

## Impact of advocacy on the tuberculosis management practices of private practitioners in Chennai City, India

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### SUMMARY

**BACKGROUND:** Innovative schemes to ensure the participation of private practitioners (PPs) in the Revised National Tuberculosis Control Programme (RNTCP) are necessary to identify and treat all patients with tuberculosis (TB). We developed a novel public-private mix (PPM) model to encourage PPs to practise DOTS and participate in the RNTCP while retaining their patients.

**METHODS:** The Resource Group for Education and Advocacy for Community Health (REACH) developed and implemented the programme in partnership with the Chennai local health authority and the Tuberculosis Research Centre, Chennai, India. PPs were sensitised to the RNTCP and DOTS through a one-to-one approach or group meetings, and were assisted in referring patients. Surveys were carried out at baseline and at the comple-

tion of the study to assess changes in attitudes and practices.

**RESULTS:** Six hundred PPs underwent sensitisation about the RNTCP, after which the proportion of PPs adopting DOTS increased significantly ( $P < 0.001$ ), and the majority (72.8%) used sputum testing for diagnosing TB. The proportion of PPs who used X-ray alone for diagnosis declined to 16.0% from a baseline of 45.4%.

**CONCLUSIONS:** This PPM model, which emphasises sustained advocacy for DOTS and allows PPs to retain private patients, looks promising and needs to be tested at other sites.

**KEY WORDS:** tuberculosis; public-private mix; non-governmental organisations; DOTS; advocacy; RNTCP; India

IN INDIA, which carries nearly 20% of the global tuberculosis (TB) burden,<sup>1</sup> TB remains a major health problem, with high mortality and morbidity.<sup>2</sup> The globally accepted DOTS strategy recommended by the World Health Organization (WHO) was implemented in India in 1993 under the Revised National Tuberculosis Control Programme (RNTCP).<sup>3</sup> The private health sector in India accounts for three quarters of India's health expenditure,<sup>4</sup> and private practitioners (PPs) treat a substantial number of TB patients:<sup>5</sup> about 88% of rural and 85% of urban patients with TB first approach a PP,<sup>6</sup> while a household survey in India showed that 60% of individuals with a long-standing cough first went to a PP.<sup>7</sup> A recent survey in Tamilnadu showed that the first point of contact was a private non-governmental institution for 53% of sputum-positive patients.<sup>8</sup> Although the RNTCP has now been expanded to cover the whole country,<sup>9</sup> a substantial number of patients with TB are still treated within the private sector. To provide access to the RNTCP for these 'missing patients', it is important to involve PPs in the RNTCP. The private

sector is largely autonomous, and PPs tend to prescribe widely differing regimens for treating their TB patients.<sup>10</sup>

The importance of private-public partnership in TB control has been widely advocated globally. Several studies conducted in India and in other countries have highlighted the low level of awareness among PPs about National TB Control Programmes (NTPs), their overdependence on chest X-rays for diagnosing TB and their low use of sputum microscopy.<sup>11-17</sup> It is therefore necessary to educate PPs about best practices in treating TB and encourage them to participate in their NTP. With this objective, the RNTCP has developed schemes for the involvement of both private health care providers and non-governmental organisations (NGOs) in TB control.<sup>18</sup>

Several reports have been published demonstrating the feasibility of setting up a public-private mix (PPM) for TB control.<sup>6,19-26</sup> In the present study, we report our experiences in developing a novel PPM to enlist PPs in following the guidelines of the RNTCP when managing their TB patients.

## MATERIALS AND METHODS

### Setting

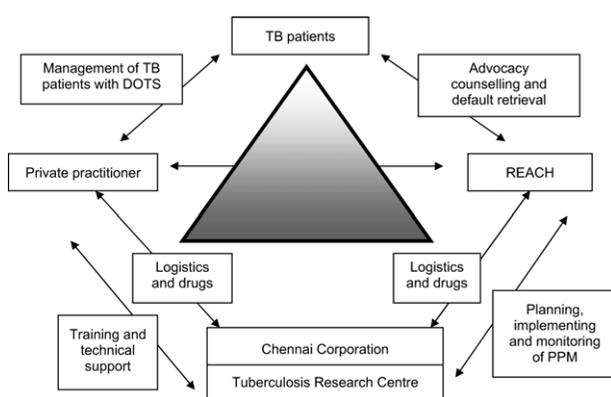
The study was carried out in Chennai City, Tamil Nadu, India. With a population of about 4.34 million, Chennai has the fourth largest population of slum dwellers (18.6%) among the major cities in India.<sup>27</sup> The RNTCP was implemented in Chennai City in 1999 through the Corporation of Chennai, the local health authority for the city. The Corporation, along with the Resource Group for Education and Advocacy for Community Health (REACH), an NGO based in Chennai, set up a PPM project the same year to involve private health care providers in the RNTCP.

