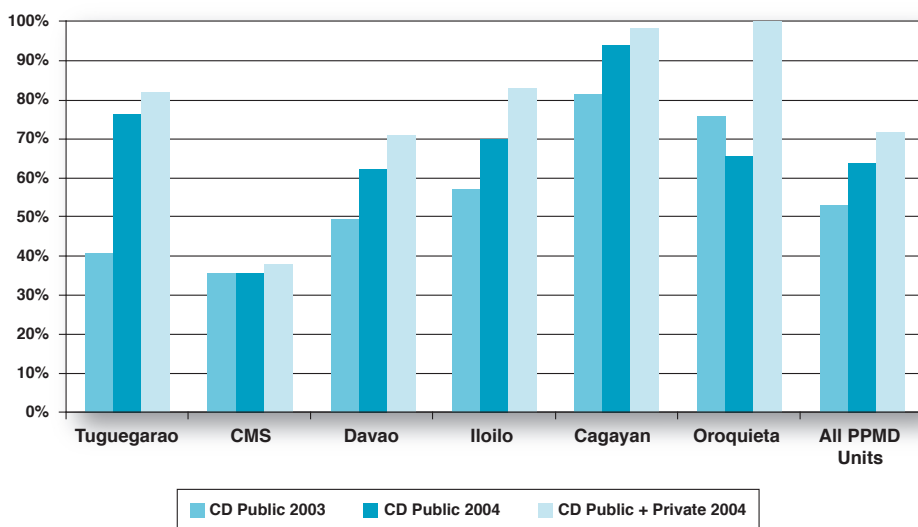
A recent evaluation of a sample of PPM DOTS units found that all the units had contributed to increased TB case detection. Collectively, these units helped to achieve the case detection target of 70% within the population covered (Fig. 4). In all but one sites, the involvement of private facilities also led to improved performance of public sector facilities (Fig. 5).

**Figure 4.** Case detection trends in five sites (total about 3 million population) in the Philippines with seven PPM DOTS units.



(Source: Evaluation report of GFATM-supported PPM DOTS initiatives in the Philippines. NTP, Tropical Disease Foundation, PhilCAT, WHO/WPRO and WHO/Philippines, 2005).

**Figure 5.** Case detection rate of new smear-positive cases with and without contribution by private facilities in seven PPM DOTS sites. Note: CD means case detection rate (%).



(Source: Evaluation report of GFATM-supported PPM DOTS initiatives in the Philippines. NTP, Tropical Disease Foundation, PhilCAT, WHO/WPRO and WHO/Philippines, 2005).



## BANGLADESH

### The context

Bangladesh ranks fifth among the 22 highest TB-burden countries in the world. The country adopted the DOTS strategy for TB control in 1993. Over the last decade, the NTP has expanded to cover nearly the entire country. The global targets set by the World Health Assembly for 2005 include detecting at least 70% of infectious TB cases and successfully treating 85% of them. Despite improvements in the TB services offered by NTP and DOTS implementation by several collaborating NGOs, the smear-positive case detection rate in Bangladesh was only 33% in 2003 and the treatment success rate was also lower than expected – 84% in 2002. The overall TB control efforts in Bangladesh can be said to have taken the form of large-scale PPM DOTS. The NTP largely plays the role of a steward – financing and monitoring – while programme implementation in most parts of the country is entrusted to NGOs. Of particular significance is an initiative described below, which demonstrates how PPM DOTS is relevant and can be applied successfully in rural areas.

Bangladesh has a large private health sector as much in rural as in urban areas. It comprises formal and informal individual private practitioners as well as private commercial and voluntary institutions. The private sector providers outnumber those in the public sector. Estimates show that 50% of doctors, 42% of nurses, 65% of paramedics and 100% of informal (non-qualified and unregistered) village doctors are in the private sector. The informal private practitioners or village doctors, so called due to their large presence in rural areas, are by far the largest group of health care providers. It consists of semi-qualified or unqualified allopathic practitioners, drug vendors and practitioners of non-allopathic or mixed systems of medicine. With over 75% of the population living in rural areas, village doctors provide the majority of outpatient health care in Bangladesh.

Their physical and cultural proximity and inexpensive services make village doctors most commonly-used care providers among rural people, especially the poor. Poor quality of their services and irrational use of drugs have been the two major concerns about village doctors. Possible delays in TB diagnosis and misuse of antibiotics make them a liability for TB control. An NGO engaged in leprosy and TB control – Damien Foundation Bangladesh – recognized the potential of these "non-doctors" embraced by the rural folks in improving access to quality TB care in villages. A special initiative aimed at making use of village doctors in TB control was, therefore, initiated. The NGO receives guidance and support as well as TB drugs and laboratory supplies from NTP.

### Early experiences

The process of engaging the village doctor began in selected project areas and was expanded in phases, learning from and improving upon the experiences. First, a list of all village doctors in the project area was compiled from information obtained mainly from two sources – the Village Doctors' Association and records available with drug company representatives who visited the doctors to sell their products.

