The role of private health sector engagement in TB control in India

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CHAPTER 4*

Intensified Scale-Up of Public-Private Mix: A Systems Approach to Tuberculosis Care and Control in India

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4.1 Introduction

In general, public health interventions are planned and designed by the public health sector. On the ground, however, significant numbers of patients seek care from a variety of care providers that are often alienated from organized public health programmes[62]. To address the non-involvement of different care providers, who are a thriving part of many health systems, the World Health Organization's (WHO's) Stop TB Strategy has made 'engaging all care providers' an essential component of global tuberculosis (TB) control[101], using the public-private mix (PPM) approach. PPM entails a public sector programme taking the leadership and providing support to facilitate systematic involvement of non-programme providers in TB control. The multiplicity of care providers is nowhere as starkly obvious as in India, where a plethora of different types of providers operate in large, parallel health care sectors (Table 1).

A fifth of the global burden of incident TB cases occur in India; in 2007, there were an estimated 3.3 million prevalent TB cases, almost 2 million new cases and around 330 000 deaths due to TB[102]. Conscious of the ground realities, the Government of India's Revised National Tuberculosis Control Programme (RNTCP), along with phased DOTS expansion, set up several PPM projects across the country. Private providers contributed on average 16% of cases, with a treatment success rate of 86%[103]. The cost-effectiveness of such PPM initiatives has been demonstrated[79,81]. To help scale-up PPM, the RNTCP developed national schemes to suit the capacity of

different providers to contribute and that of the RNTCP to support them[93].

The RNTCP adopted a systems approach for phased scale-up of PPM activities that incorporated 1) local mapping of all care providers in a systematic manner; 2) prioritization of providers most likely to contribute to TB case notification and treatment; 3) agreement on the provider-specific task-mix; 4) setting up of a surveillance system to measure the contribution of the different providers; and 5) implementation and evaluation of the results of collaboration prior to further expansion.

The objectives of PPM scale-up were to study the extent and nature of participation by the different health care provider categories and its effect on case notification and treatment success rates. This paper describes the processes and outcomes of this systems approach for PPM scale-up in 14 major Indian cities.

4.2 Methods

The intervention

The Central TB Division (CTD), the head office of the RNTCP within the Ministry of Health and Family Welfare, launched the intensified PPM scale-up project in 14 major urban districts* from July to September 2003, covering a total population of about 50 million (ranging from 600 000 to 6 million per city). The same national

* Ahmedabad, Bangalore, Bhopal, Bhubaneswar, Chandigarh, Chennai, Delhi, Jaipur, Kolkata, Lucknow, Patna, Pune, Ranchi and Thiruvananthapuram. With the exception of Pune in Maharashtra, these are the capital cities of the respective major states in India.

schemes for engagement with different providers were applied in these 14 cities as in the rest of the country. Additional human resources were provided in the form of one dedicated PPM medical consultant and two peripheral field supervisors per city, whose tasks were to assist the district programme managers by advocating for PPM, conducting situational analysis with mapping of the health care providers, developing action plans, facilitating reporting, sensitising and training providers, supervising and monitoring the activities and sending monthly progress reports to the CTD.

Local action was backed by the advocacy activities of the CTD, which also started collaborative activities with the Indian Medical Association (IMA). A concise version of the RNTCP training module and an advocacy kit were developed for private medical practitioners. CTD then formally communicated with those non-Ministry of Health public sector agencies that had health care facilities. To facilitate the involvement of medical colleges, task forces were established at national and state level. The CTD, assisted by the WHO Country Office TB team, conducted regular meetings with the PPM consultants, organised training, undertook monitoring and frequent supervisory visits, and planned the evaluation. The roles and responsibilities to be assumed by the public and private health care providers were clearly identified and differentiated. Training, supervision, provision of quality-assured free drugs, supplies and honoraria, tracing of treatment defaulters and notification of TB cases remained the responsibility of the RNTCP, while referral, diagnosis,

treatment of TB cases as per RNTCP policy, and providing information to the public sector about TB patients and treatment interruption were responsibilities assigned to the non-public health services that became involved with PPM[93,104]. Unique features of this intervention were the existence of national policy and broad guidelines, availability of training materials and focused advocacy and dialogue [93,104-106]. Although no monetary incentives were given to the providers, they received increased social recognition and credibility due to improved documented treatment success of their patients.