### The REACH model

The PPM was set up as an informal non-profit collaboration initiated by REACH and the Corporation of Chennai. The Tuberculosis Research Centre (TRC) Chennai, an institute of the Indian Council of Medical Research (ICMR), provided technical support. The objectives of the PPM model were to increase patient access to RNTCP services by involving private health care providers and to devise innovative methods to overcome barriers to successful PPM. This model was outside the RNTCP-evolved schemes for PPs and NGOs.

### Role of different partners in the PPM model

REACH implemented the PPM with support from the Corporation of Chennai and the TRC (Figure 1). Advocacy and training of PPs was carried out by REACH. Technical input was obtained from the TRC for developing training and advocacy material. REACH developed tools for the survey and trained the investigators with assistance from the TRC, which also provided support for all data management. The Corporation of Chennai provided logistics support for the PPM, which included treatment cards, laboratory supplies, registers and patient-wise drug boxes to the PPs through



**Figure 1** Role of different partners in the PPM model. TB = tuberculosis; REACH = Resource Group for Education and Advocacy for Community Health; PPM = public-private mix.

REACH. All patients registered through the PPM were recorded in the RNTCP TB register.

### PPM centres

REACH identified private hospitals/clinics to function as PPM centres to facilitate participation of the PPs. The doctor in-charge and the laboratory technician in these centres were trained in RNTCP protocol. Laboratory technicians underwent a 5-day training programme in sputum microscopy offered by the TRC. Following the training these centres offered diagnostic and treatment facilities for TB patients identified in the private sector.

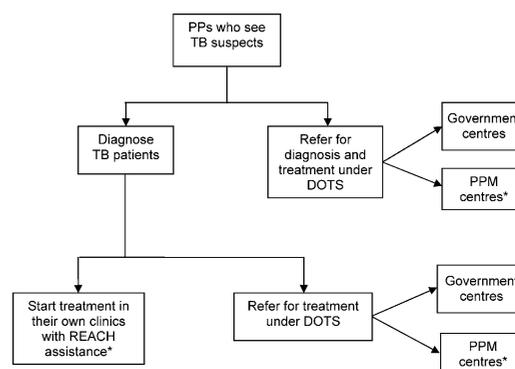
REACH assisted the PPM centres by obtaining patient-wise drug boxes and TB registers from the Chennai Corporation for use in these centres. REACH also identified and trained community volunteers in directly observed treatment (DOT) and provided support for defaulter retrieval and documentation. Together with the RNTCP staff, REACH undertook the monitoring and evaluation of the process to ensure accountability.

### Adopting DOTS

We have used the term 'adopting DOTS' for PPs who were willing to adopt DOTS principles by diagnosing and treating TB patients according to standard RNTCP guidelines. PPs who were willing to adopt DOTS were offered various options for participating in the programme: PPs could diagnose and treat patients in their own clinics following RNTCP guidelines or they could refer patients to government/PPM centres for diagnosis and/or treatment under the DOTS strategy (Figure 2).

### Advocacy

With assistance from the Global Fund to Fight AIDS, Tuberculosis and Malaria, REACH implemented a sustained advocacy programme for PPs in Chennai from 2003 to 2005 in four city zones. Private allopathic



**Figure 2** Options available for PPs adopting DOTS. \*Monitoring, supervision and documentation by REACH. PP = private practitioner; TB = tuberculosis; PPM = public-private mix; REACH = Resource Group for Education and Advocacy for Community Health.

medical practitioners ( $n = 863$ ) in the four zones were mapped. A baseline survey was carried out to assess knowledge about the RNTCP and TB management practices among the PPs.