Invitations were sent out to village doctors, in batches of 30 to 40, requesting them to participate in a one-day orientation and training on TB. The training was organized in the government health centres of the respective sub-district and was facilitated jointly by the Health and Family Planning Officer of the centre and the NGO staff. The intention was to drive home the importance of the project and the support of the government for it. During their training, all important aspects of the TB programme were covered. At the end of

the training, those volunteering to join the TB project and willing to undertake the tasks of referring TB suspects to the microscopy centres in their respective areas, carrying out DOT of patients living in the neighbourhood, maintaining drugs and records exactly as instructed, and agreeing to be supervised regularly and also through surprise checks were enlisted.

The village doctors were ensured of the necessary supply of sputum cups, drugs and treatment cards. No direct financial incentives for their contribution were offered. However, all trainee village doctors were provided with travel costs related to the training, lunch on the training day and a small per diem, all amounting to a total of US\$ 5 per trainee. The participating village doctors were also offered one-day refresher training courses once every year during which any problems they raised were discussed, their contribution to TB control was shared and appreciated as well as important aspects of the TB project taught in the initial training were reemphasized.

When they suspect TB, village doctors provide two cups to the patient for a spot and a next-morning sample. The patients are then referred to the closest microscopy centre where a third spot sample is produced and all three given for microscopy. The results of the sputum examination are available on the same day. When the patient is seen by the programme's medical doctor, diagnosed as TB and his treatment card is prepared, the TB health worker carries a copy of the treatment card and the necessary drugs to the village doctor. Each village doctor providing DOT is supplied with a plastic box for preserving the drugs properly and a pot to store drinking water to enable patients to swallow their medicines in the clinic. Patients visit their village doctor daily to take the drugs at a time of their own convenience, which is generally agreed upon mutually. If a patient fails to show up, the village doctor tries to make a home visit, enquires and gives drugs to the patient. If he or she defaults, the doctor reports it to the concerned TB health worker. If a patient gets any adverse drug reaction, the village doctor refers the patient back to the health centre for advice.

Village doctors and their activities are frequently supervised by relevant NGO staff during field visits and especially by respective TB health workers. The health worker makes at least three visits during the course of the treatment to each doctor who is supervising TB patients. At the time of supervision, TB health workers also make it a point to encourage village doctors and motivate them to keep up their work.

### **Scaling up**

The scaling up of village doctors' involvement in this rural PPM DOTS initiative of the Damien Foundation has been a smooth one. Beginning with training of over 700 village doctors from three of the four project areas in 1997, the project has seen a phased expansion and is an integral part of the Foundation's TB control programme. Currently, over 12,000 village doctors have been trained for contributing to DOTS implementation in a population of about 26 million. Village doctors contribute to both case finding by referring TB suspects and to case holding by undertaking DOT for diagnosed cases.

Village doctors referred around 4 000 TB suspects in the first project year itself, accounting for about 8% of all suspects examined under the project. By 2004, this number rose to around 11 000, amounting to 11% of the total suspects examined. The proportions of suspects referred by village doctors are not large as the Foundation has several other community mobilization activities that educate people with symptoms of TB to present themselves to the network of services offered by the Foundation. The sputum positivity

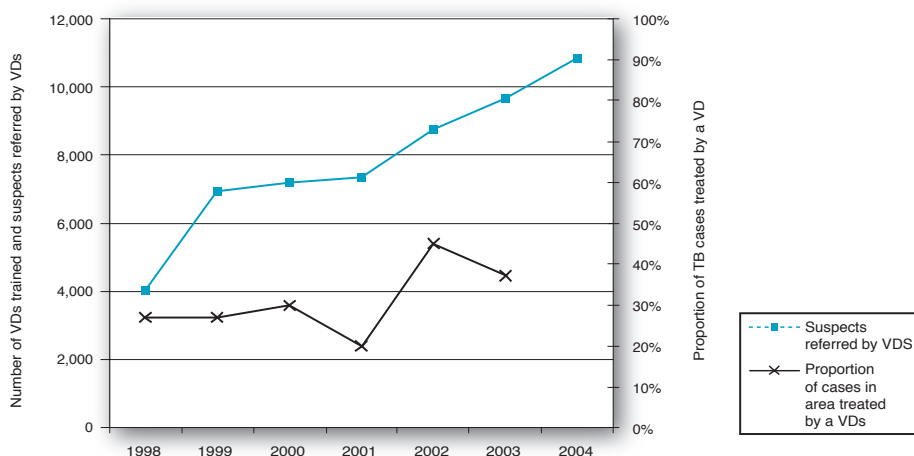
ratio among the patients referred by village doctors has been a little better than that among the suspects identified by the Foundation's project staff.