4.2.1 PPM surveillance system

To monitor the contributions of the different providers to key TB control indicators in the 14 cities, the RNTCP developed a PPM-focused surveillance system. Providers were grouped into six categories, each of which was assigned a code (Table 1). In addition to certain process indicators (Table 2), the system was designed to measure the extent of contributions to referral of TB suspects, TB diagnosis, notification of new smear-positive pulmonary TB (PTB) cases, treatment support, and treatment outcomes.

Table 1.

Coding of different provider categories in PPM-focused surveillance system

Code	Description
H	State-level public sector health facilities (under the health department of the respective state governments, e.g., hospitals, health centres, dispensaries, etc.)
G	Public sector health facilities outside the purview of the state government department of health (ministries/departments under central government, e.g., railways, social insurance organization, etc.)
M	Medical college hospitals (under the medical education department: public and private medical colleges)
C	Corporate sector health facilities (health facilities attached to industries, factories, etc.)
P	Private health facilities (private-for-profit sector: individual practitioners or hospitals; practitioners of homeopathy and indigenous Indian systems of medicine and traditional healers; community volunteers engaged in supervision of treatment)
N	Voluntary NGOs (non-profit NGO sector: clinics, dispensaries, hospitals)

PPM = public-private mix; NGO = non-governmental organization.

The surveillance system used routine RNTCP recording and reporting formats with minor modifications to enable disaggregated data from the different provider categories to be captured. The laboratory request form for sputum examination was used for non-programme providers to refer TB suspects to the RNTCP. When the

TB suspect reported to a designated microscopy centre (DMC), the laboratory technician recorded the name of the referring provider on the laboratory form and the laboratory register. The RNTCP supervisors reviewed the laboratory register and treatment cards, and copied the appropriate provider code into the TB register to note the source of referral and place of treatment. Quarterly district reports were generated from the 14 cities.

4.3 Results

4.3.1 Extent of participation by different providers

Table 3 summarises the extent of involvement of the different provider categories. The majority of the H, G, M, and N sector facilities were involved in some activity (referral, diagnosis or treatment). The number of cases notified per staff member trained was much higher for H and M providers than for the other categories, and was lowest for G and P. Although 15 740 providers were listed, only a small proportion expressed interest in undergoing training after the sensitization efforts by the RNTCP.

4.3.2 Effect on overall case notification rate

In the 14 cities, case notification rates for new smear-positive (NSP) cases and all new cases increased from 52 to 58 and from 146 to 171 per 100 000 population, respectively. During the same period, in other cities of the country, the NSP case notification rate dropped slightly from 54 and returned to 54, while the notification rate for all

new cases dropped from 136 to 132/100 000. Trends from 1999 to June 2007 are shown in Figure 1

4.3.3 Contribution to case notification by different provider categories

The contribution of the different provider categories to notification of NSP cases from April 2004, when data first became available, is shown in Figure 2. Health department facilities contributed on average 67% of the NSP cases during this period, medical colleges 16%, private practitioners 6% and NGOs 7%, while other public providers and the corporate sector contributed only 3% and 1%, respectively. Assuming that one third of the cases from medical colleges were notified by private medical colleges, the private sector, including NGOs, contributed about 18% of all notified NSP cases.

Table 2.

PPM evaluation indicators

Output indicators

1. **Referral of TB suspects:**
   Contribution of the respective health care providers in referring TB suspects to RNTCP DMCs, as recorded in the laboratory registers.
2. **Diagnosis of all smear-positive PTB cases:**
   Contribution of the respective health care providers to overall smear-positive PTB case diagnosis, measured by counting the number of smear-positive PTB cases diagnosed in DMCs located at the health facilities of the respective health providers.
3. **New smear-positive PTB case notification:**
   Contribution (based on source of referral) of the respective health care providers to the notification (cases registered in the RNTCP) of new smear-positive PTB cases.
4. **DOT provision to TB patients:**
   Contribution of the respective health care providers to DOT among patients treated under the RNTCP, as ascertained from the TB treatment registers.
5. Treatment outcome disaggregated by the type of provider providing DOT.

Process indicators

1. **Provider sensitization:**
   Number of facilities listed, contacted and sensitized as a proportion of all providers listed.
2. **Training**:
   Number trained as proportion of providers listed.
3. **Involvement of different PPM facilities**:
   By formal or informal agreement, in various tasks such as referral, diagnosis (laboratory), treatment (DOT provision), and both (diagnosis + treatment).
4. **Supervision:**
   Number of supervisory visits made to PPM partner facilities or sites by type of supervisor and supervised facility.