#### Baseline survey

A pre-tested, semi-structured questionnaire was used to interview PPs for the baseline survey. PPs were selected for the survey from the four project zones using the probability-to-proportionate-sampling method during the period July 2003 to March 2004, assuming that 50% of PPs were knowledgeable about the RNTCP. PPs surveyed included those who managed TB as well as those who did not encounter TB patients in their practice.

In a one-to-one approach, a research investigator familiar with relevant aspects of the RNTCP interviewed the PPs individually at their clinics. The questions were related to the location, type of practice and TB management practices of the PPs interviewed.

#### Sensitising and training PPs

REACH developed and field tested advocacy materials for patients, PPs and the general public. For PPs this included an advocacy booklet, a desktop reference on RNTCP, a referral pad for documenting the referral pattern and a directory of resources containing the locations of government/PPM centres. Posters and booklets for patient education were distributed to the PPs for use in their clinics. Following the baseline interview, the research investigator explained the PPM initiative to the PPs and invited them to participate. PPs were educated about the better patient outcomes achieved with DOTS and the advantages of following an evidence-based and globally recommended protocol.

Continuing Medical Education (CME) sessions were organised in collaboration with the local branches of the Indian Medical Association. The CME included a briefing on the scientific basis of the RNTCP, PPM, clinical case discussions and interactive quiz sessions. Information Education Communication materials were distributed at these sessions and PPs were invited to participate in the project. To reinforce the concept of DOTS, monthly newsletters providing important information on TB were sent to the PPs.

#### Post-advocacy assessment

An independent agency (New Concept Information Systems [NCIS], New Delhi, India) was engaged to avoid bias in assessing the impact of advocacy after 12 months on the management practices of 50% of the PPs who had either been interviewed and sensitised at baseline or had participated in the workshops. NCIS used the questionnaire that had been administered at baseline for the post-advocacy assessment, adding a few open-ended questions. These related to constraints in adopting DOTS, reasons for not adopting DOTS and the usefulness of the advocacy and

training materials. Responses to these questions were coded and entered for analysis.

Data analysis was carried out using Excel (Microsoft, Redmond, WA, USA). Qualitative data were analysed as proportions. The  $\chi^2$  test was used to test significance between proportions. A  $P$  value of  $<0.05$  was considered to be statistically significant. The study was approved for its ethical and scientific content by the review board of REACH.

## RESULTS

#### Baseline survey

Two hundred of the 863 PPs (23.2%) from the four project zones were interviewed in the baseline survey. The Table shows the profile of the PPs who participated in the baseline survey.

#### Post-advocacy assessment

Of the 600 PPs who were sensitised by the one-to-one approach or through a workshop, 311 PPs (124 [39.9%] general practitioners and 187 [60.1%] specialty practitioners) were interviewed again a year later. The proportion of PPs adopting DOTS had increased compared to baseline; this difference was statistically significant ( $P < 0.001$ ). Of the 194 PPs who had adopted DOTS, 47.9% had adopted DOTS exclusively (Figure 3).

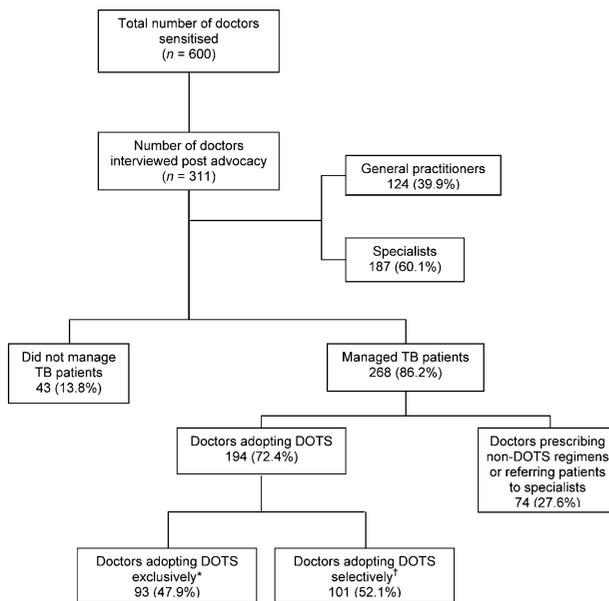
The majority (72.8%) of the PPs in the post-advocacy assessment used sputum testing for diagnosing TB in addition to other investigations (immunodiagnosics, etc.) as compared to baseline (33.3%). Furthermore, the proportion of PPs who used X-ray alone for diagnosis had decreased to 16.0% from a baseline of 45.4%. The proportion of PPs who used both X-ray and sputum testing for diagnosis had increased from the baseline of 19.1% to 59.3% in the repeat survey (Figure 4).