Even more impressive has been the contribution of village doctors to the provision of DOT. In 1998, soon after the beginning of the project, about a fifth of the TB patients were administered DOT by village doctors. By 2003, a little less than half of all patients – 45% – were receiving DOT from village doctors (Figure 6). Between 1998 and 2003, about 19 000 TB patients received DOT from village doctors with a treatment success rate of about 90%. The main purpose for which the involvement of village doctors was sought has been fulfilled (Salim et al 2006).

This first, well-documented, large-scale and sustainable village doctors' programme in Bangladesh shows that PPM DOTS is as much relevant and required in rural areas as it is in urban settings. It is noteworthy that the Damien Foundation has implemented and sustained this programme with minimum addition of dedicated staff for this specific purpose. The village doctor's supervision has been integrated into other supervisory activities of the programme staff. Some measure was indeed put in place to limit the burden of the supervisory work. When the number of participating village doctors increased substantially, they were all encouraged to refer suspects. But the number of doctors administering DOT was restricted. Applying a few criteria like location of the clinic, the facilities available in the clinic, willingness of the doctor to do DOT for all eligible patients in the neighbourhood (and not just his or her patients), etc., the DOT centres managed by village doctors were limited to a manageable number.

In addition, involvement of private not-for-profit and for-profit providers is being scaled up in urban areas in Bangladesh, notably in Dhaka. These initiatives are currently being evaluated.

**Figure 6.** Trends for number of village doctors trained and proportion of patients in the area who received treatment by a village doctor in Bangladesh.



(Source: Salim et al 2006)

**Annex 3** **GENERIC FORMAT FOR BUDGETING PPM DOTS PROJECTS**

The table below provides examples of activities and related budget lines and indicators that may be considered when budgeting for PPM.

Activity area	Examples of budget items	Examples of indicators
<p><b>1: Preparations for PPM</b></p> <p><b>Activity 1A:</b> Establish national PPM DOTS infrastructure</p> <p><b>Activity 1B:</b> Conduct national situation analysis</p> <p><b>Activity 1C:</b> Develop national operational guidelines</p>	<ul style="list-style-type: none"> <li>• Salary for national (and provincial) PPM focal points</li> <li>• Staff time for situation analysis and guideline development</li> <li>• Cost of PPM task force activities</li> <li>• Consultative meetings with stakeholders</li> <li>• Workshops to disseminate guidelines</li> <li>• Staff time and meeting costs for developing scale-up plan</li> <li>• External technical assistance</li> </ul>	<ul style="list-style-type: none"> <li>• Appointed a PPM focal point (Y/N, date)</li> <li>• Creation of task force (Y/N, date)</li> <li>• Situation analysis done (Y/N, date)</li> <li>• Operational guideline printed and disseminated (Y/N, date)</li> </ul>
<p><b>2: Training for PPM</b></p> <p><b>Activity 2A:</b> Training of NTP staff on PPM DOTS</p> <p><b>Activity 2B:</b> Sensitization, training, certification</p>	<ul style="list-style-type: none"> <li>• Salary for trainers</li> <li>• Training material</li> <li>• Meeting venue costs</li> <li>• Per diem</li> <li>• Transport</li> </ul>	<ul style="list-style-type: none"> <li>• Number of training sessions</li> <li>• Number of health care facilities trained/certified, by type of provider and DOTS function</li> <li>• Number of health care cadres trained, by type of health care staff</li> <li>• Number of supervision visits, by supervised type of provider</li> </ul>
<p><b>3: Demand creation (Advocacy and Communication) for PPM</b></p> <p><b>Activity 3A:</b> Inform all relevant health care providers and other stakeholders about DOTS and PPM</p> <p><b>Activity 3B:</b> Inform TB suspects and patients on PPM DOTS and treatment options</p> <p><b>Activity 3C:</b> Inform the general population about TB, DOTS and PPM DOTS</p>	<ul style="list-style-type: none"> <li>• Information material / posters</li> <li>• Meetings and seminars</li> <li>• Media campaigns</li> </ul>	<ul style="list-style-type: none"> <li>• Number of information events / material targeting providers</li> <li>• Number of information events / material targeting patients</li> <li>• Number of information events / material targeting population</li> </ul>

<p><b>4. Local delivery of TB services through PPM</b>  <b>Activity 4A:</b>          Establish local service delivery infrastructure  <b>Activity 4B:</b>          Delivery of DOTS services by partnering providers</p>	<ul style="list-style-type: none"> <li>• Staff time for local mapping and situation analysis</li> <li>• Local consultative meetings</li> <li>• Staff time for supervision and monitoring</li> <li>• Vehicle for supervision</li> <li>• Printing of forms and registers</li> <li>• Cost of incremental drugs</li> <li>• Cost of incremental lab supplies</li> </ul>	<ul style="list-style-type: none"> <li>• Number (%) of districts / cities / provinces with PPM initiative</li> <li>• Mapping done (Y/N, date)</li> <li>• Local task force created (Y/N, date)</li> <li>• Proportion of cases detected through referral/ diagnosis by different providers</li> <li>• Proportion of patients receiving DOT by different providers</li> <li>• Treatment outcome, by provider type</li> </ul>
<p><b>5. Monitoring and evaluation</b>  <b>Activity 5A:</b>          Ensure appropriate recording and reporting routines  <b>Activity 5B:</b>          Design and implement operation research projects</p>	<ul style="list-style-type: none"> <li>• Research capacity building</li> <li>• External technical assistance</li> <li>• Staff time for evaluation</li> <li>• Funds to contract out operational research</li> </ul>	<ul style="list-style-type: none"> <li>• Number of staff trained on operational research</li> <li>• Evaluation of pilot(s) completed and disseminated (Y/N)</li> </ul>