PPM = public-private mix; TB = tuberculosis; RNTCP = Revised National Tuberculosis Control Programme; DMC = designated microscopy centers; PTB = pulmonary tuberculosis; DOT = directly observed treatment.

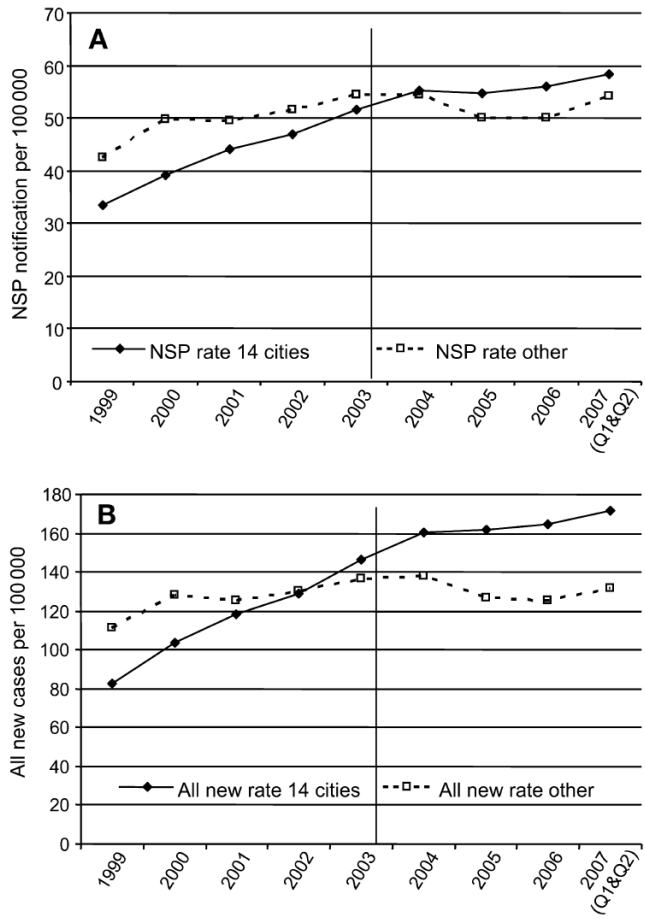
Table 3 Participation in RNTCP by the different provider categories

Provider*	Facilities listed† *n*	Staff trained‡ *n*	Involved in referral† %	Involved in diagnosis† %	Involved in treatment† %	NSP cases notified per year *n*	Cases all forms treated per year *n*	Yearly notification per no. trained
H	1611	2976	8	21	86	17042	55797	5.7
G	299	653	42	18	52	741	1254	1.1
M	85	759	24	48	59	4297	3644	5.7
C	54	49	35	13	9	135	373	2.8
P	15740	1426	25	0.4	14	1643	5626	1.2
N	782	1105	22	9	44	1811	8240	1.6

*See Table 1 for details.
†Not mutually exclusive for the role of referral, diagnosis and treatment.
‡Staff in the facilities who underwent training.
RNTCP = Revised National Tuberculosis Control Programme; NSP = new smear-positive pulmonary tuberculosis.

Figure 1

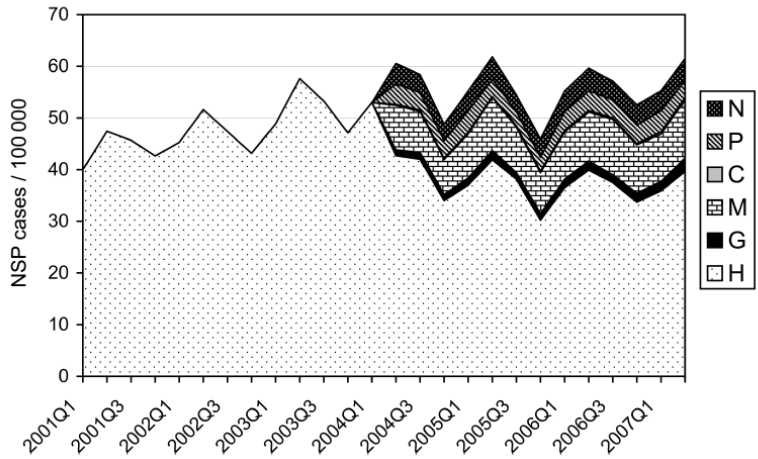
Trend in case notification rates of NSP (A) and all new cases (B) in the 14 cities with intensified PPM scale-up and in other areas.