There was an increase in the percentage of PPs (55.2%) using sputum testing to declare a cure in their TB patients compared to baseline (22.6%). The

**Table** Profile of the private practitioners surveyed (baseline survey  $N = 200$ )

Profile of PPs/characteristics	Baseline survey $n/N$ (%)
Type of practitioner	
General practitioners	70 (35.0)
Specialists	130 (65.0)
PPs who manage TB suspects	
General practitioners	66/70 (94.3)
Specialists	75/130 (57.7)
Total	141/200 (70.5)
TB management practices of the PPs	
Adopting DOTS*	48 (34.0)
Adopting non-DOTS	93 (66.0)

\*Adopting DOTS denotes PPs who refer, diagnose and treat their TB patients using the guidelines provided by the RNTCP.  
PP = private practitioner; TB = tuberculosis.



**Figure 3** PPs adopting DOTS in the post advocacy assessment. \* PPs adopting DOTS for all their patients. † PPs adopting DOTS for some of their patients based on the PPs'/patients' preference. TB = tuberculosis; PP = private practitioner.

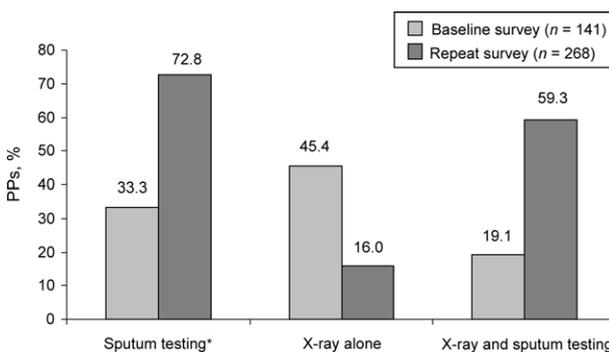
proportion of PPs who used X-ray alone for declaring cure decreased from a baseline of 54.8% to 26.3%. The proportion of PPs who used both X-ray and sputum microscopy for declaring cure increased from a baseline of 14.0% to 43.4% in the repeat survey (Figure 5).

#### Patient education

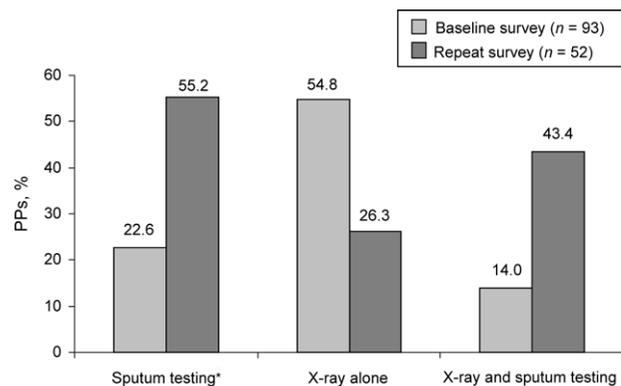
Most of the doctors (150/152, 98.6%) who treated TB patients reported that they spent time educating their patients, compared to 86% (80/93) in the baseline survey; this difference was statistically significant ( $P < 0.05$ ).

#### Use of advocacy materials by PPs

In response to the open-ended questions about the usefulness of the advocacy materials distributed to them, the PPs reported that they found some mate-



**Figure 4** Type of investigation used by the PPs for diagnosis of TB in their patients. † \* Additional investigations conducted. † Multiple answers.  $P < 0.001$  for all comparisons. TB = tuberculosis; PP = private practitioner.



**Figure 5** Investigations used by PPs for declaring cure in their TB patients. † \* Additional investigations conducted. † Multiple answers.  $P < 0.001$  for all comparisons. TB = tuberculosis; PP = private practitioner.

rial more useful than others, particularly the monthly newsletter (77.4%), which helped them to update their knowledge. PPs also appreciated the patient education material, which they used as supporting tools in counselling their patients.