## SUGGESTED FORMATS FOR ANNUAL REPORT OF PROVIDER INVOLVEMENT AND CONTRIBUTION BY DIFFERENT PROVIDERS TO CASE DETECTION AND TREATMENT, DISTRICT OR NATIONAL LEVEL

### a) Provider involvement in TB control

Provider category	Total number of health facilities in the district*	Of which involved in DOTS**		Of which have laboratory facilities for sputum smear microscopy	
		Target cumulative number to involve***	Cumulative number actually involved	Target cumulative number to involve***	Cumulative number actually involved
Public primary health care units					
Public hospitals					
Medical colleges					
For-profit private hospitals					
For-profit private clinics					
NGO (not-for-profit) hospitals					
NGO (not-for-profit) clinics					
Others****					

\* Known number of existing facilities in the district/basic management unit. The number should include both facilities that are involved in DOTS implementation and those that are not involved. Information may be available from official data/health information system or may be collected through a provider mapping/survey.

\*\* Facilities involved in any of the following DOTS functions: formally referring TB suspects/cases, laboratory facility for sputum smear and/or culture, diagnosis and categorization of TB, DOT.

\*\*\* The cumulative number of facilities that was planned to be involved at the end of the year of the report.

\*\*\*\* Other categories may include corporate health care facilities, prison health service, army health facility, pharmacies, traditional healers, etc. The table may be adapted with more rows to incorporate facilities that are relevant for the country.

**b) Contribution by different providers to case detection and treatment**

TOTAL →	Total of new SS+ cases diagnosed in year*				Total of new SS+ started on treatment under DOTS in year**	
	Referral <sup>£</sup>		Diagnosis <sup>§</sup>		Treatment <sup>^</sup>	
Provider Category	No.	%	No.	%	No.	%
Self-referred to diagnostic unit						
Public hospitals						
Medical colleges						
For-profit private hospitals						
For-profit private clinics						
NGO (not-for-profit) hospitals						
NGO (not-for-profit) clinics						
Others						
Unknown						
<b>Total</b>		<b>100%</b>		<b>100%</b>		<b>100%</b>

\* Total number of new SS+ patients diagnosed and recorded in TB lab register (“TB 04”, see TB Handbook) in all laboratories involved in DOTS in the district (or equivalent administrative unit). Total number should equal the sum of the column for “referred by”. It should also equal the sum of the column for “diagnosed by”.

\*\* Total number of new SS+ patients registered in the TB register (“TB 03”, see TB Handbook) and started on treatment under DOTS. Total number should equal the sum of the column for “case management by”.

# Provider categories are indicative and should be adapted to local context.

£ New SS+ cases referred by provider category, as recorded in the column for “treatment unit” in laboratory registers in district.

§ New SS+ cases registered in the laboratory registers of units with microscopy services belonging to respective provider category.

^ New SS+ cases registered under DOTS by provider category, as recorded in the column for treatment unit in the TB register.

**Annex 5 REFERENCES AND RESOURCE MATERIAL****WHO documents on PPM DOTS**

WHO: Public-Private Mix for DOTS. Towards Scaling Up. Report of the Third Meeting of the PPM Subgroup for DOTS Expansion. WHO/HTM/TB/2005.356. Geneva: World Health Organization, 2005.

WHO. Public-Public Mix for DOTS in China - Enhancing the contribution of public hospitals to TB control. Mission Report. Geneva: World Health Organization, HTM/STB/TBS, 2004.

WHO. Cost and cost-effectiveness of Public-Private Mix DOTS: Evidence from two pilot projects in India WHO/HTM/TB/2004.337. Geneva: World Health Organization, 2004

WHO: Public-Private Mix for DOTS. Global progress. Report of the Second Meeting of the PPM Subgroup for DOTS Expansion. WHO/HTM/TB/2004.338. Geneva: World Health Organization, 2004.

WHO. Public-Private Mix for DOTS - Practical tools to help implementation. WHO/CDS/TB/2003.325. Geneva: World Health Organization, 2003.

WHO. Public-Private Mix for DOTS in Indonesia - A strategy for action. WHO/CDS/TB/2003.326. Geneva: World Health Organization, 2003.