The vertical line separates the periods before and after intensified PPM scale-up. Case notification/100 000 for 2007 annualized from quarter (Q) 1 and 2 data. NSP= New Smear Positive.

Figure 2.

Contribution by different provider categories (see Table 1 for details) to case notification in the 14 cities



NSP = new smear-positive

4.3.4 Inter-city differences

Substantial variations were observed in case notification trends and contributions by the different providers across the 14 cities. In Bangalore, for example, there was a continued increase due to gradually increasing contributions by medical colleges and some increase in contribution by private practitioners (Figure 3).

Some PPM sites achieved case notification rates that were above the national and state level figures. In the CTD records, certain common factors were identified in these sites, including strong RNTCP administration, evidenced by the district TB officer and other district and sub-district level key staff in place, adequate numbers of supervisory visits, appropriate use of resources and promptness in

reporting. Similarly, the administration took a proactive role in initiating steps such as inviting partners for meetings, sending communications requesting them to become involved with the RNTCP and sensitising their key staff. The involvement of large non-public health sector facilities, such as medical colleges, which cater to a significant percentage of the population, was also a common factor.

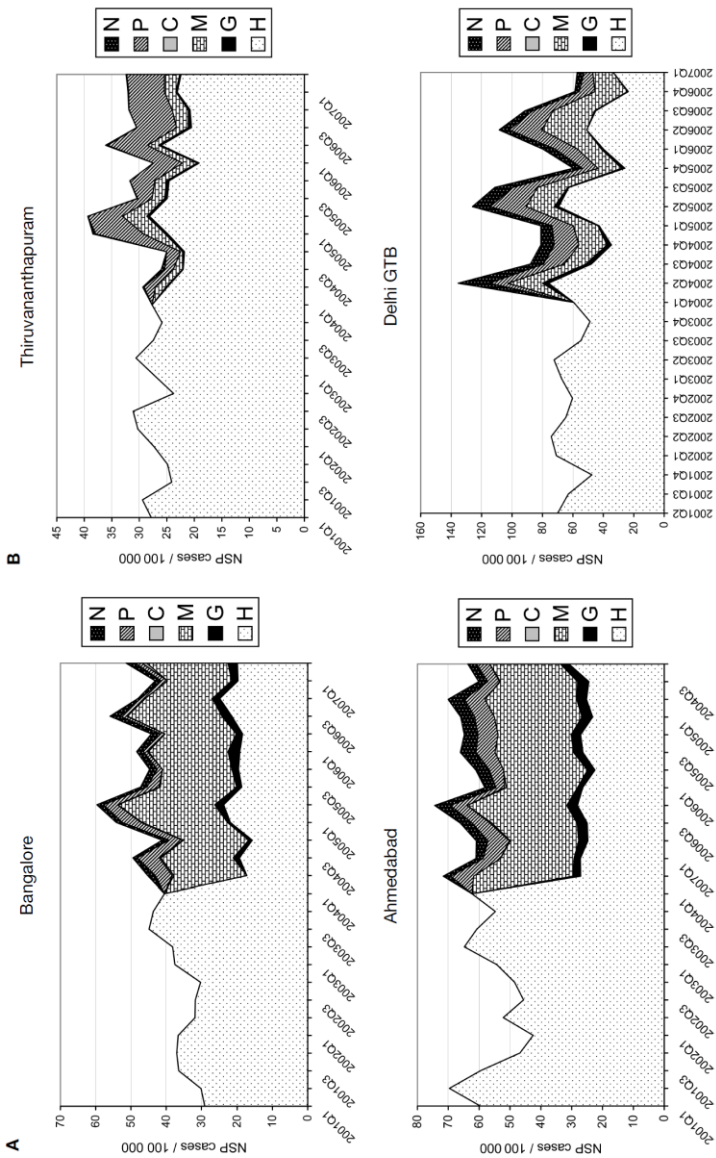
4.3.5 Task-specific contributions by providers

Contributions to referral, diagnosis, NSP case notification and treatment are shown in Figure 4. The H sector was the dominant contributor to all indicators. Medical colleges (M) were very active in identifying suspects and diagnosing patients, while they played only a minor role in treatment provision (4%).

