Private practitioners and tuberculosis case detection in Jogjakarta, Indonesia: actual role and potential

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Summary

BACKGROUND Indonesia has a high tuberculosis (TB) prevalence and a large private health sector.
OBJECTIVES To explore the potential of private practitioners (PP) in TB control in Jogjakarta by assessing their load of TB suspects and case-management practices.
METHODS We conducted a cross-sectional telephone survey of a random sample of 164 PP, weighted to the local proportions of specialists, general practitioners (GP), nurses and midwives. We investigated their knowledge of directly observed treatment, short-course (DOTS), whether they see TB suspects, whether they refer such patients and how they possibly diagnose and treat TB.
RESULTS We sampled 174 PP, of which 164 (94.3%) completed the interview. Most PP (63.4%) reported to have seen TB suspects in their private practice, and 62.8% were also employed in a DOTS facility. Specialists saw on average 18 suspects, GP 11 suspects, and nurses–midwives three suspects in a year. Many PP (45.2%) always relied on National Tuberculosis Control Programme (NTP) services for diagnosis. Fewer PP (41.5%) used, by themselves, diagnostic procedures complying with the NTP guidelines. The majority (63.6%) always referred confirmed cases for treatment, mainly (71.4%) to NTP services. Most PP (72.7%) who treated TB patients themselves did not prescribe the NTP standard regimen.
CONCLUSION The study shows that the TB case load per PP is low in Jogjakarta, where the NTP already involves public and private hospitals besides public health centres. Initiatives to engage all PP might only marginally contribute in increasing the TB case detection.

KEYWORDS tuberculosis, tuberculosis control, private practitioners, public–private mix, Indonesia

Introduction

There have been substantial debate and advocacy on the appropriate role for the public and private sectors in tuberculosis (TB) control amid calls for strategies to attain the millennium development goals (Lonnroth et al. 2004; Newell et al. 2005; WHO 2006a). Private practitioners (PP) in many high-burden countries may outnumber public health-care providers and may offer better geographical access and more personalized care. A significant proportion of TB cases in such settings are detected and treated by private health-care providers (Uplekar et al. 2001). The corresponding figure often quoted for Asia is 60% (Newell 2002). However, it is widely agreed that treatment in the private-for-profit health sector is usually of poor quality with low cure rates (Newell 2002). The rationale for a possible intervention has been presented as straightforward: optimize the role of the PP and try to regulate the private sector. Others have questioned the potential, effectiveness and costs of such interventions in resource-constrained settings (Mahendradhata et al. 2003; Lambert et al. 2005).

Indonesia ranks third in the world for TB burden (WHO 2006b). There were 245 new TB cases per 100 000 persons and 110 new sputum smear-positive cases per 100 000 in 2004. Although the global target for treatment success (85%) has been achieved in the country since the year 2000, progress towards the case-detection target (70%) has been lagging behind, reaching 53% in 2004. There are many possible reasons underlying this low case-detection rate, including the over-estimation of the calculated target figure using Annual Risk of Infection and Styblo’s formula (Borgdorff 2002; Newell et al. 2006). However, the 2004 National TB Prevalence survey (NIHRD 2005) confirmed...
that many TB suspects have not reached the public health centres, which form the backbone of the National Tuberculosis Control Programme (NTP).

The country has a large and growing private health sector (WHO 2003). The World Health Report 2006 notes that private expenditure on health care in the country, of which 74.3% was out-of-pocket, amounts to 64.1% of the total health expenditure (WHO 2006c). The 2004 Indonesian National Socio-Economic Survey (SUSENAS) showed that around 60% of the population went to the private sector for medical care. The 2004 National TB Prevalence survey additionally revealed that even though the public health centre remains the preferred facility for TB treatment, it is closely followed by private doctor practice, public hospital, private hospital and private nurse–midwife practice (NIHRD 2005).

In the last few years, increasing attention has been given to the policy to involve PP in TB control. There have been reports of successful efforts to involve PP in other settings (Murthy et al. 2001; Newell et al. 2005, 2006). However, solid data on the number of cases actually detected and managed in the private sector in Indonesia and on the quality of their treatment and the information needed to appraise the potential benefits and costs of this strategy, are absent. We aimed to assess the volume of TB suspects and the case management in private-for-profit practices in Jogjakarta, Indonesia, to inform further policy discussions.