WHO. First meeting of the Public-Private Mix Subgroup for DOTS Expansion. WHO/CDS/TB/2003.317. Geneva: World Health Organization, 2002.

WHO. Involving Private Practitioners in Tuberculosis Control: Issues, interventions and emerging policy framework. WHO/CDS/TB/2001.285. Geneva: World Health Organization, 2001.

**Examples of national PPM DOTS policy documents**

DoH and PhilCAT. Operational Guidelines for Public-Private Mix DOTS in the Philippines. Manila: Department of Health and Philippines Coalition Against Tuberculosis, 2004.

Ministry of Health and Family Welfare. Involvement of Non-governmental Organizations in the Revised National Tuberculosis Control Programme. New Delhi: Central TB Division, Ministry of Health and Family Welfare, 2001.

Ministry of Health and Family Welfare. Involvement of Private Practitioners in the Revised National Tuberculosis Control Programme. New Delhi: Central TB Division, Ministry of Health and Family Welfare, 2002.

National TB Programme, Myanmar. Guidelines for involvement of private practitioners in National Tuberculosis Programme, Myanmar. Yangon: Ministry of Health, Department of Health, 2003

**TB guidelines and training material**

Tuberculosis Coalition for Technical Assistance. International standards for TB care (ISTC). The Hague: Tuberculosis Coalition for Technical Assistance, 2006.

Caminero JA. A Tuberculosis Guide for Specialist Physicians. Paris: International Union Against Tuberculosis and Lung Disease, 2005.

Central TB Division. Training module for medical practitioners. New Delhi: Central TB Division, Ministry of Health and Family Welfare, Government of India, 2005.



WHO. Management of TB: Training for district coordinators. WHO/HTM/TB/2005.347a-n. Geneva: World Health Organization, 2005.

WHO. Guidelines for the management of drug-resistant tuberculosis. WHO/HTM/THD.2005. Geneva: World Health Organization, 2005.

WHO. Management of TB/HIV Collaborative Activities: Training for managers at national and sub-national levels. WHO/HTM/TB.2005. Geneva: World Health Organization, 2005.

WHO. Toman's tuberculosis. Case detection, treatment and monitoring: questions and answers (2nd edition). WHO/HTM/TB/2004.334. Geneva: World Health Organization, 2004.

WHO. Interim policy on collaborative TB/HIV activities. WHO/HTM/TB/2004.330. Geneva: World Health Organization, 2004.

WHO. Management of TB: Training for health facility staff. WHO/CDS/TB 2003.314a-j. Geneva: World Health Organization, 2003.

WHO. Treatment of tuberculosis: guidelines for national programmes - third edition. WHO/CDS/TB/2003.313. Geneva: World Health Organization, 2003.

WHO. Tuberculosis Handbook. WHO/TB/98.253. Geneva: World Health Organization, 1998.

## PPM DOTS project evaluations

Ambe G, Lönnroth K, Dholakia Y, Copreaux J, Zignol M, Borremans N, Uplekar M. Every provider counts!: Effects of a comprehensive public-private mix approach for TB control in a large metropolitan area in India. *International Journal of TB and Lung Diseases*, 2005; 9: 562-68.

Arora VK, Sarin R, Lönnroth K. Feasibility and effectiveness of a public-private mix project for improved TB control in Delhi, India. *International Journal of Tuberculosis and Lung Diseases*, 2003; 7: 1131-8.

Arora V, Sarin R, Lönnroth K. PPM for improved TB control in Delhi – Evaluation of the involvement of private providers in the Revised National TB Control Programme in Delhi, India. New Delhi: LRS Institute for TB and Allied Diseases & STB/WHO; 2002.

Arora VK, Lönnroth K, Sarin R. Improving case detection of tuberculosis through a public-private partnership. *Indian J Chest Diseses and Allied Sciences*. 2004; 46: 133-36.

Centre for Health Research and Development. The Pune Public-Private Mix Project. Pune: CHRDR and Maharashtra Association of Anthropological Sciences; 2002.

Copreaux J, Dholakia YN. Tuberculosis control - Involvement of private medical sector, one-to-one approach: Mumbai experience. Mumbai: Inter Aide, UCITC, 2003.

Dewan P. An evaluation of a public-private sector collaboration to improve tuberculosis case detection and treatment, Kannur district, Kerala, India, 2001-2002. Report to Central TB Division, Government of India. Atlanta: Center for Disease Control (in collaboration with Stop TB Division, WHO/SEARO), 2003.

Dewan P, Lal S, Lönnroth K et al. Improving Tuberculosis Control through Public-Private Collaboration in India: Literature review BMJ 2006 (in press).

Floyd K, Arora VK, Murthy KJR et al. Cost and cost-effectiveness of PPM DOTS for Tuberculosis Control: evidence from India. *Bulletin of the World Health Organization*, 2006 (in press).