4.3.6 Effect on treatment outcomes

Treatment outcomes for all cohorts combined from April 2004 to June 2007, disaggregated by treatment provider category, are summarised in Table 4. The treatment success rate was above the 85% target for all sectors combined, and individually for the H, P and N sectors. Analysis of treatment outcome trends showed that, except for the medical colleges and corporate sector, high cure rates were maintained throughout the intervention period. The cure rate in medical colleges declined from 86.5% in 2004 to 67.3% in 2006, due to a new RNTCP policy decision to register TB cases admitted to medical college hospitals in the local TB registers even if the patients were residents of other districts. This resulted in a higher percentage

of ‘transferred out’ patients. For the corporate sector, the number of cases was relatively small, and therefore a few ‘transferred out’ cases, as in the case of Ranchi, reduced the cure rate considerably.



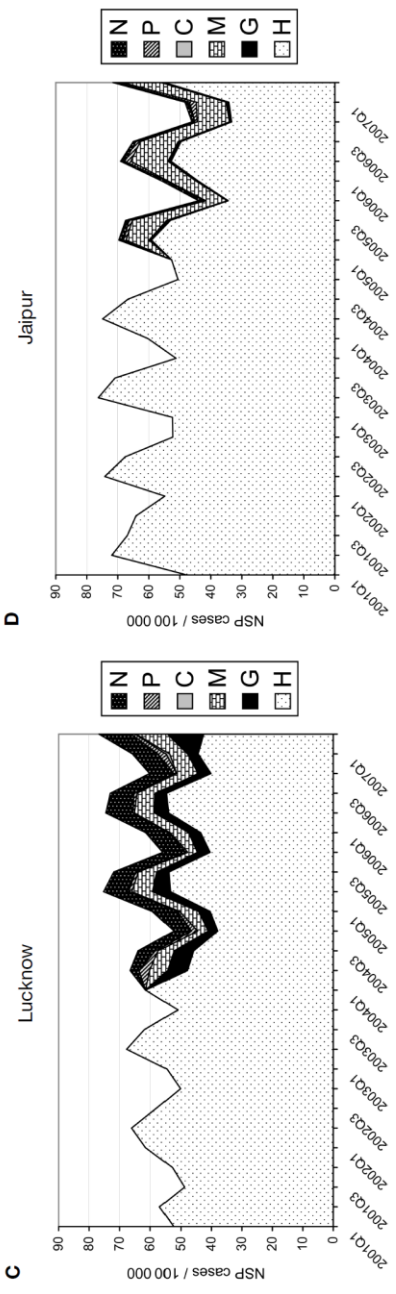
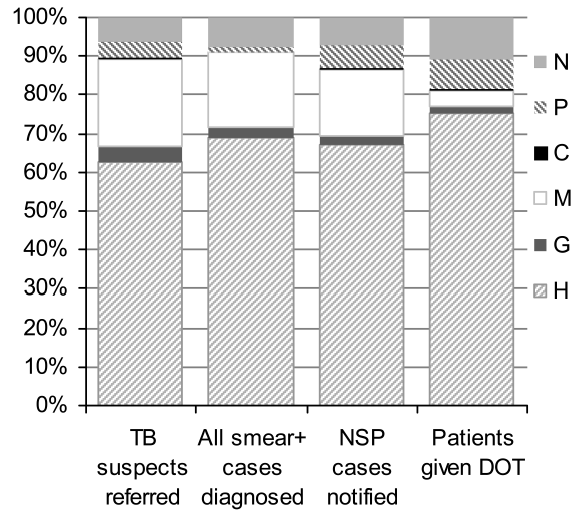


Figure 3 Variation in contributions to case notification by different providers across cities. Examples where substantial contributions were made by **A**) medical colleges, **B**) private providers and **C**) NGOs; and **D**) examples of very limited overall contribution and very small NGO and private sector contribution. NGO = non-governmental organisation.

Figure 4.

Contribution by the different providers to referral, diagnosis, NSP case notification and treatment, 2004–2007



TB = tuberculosis; DOT = directly observed treatment; NSP = new smear-positive

4.4 Discussion

It is evident that the systems approach to the phased scale-up of PPM activities—listing all care providers, sensitising a wide number with subsequent training of a selected group using standard training materials, and prioritising and engaging those who expressed an interest through appropriate schemes—was productive in the 14 cities. Overall, the intensified PPM initiative was associated with a 12% increase in notification of NSP cases in the 14 cities, with a high treatment success rate across all provider types. However, there were large variations between cities in relation to case notification trend,

and the different types of providers varied in their involvement with the RNTCP across the different settings. However, we acknowledge the fact that populations visiting the various types of providers may have different TB prevalence rates.