#### Constraints mentioned by the PPs in adopting DOTS

Several constraints were mentioned by the PPs in adopting DOTS, such as difficulties in the follow-up of irregular patients, alcoholics and dropouts. In situations where the PPs administered DOT at their own clinics, the increase in the workload of the clinic staff was felt to be a constraint. Some PPs reported that they were not convinced about the treatment duration, particularly for extra-pulmonary TB patients. PPs also expressed difficulty in managing adverse reactions to anti-tuberculosis drugs. Logistical problems, such as insufficient space for storing the patient-wise drug boxes, were also cited.

From the patients' perspective, PPs cited stigma as one of the reasons for patients not adopting DOTS. Procedural issues, such as patients having to furnish proof of residence in order to be registered with the RNTCP, were reported as a factor limiting the utilisation of DOTS services.

In the post-advocacy assessment, 74 (27.6%) PPs had not adopted DOTS to manage even some of their patients. Reasons for not doing so included being satisfied with the non-DOTS regimen they were using, reluctance to document and follow up patients, and inconvenience for the patient. Stigma-related issues were also cited.

## DISCUSSION

The PPM model described in this article focused on developing long-term, sustainable partnerships with PPs, making them key stakeholders in TB control. To encourage a sense of ownership of the programme, PPs were supported in managing their patients themselves in their clinics, without worrying about losing

them. This partnership allowed PPs flexibility in referring patients, using private microscopy centres and planning treatment according to RNTCP guidelines. Protecting doctor-patient relationships and adding value to their practice by obtaining free drugs for patients from the system were key factors in inciting PPs to join the programme. With an increase (38.8%) in the proportion of PPs adopting DOTS post advocacy, a considerable impact was noted, reflecting the willingness of PPs to join the programme after sensitisation and training.

This study has also identified factors that will shape a successful PPM, as well as constraints that prevent PPs and patients from participating in the DOTS programme. Although no incentives were offered to the PPs, we provided free drugs and support services via an intermediary (in this case, REACH) for documentation and defaulter retrieval. This was perceived as substantial assistance for the PPs and illustrates the need to provide support services. Previous studies similarly reported the need to involve NGOs as intermediaries for increasing access to DOTS.<sup>22,28</sup>

The finding that specialists also treat a considerable number of TB patients is an indication of the need to target them for advocacy and also to focus on extra-pulmonary TB when dealing with PPs. Despite their participation in the PPM, only some PPs (52.1%) used DOTS selectively for their patients for reasons of stigma, indicating a need to strengthen advocacy to the general public to overcome stigma and to create a demand for DOTS. Logistical constraints also need to be addressed by the RNTCP to facilitate participation.

We have shown the importance of providing a framework for participation, and post advocacy to encourage and sustain PPM. One of the consequences of successful advocacy was the increased use of sputum microscopy as a diagnostic tool. This underlines the importance of educating PPs in the scientific rationale of TB management and providing appropriate information on available high quality diagnostic services within the RNTCP. The proportion of PPs who used both X-ray and sputum microscopy for diagnosis and declaring cure increased in the repeat survey compared to baseline. This is similar to the Mahavir model used in Hyderabad, India, where doctors obtained X-rays for most of their patients before referring them.<sup>19</sup>

We also found that more PPs in the post advocacy assessment engaged in patient education compared to baseline. PPs found the customised, user-friendly patient education materials that targeted the private sector more attractive than the material available from the RNTCP. The need for advocacy to PPs about DOTS has been demonstrated previously,<sup>20,22,24,25</sup> and is corroborated by the present study. The content of the modules used in this project not only focused on the scientific rationale, but also highlighted the added value brought to the PPs' practice by adopting DOTS

with free, high quality diagnosis and treatment offered to their patients. Advocacy tools, which provided repeated reinforcement of the concepts of TB management, such as the newsletter, were found to be most useful in sustaining the interest of the PPs. A communication plan is thus necessary to sustain PPs' interest in the partnership.