Hurtig AK, Pande SB, Baral SC, Newell J, Porter JD, Bam DS. Linking private and public sectors in tuberculosis treatment in Kathmandu Valley, Nepal. *Health Policy and Planning* 2002; 17: 78-89.

Kumar MK, Dewan PK, Nair PK, Frieden TR, Sahu S, Wares F, Laserson K, Wells C, Granich R, Chauhan LS. Improved tuberculosis case detection through public-private partnership and laboratory-based surveillance, Kannur District, Kerala, India, 2001-2002. *Int J Tuberc Lung Dis.* 2005; 9: 870-6.

Lönnroth K, Uplekar M, Arora VK, Juvekar S, Lan NTN, Mvaniki D, Pathania V. Public-Private Mix for Improved TB Control – What makes it work? *Bulletin of the World Health Organization*, 2004; 82: 580-86.

Lönnroth K, Karlsson M, Lan NT, Buu TN, Dieu TT. Referring TB suspects from private pharmacies to the National Tuberculosis Programme: Experiences from two districts in Ho Chi Minh City, Vietnam. *Int J Tuberc Lung Dis* 2003; 7: 1147-53.

Murthy KJ, Frieden TR, Yazdani A, Hreshikesh P. Public-private partnership in tuberculosis control: experience in Hyderabad, India. *Int J Tuberc Lung Dis.* 2001; 5: 354-9.

Mwaniki DL, Kariuki JN, Kamigwi AG, Gathua S, Pathania V, Kutwa A. Investigation towards a strengthened public-private partnership for tuberculosis control in Kenya – the Nairobi case study. Nairobi: KEMRI, KAPTLD, NLTP/MoH, STB/WHO; 2002.

National Tuberculosis Programme, Egypt. Tuberculosis Services in Partnership, The Case of Egypt. WHO-EM/TUB/243/E. Cairo: World Health Organization, 2004.

Newell JN, Pande SB, Baral C, Bam DS, Malla P. Control of tuberculosis in an urban setting in Nepal: public-private partnership. *Bulletin of the World Health Organization*, 2004; 82: 92-98

Newell JN, Pande SB, Baral SC, Bam DS, Malla P. Leadership, management and technical lessons learnt from a successful public-private partnership for TB control in Nepal. *Int J Tuberc Lung Dis* 2005; 9; 1013-17.

Quelapio ID, Mira NRC, Abelada MR. Directly Observed Therapy - Short-course (DOTS) at the Makati Medical Center. *The Philippine Journal of Microbiology and Infectious Diseases*, 2000; 29: 80-86.

Quy HT, Lan NTN, Buu TN, Hai LT, Dieu TTN, Murthy KJR et al. Evaluation of a new model for public-private collaboration for improved TB control in Ho Chi Minh City, Vietnam. Ho Chi Minh City: PNT TB and Lung Disease Center & STB/WHO; 2002.

Quy HT, Lan NT, Lönnroth K, Buu TN, Dieu TTN, Hai LT. Public-private mix for improved TB control in Ho Chi Minh City, Vietnam: an assessment of impact on case detection. *International Journal of Tuberculosis and Lung Diseases* 2003; 7: 464-71.

Quy HT, Lönnroth K, Lan NTN, Buu TN, Dieu TTN. Treatment results among patients treated by private lung specialists involved in a public-private mix project in Ho Chi Minh City, Vietnam. *International Journal of Tuberculosis and Lung Diseases* 2003; 7: 1139-46.

Rangan S, Juvekar S, Rasalpurkar S, Morankar S, Joshi A, Porter J. Tuberculosis control in rural India: lessons from public-private collaboration. *Int J Tuberc Lung Dis.* 2004; 8: 552-9.

Salim AH, Uplekar M, Daru P, Aung M, Declercq E, Lönnroth K. Turning liabilities into resources: the informal village doctors and TB control in Bangladesh. *Bulletin of WHO*, 2006 (in press).

Voskens J, Prihatini S, Wuryaningtyas B. Evaluation of the hospital DOTS linkage project in DI Yogyakarta. PERSI, MoH, KNCV, UAB/Gorgas and WHO, 2003.

WHO. External evaluation of Public-Private Mix DOTS supported by the GFATM in Philippines, 17-21 January 2005. Manila: World Health Organization, Western Pacific Office, 2005.

Zaw W, Sein W, Aung, TN et al. Case load and treatment outcome of pulmonary tuberculosis patients with DOTS strategy implemented by general practitioners in Shwepyitha township. Myanmar Medical Journal, 1999; 43: 8-12.

### Other selected literature on TB and private health care

Aguilar R, Garay J, Villatoro M, Billo NE, Caminero JA. Impact of a model training course for private and public specialist physicians in El Salvador. *Int J Tuberc Lung Dis*. 2004; 8: 473-9.