The public health sector remained the largest contributor to all indicators, and strong public-sector implementation was observed to be required for successful PPM activities in all sites. The finding that all providers who engaged in treatment provision had good treatment outcomes endorses the RNTCP policy of engaging RNTCP providers only if they can ensure directly observed treatment. As the medical colleges contributed a sizeable proportion of cases, the CTD focused on these and involved nearly all of them, particularly in the PPM sites. However, due to their large catchment areas and limited outreach capacity, medical colleges are less suitable for long-term ambulatory treatment. They have therefore been encouraged to send cases after diagnosis to other providers closer to the patients' place of residence.

Table 4 Treatment outcome for all cohorts combined from April 2004 to June 2007, disaggregated by treating provider category

	Registered *n*	% of all	Cure %	Treatment completion %	Died %	Failure %	Default %	Transfer %	Treatment success %
H	41384	77	85.2	0.8	3.3	2.7	6.9	1.0	86.0
G	735	1	82.7	1.4	2.7	3.1	8.0	2.0	84.1
M	2390	4	77.5	1.3	3.0	2.6	5.7	9.5	78.7
C	260	1	78.5	1.2	4.2	1.2	7.7	7.3	79.6
P	3649	7	86.6	1.7	3.8	2.5	4.7	0.7	88.3
N	5457	10	83.9	2.1	3.9	3.2	6.5	0.8	86.0
All	53875	100	84.8	1.0	3.4	2.7	6.7	1.4	85.8

The involvement of large numbers of small private providers (mostly single practitioners), each yielding a small number of cases, may not be as cost-effective as the involvement of large institutions such as medical colleges. However, the substantial contribution by private

providers in some of the 14 cities shows great potential, as these represent the majority of health providers in most parts of India[107]. As private providers are commonly the first contact for people with TB, their involvement is of particular importance to reduce diagnostic delay and save costs for patients[80]. The low proportion of listed private providers who were involved (25% in referral and 14% in treatment) was mainly due to the large number of private practitioners generally. Despite sensitisation efforts targeting large numbers of private practitioners, only a small proportion expressed willingness to attend systematic, formal training and to participate in RNTCP activities. A strong, proactive RNTCP administration and the presence of a sizeable non-public health sector are understood to be important factors for establishing collaboration and thus notify more TB cases in PPM sites. Weak regulation, resulting in a private drug market that pushes anti-tuberculosis drugs through private medical practitioners, variable standards of health care provision by the private sector, and a lack of mechanisms for the certification and accreditation of private practitioners, are identified barriers to PPM implementation. According to the consensus understanding of the CTD, even within the RNTCP, at the peripheral level, there was a lack of interest and experience in dealing with other sectors and a lack of faith in their capacity. Similarly, within the private sector, a lack of faith in the public sector health programmes and a low priority for public health programmes worked against wider implementation of PPM activities[73]. Anecdotal evidence suggests that lack of political will at the district level of RNTCP leadership, coupled with

reluctance from the private sector to collaborate for fear of losing patients, have been impediments to PPM. This aspect was not measured by the present study and there is scope for the RNTCP to explore it further. This study suggests that the decision as to whether and what type of providers should be engaged depends more on current delivery trends in a given location than on the type of provider. The proportion of TB notifications by provider appeared to be highly dependent on how predominant the type of provider was in the given city. At the same time, all types of providers were equally successful at treatment. This suggests that an important factor to consider while designing TB control programmes is where people currently receive care. This may be more important than other intrinsic provider characteristics. Systematic and continuous mapping of private providers by local health administrations would facilitate similar interventions for TB and even other diseases, and these results need to be shared with the broader health systems audience in addition to the narrower TB audience. The results and conclusions of this study could be instructive for other disease control programmes and interventions for health systems design generally.

4.5 Conclusion

The different types of health care providers varied in their importance and level of involvement with the RNTCP across the country. The systems approach adopted by the RNTCP in the 14 major cities led to a 12% increase in NSP case notification, with relatively good treatment success rates across all providers. Many challenges and

barriers remain to wide scale-up of PPM TB activities in India. The factors identified as leading to the success of the initiative have been used to inform the further development of RNTCP policy for the wider expansion of PPM TB activities across the country.

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