One matter of concern was that a proportion of practitioners continued to use non-DOTS for their patients. We attempted to ascertain the proportion of private patients on non-DOTS by providing TB registers for recording information about all TB patients seen by the PP. However, this could not be captured fully, and efforts to determine the proportion and profile of patients on DOTS or non-DOTS met with limited success. It is necessary to develop mechanisms to facilitate reporting of all TB patients within the private health care sector to the programme or health authorities. Several positive aspects of TB-related practices in the private health care sector that could be highlighted by the programme are the PPs' proximity to patients and the patients' acceptance of their services despite costs.<sup>29</sup>

## CONCLUSION

We developed an innovative and successful PPM model with a focus on advocacy and designing and providing a support system to enable successful and sustained participation of PPs in the RNTCP. Our study demonstrates the advantage of a sustained advocacy campaign for recruiting private health care providers into the NTP. While case contribution to the NTP is seen as an indicator of successful PPM, our study has also identified other indices, such as assessment of knowledge transferred, behaviour changes in practice methods and adoption of DOTS in practice, which may be equally important. Provision of support services through intermediaries such as NGOs is important for successful PPM. Replication of this model with NTP-NGO-PP links as essential components is feasible and needs to be tested at other sites. Such partnerships are important if the TB-related Millennium Development Goals are to be reached within the timeframe that has been set.

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## R É S U M É

**CONTEXTE :** Si l'on veut détecter et traiter tous les patients atteints de tuberculose (TB), il est nécessaire de recourir à des schémas novateurs pour garantir la participation des praticiens privés (PP) dans le Programme National Révisé de Lutte contre la Tuberculose (RNTCP). Nous avons développé un nouveau modèle de PPM (mixture public-privé) qui encourage les PP à utiliser la stratégie DOTS et à participer au RNTCP, tout en leur permettant de conserver leurs patients.

**MATERIEL ET MÉTHODES :** Le Resource Group for Education and Advocacy for Community Health (REACH) a élaboré et mis en œuvre un programme de participation avec les responsables sanitaires and le Tuberculosis Research Centre de Chennai, Inde. On a sensibilisé les PP au RNTCP et au DOTS grâce à un contact individuel

ou à des réunions de groupe, et on les a aidés à référer leurs patients. On a mené des enquêtes au début ainsi qu'à la fin de l'étude pour évaluer les modifications des attitudes et des pratiques.

**RÉSULTATS :** On a sensibilisé 600 PP au RNTCP. La proportion de PP adoptant le DOTS a augmenté de manière significative ( $P < 0,001$ ), et la majorité (72,8%) a utilisé les examens de crachats pour diagnostiquer la TB. La proportion de PP qui utilisait uniquement la radiographie pour le diagnostic de la TB a diminué à 16% à partir d'une valeur de 45,4% au début.

**CONCLUSIONS :** Le modèle PPM, qui insiste sur un plaidoyer continu pour le DOTS et permet aux PP de conserver leurs patients privés, s'avère prometteur et doit être testé à d'autres endroits.

RESUMEN

**MARCO DE REFERENCIA :** Se precisan esquemas innovadores a fin de conseguir la participación de los médicos privados (PP) en la captación y tratamiento de todos los pacientes con tuberculosis (TB) dentro del Programa nacional revisado de control de la tuberculosis (RNTCP). Se concibió un nuevo modelo de cooperación entre los sectores público y privado (PPM) que incita a los PP a participar en la estrategia de DOTS y en el RNTCP y les permite al mismo tiempo conservar sus propios pacientes.

**MATERIAL Y MÉTODOS :** El grupo de apoyo a la educación y promoción de la salud comunitaria (REACH) elaboró y ejecutó el programa en colaboración con los autoridades sanitarios y el Centro de investigación en TB de Chennai, India. Se sensibilizó a los PP sobre el RNTCP y la estrategia DOTS mediante contactos individuales o reuniones en grupo y se les prestó ayuda para la

remisión de pacientes. Al comienzo del estudio y después del mismo se realizaron encuestas con el propósito de evaluar las modificaciones en las actitudes y las prácticas.

**RESULTADOS :** Seiscientos PP recibieron información sobre el RNTCP. La proporción de PP que adoptaron la estrategia DOTS aumentó en forma significativa ( $P < 0,001$ ) y la mayoría (72,8%) utilizó el examen del esputo en el diagnóstico de la TB. La proporción de PP que usaron exclusivamente la radiografía de tórax en el diagnóstico disminuyó de 45,4% al comienzo del estudio a 16,0% después del mismo.

**CONCLUSIÓN :** Este modelo de PPM, que hace hincapié en la promoción de la estrategia DOTS y permite a los PP conservar sus pacientes privados, parece promisorio y se debe ensayar en otros centros.

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