Arbelaez MP, Gaviria MB, Franco A, Restrepo R, Hincapie D, Blas E. Tuberculosis control and managed competition in Colombia. *Int J Health Plann Manage*. 2004; 19: S25-43

Arif K, Ali SA, Amanullah S, Siddiqui I, Khan JA, Nayani P. Physician compliance with national tuberculosis treatment guidelines: a university hospital study. *Int J Tuberc Lung Dis* 1997; 2: 225-30.

Brugha R, Zwi AB. Tuberculosis treatment in the public and private sectors – potential for collaboration. In: Porter JDH, Grange JM. (eds). *Tuberculosis - An Interdisciplinary perspective*. London: Imperial College Press, 1999.

Caminero JA. Is the DOTS strategy sufficient to achieve tuberculosis control in low- and middle-income countries? 2. Need for interventions among private physicians, medical specialists and scientific societies. *Int J Tuberc Lung Dis*. 2003; 7: 623-30.

Grover NK. Role of private practitioners in tuberculosis control in India. *Journal of the Indian Medical Association*, 1996; 94: 370-71.

Hong Kong Chest Service/British Medical Research Council. Survey of the previous investigation and treatment by private practitioners of patients with pulmonary tuberculosis attending government chest clinics in Hong Kong. *Tubercle* 1984; 65: 161-171.

Hong YP, Kwon DW, Kim SC et al. Survey of knowledge, attitudes and practices for tuberculosis among general practitioners. *Tubercle and Lung Disease* 1995; 76: 431-35.

Hong YP, Kim SJ, Lee EG, Lew WJ, Bai JY. Treatment of bacillary pulmonary tuberculosis at the chest clinics in the private sector in Korea, 1993. *Int J Tuberc Lung Dis* 1999; 3: 695-702.

Huebner RE, Moeti N, Binkin NJ, Rumisha DW. Survey of physician use of radiography and sputum smear microscopy for tuberculosis diagnosis and follow up in Botswana. *Int J Tuberc Lung Dis* 1997; 1: 333-8.

Hurtig AK, Pande SB, Baral SC, Porter JD, Bam DS. Sputum examination for acid-fast bacilli in private laboratories, Kathmandu Valley, Nepal. *Int J Tuberc Lung Dis* 1999; 3: 1009-14.

Hurtig AK, Pande SB, Baral SC, Porter JD, Bam DS. Anti-tuberculosis treatment in private pharmacies, Kathmandu Valley, Nepal. *Int J Tuberc Lung Dis* 2000; 4: 730-6.

Jaramillo E. Pulmonary tuberculosis and health-seeking behaviour: how to get a delayed diagnosis in Cali, Colombia. *Tropical Medicine and International Health* 1998; 3: 138-44.

Khan J, Malik A, Hussain H, Ali NK, Akbani F, Hussain SJ, Kazi GN, Hussain SF. Tuberculosis diagnosis and treatment practices of private physicians in Karachi, Pakistan. *East Mediterr Health J*. 2003; 9: 769-75.

Lambert ML, Delgado R, Michaux G, Volz A, Van der Stuyft P. Tuberculosis control and the private health sector in Bolivia: a survey of pharmacies. *Int J Tuberc Lung Dis.* 2004; 8: 1325-9.

Lambert ML, Delgado R, Michaux G, Vols A, Speybroeck N, Van der Stuyft P. Collaboration between private pharmacies and national tuberculosis programme: an intervention in Bolivia. *Trop Med Int Health.* 2005;10: 246-50.

Lönnroth K, Thuong LM, Linh PD, and Diwan V. Risks and benefits of private health care - exploring physicians' views on private health care in Ho Chi Minh City. *Health Policy* 1998;45:81-97

Lönnroth K, Thuong LM, Linh PD, and Diwan V. Delay and discontinuity - A survey of TB patients' search of a diagnosis in a diversified health care system. *International Journal of Tuberculosis and Lung Disease*, 1999; 3: 992-1000.

Lönnroth K, Thuong LM, Linh PD, and Diwan V. Utilisation of private and public health care providers among people with symptoms of tuberculosis in Ho Chi Minh City, Vietnam. *Health Policy and Planning* 2001; 16: 47-54.

Lönnroth K, Tran TU, Thuong LM and Diwan V. Can I afford free treatment?: Perceived consequences of health care provider choices among people with tuberculosis in Ho Chi Minh City, Vietnam. *Social Science and Medicine* 2001; 52: 935-948.

Lönnroth K, Lambregts K, Nhien T, Quy HT, Diwan VK. Private pharmacies and TB control – a survey of case detection skills and reported anti-TB drug dispensing in private pharmacies in Ho Chi Minh City, Vietnam. *Int J Tuberc Lung Dis* 2000; 4: 1052-59.

Lönnroth K, Thuong LM, Lambregts K, Quy HT, Diwan VK. Private tuberculosis care provision associated with poor treatment outcome – a comparative cohort analysis of a semi-private chest clinic and the national tuberculosis control programme in Ho Chi Minh City, Vietnam. *Int J Tuberc Lung Dis* 2003; 7: 165-71.

Lönnroth K. Public Health in Private Hands – Studies on private and public tuberculosis case in Ho Chi Minh City, Vietnam (Academic thesis). Göteborg: Göteborg University, 2000.

Macq J, Solis A, Ibarra M, Martiny P, Dujardin B. The cost of medical care and people's health-seeking behaviour before being suspected of tuberculosis in three local health systems, Nicaragua. *Int J Tuberc Lung Dis.* 2004; 8: 1330-6.

Mandal PP, Bhatia V. Involvement of private practitioners in RNTCP. *J Indian Med Assoc.* 2003 Mar; 101:159-60.

Mantala MJ. Public-private mix DOTS in the Philippines. *Tuberculosis.* 2003; 83:173-6.

Montagu D, Elzinga G. Innovations in access to TB and HIV/AIDS care in sub-Saharan Africa: dynamic engagement of the private sector. *Appl Health Econ Health Policy.* 2003; 2: 175-80.

Netterop E, Wolffers I. The role of the privatisation process on tuberculosis control in Ho Chi Minh City, Vietnam. *Soc Sci Med* 1999; 48: 1589-98.

Olle-Goig JE, Cullity JE, Vargas R. A survey of prescribing patterns for tuberculosis treatment amongst doctors in a Bolivian city. *Int J Tuberc Lung Dis* 1999; 3: 74-8.

Pathania V, Almeida J, Kochi A. TB patients and private for-profit health care providers in India. Geneva: World Health Organization, 1997.

Portero JL, Rubio M. Private practitioners and tuberculosis control in the Philippines: strangers when they meet? *Trop Med Int Health.* 2003; 8: 329-35.

Rangan S, Iyer A, Jhaveri S. Nongovernmental organisations in tuberculosis control in western India. Mumbai: The Foundation for Research in Community Health, 1995.

Ramana GNV, Naidu BMCS, Murthy KJR. Mapping of TB treatment providers at selected sites in Andhra Pradesh, India. Geneva: World Health Organization, 1997.

Rangan S. The public-private mix in India's Revised National Tuberculosis Control Programme – an update. *J Indian Med Assoc.* 2003;101: 161-3.

Shah SK, Sadiq H, Khalil M, Noor A, Rasheed G, Shah SM, Ahmad N. Do private doctors follow national guidelines for managing pulmonary tuberculosis in Pakistan? *East Mediterr Health J.* 2003; 9: 776-88.

Shirzadi MR, Majdzadeh R, Pourmalek F, Naraghi K. Adherence of the private sector to national tuberculosis guidelines in the Islamic Republic of Iran, 2001-02. *East Mediterr Health J.* 2003; 9: 796-804.

Singla N, Sharma PP, Singla R, Jain RC. Survey of knowledge attitudes and practice for tuberculosis among general practitioners in Delhi, India. *Int J Tuberc Lung Dis* 1998; 2: 384-89.

Suleiman BA, Houssein AI, Mehta F, Hinderaker SG. Do doctors in north-western Somalia follow the national guidelines for tuberculosis management? *East Mediterr Health J.* 2003; 9: 789-95.

Ullah AN, Lubben M, Newell JN. A model for effective involvement of private medical practitioners in TB care. *Int J Health Plann Manage.* 2004;19 :227-45.

Uplekar MW, Shepard DS. Treatment of tuberculosis by private general practitioners in India. *Tubercle* 1991; 72: 284-290.

Uplekar MW, Rangan S. Private doctors and tuberculosis control in India. *Tubercle.* 1993; 74: 332-337.

Uplekar M, Juvenkar S, Morankar S. Tuberculosis patients and practitioners in private clinics. Mumbai: The Foundation for Research in Community Health, 1996.

Uplekar M, Juvenkar SD, Parande DB, Dalal et al. Tuberculosis management in private practice and its implications. *Indian Journal of Tuberculosis*, 1996; 43: 19-22.

Uplekar M, Rangan S. Tackling TB - the search for solutions. Mumbai: The Foundation for Research in Community Health, 1996.

Uplekar M, Juvenkar S, Morankar S, Rangan S, Nunn P. Tuberculosis patients and practitioners in private clinics in India. *Int J Tuberc Lung Dis* 1998; 2: 324-329.

Uplekar M. Involving the private medical sector in tuberculosis control: practical aspects. In: Porter JDH, Grange JM. (eds). *Tuberculosis - An interdisciplinary perspective*. London: Imperial College Press, 1999.

Uplekar M, Pathania V, Raviglione M. Private practitioners and public health: weak links in tuberculosis control. *Lancet.* 2001; 15 358: 912-6.

Uplekar M. Involving private health care providers in delivery of TB care: global strategy. *Tuberculosis.* 2003; 83:156-64.

Uplekar M. Public-private mix for DOTS: demanding, but delay will only hamper TB control. *Int J Tuberc Lung Dis.* 2003 Dec; 7: 1113-4.



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