Methods

Study setting

The province of Jogjakarta is located in the central Southern part of Java island. The province is divided into five districts, has 3.2 million inhabitants and covers an area of 3185 km². The province’s primary-care network consists of around 650 PP (doctors, midwives and nurses) and 117 public community health centres staffed also by doctors, midwives and nurses. These first-line services are backed up by nine public hospitals and 24 private hospitals. The backbone of NTP's directly observed treatment, short-course (DOTS) programme in Jogjakarta is the network of the 117 public health centres, five chest clinics and 18 hospitals (public and private). These facilities, which diagnosed 2055 TB cases in 2003, are linked for data, we used the Mann–Whitney test.

Results

A total of 174 telephone interviews were attempted and eventually all (selected) PP were reached. One hundred and sixty-four PP (94.3%) completed the interview and 10 (seven doctors, two nurses and one midwife) refused to participate. Of the 164 PP, 104 (63.4%) were medical doctors (87 GP and 17 specialists – internal medicine and chest) and 60 (36.6%) were non-physicians (21 nurses and 39 midwives). The physicians were balanced in gender (56% males, 44% females), while females dominated
Most PP (64.6%) had offered private-for-profit health care for more than 5 years and 62.8% worked also in a public or private health facility that offered DOTS services. Overall, only 23.2% of PP had satisfactory knowledge of DOTS, with significantly more physicians having satisfactory knowledge than non-physicians (34.6% vs. 3.3%).

One hundred and four PP (63.4%) reported to have seen TB suspects in their private practices. The percentage of PP who had seen TB suspects in their private practice is only 3.5% higher among PP who also worked in DOTS facility (68.9%) compared with those who did not (58.7%), but this difference was not statistically significant ($P = 0.08$). PP who had seen TB suspects saw a median of five suspected cases per year, with physicians seeing significantly more than non-physicians (Table 2). Nonetheless, specialist physicians only detect a median of 18 suspects in a year, GP 11 and nurses–midwives 3.

Among the 84 PP, who had seen TB suspects in their practices and provided information on their diagnostic practices, 38 (45.2%) always referred to NTP’s DOTS services for diagnosis. The remainder always referred to private sector laboratories or mixed the two approaches (Table 2). This pattern was not correlated to the knowledge of DOTS ($P = 0.70$), but significantly correlated to professional qualification: very few non-physicians (7.7%) relied on private facilities to carry out diagnostic procedures. Only 34 (41.5%) used clinical signs, smear microscopy and chest X-ray in line with NTP recommendations, while the remaining reported diagnosis practices not in line with NTP guidelines, which sometimes had heavy cost implications for the patients. There was no difference between specialists and GP.

Forty-nine (63.6%) physicians who eventually detected a TB case always referred them for treatment; a few (15%) always managed confirmed cases within their practices, while the remainder combined the two approaches. When referring patients, 71.4% of physicians always referred to NTP’s DOTS services, while the remaining referred to non-DOTS services, such as other private clinics. There was no significant difference between specialists and GP. In this respect, among those who treated patients in their practices, 72.7% were not prescribing NTP standard regimens; only 45.8% claimed to appoint treatment observers and reported efforts to contact defaulting patients.

**Discussion**

Our results show that TB suspects in Jogyakarta do seek care at private clinics, although the case load per provider is notably low. The data also suggested that TB diagnosis and treatment practices of PP are of poor quality.

While we have sampled PP who are accessible by telephone, we are confident that this has not introduced major bias. Given the current wide affordability and availability of mobile phones in Jogjakarta, only a small proportion of PP is inaccessible by telephone, regardless of geographical (urban vs. rural) location and professional qualification. The study subjects were asked to estimate retrospectively the number of TB suspects seen. A prospective registration and direct observation could have confirmed to what extent PP’s reported actions actually reflected what they did in reality, but was not possible with the resources available. Nevertheless, as the average

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<tr>
<th>Characteristics</th>
<th>Professional qualifications</th>
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<tr>
<td></td>
<td>Specialists ($n = 17$)</td>
<td>GP ($n = 87$)</td>
</tr>
<tr>
<td>Gender</td>
<td>Male 12 (70.6%)</td>
<td>46 (52.9%)</td>
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<tr>
<td></td>
<td>Female 5 (29.4%)</td>
<td>41 (47.1%)</td>
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<tr>
<td>Practice duration</td>
<td>&lt;5 years 3 (17.6%)</td>
<td>40 (46.0%)</td>
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<td></td>
<td>5–10 years 4 (23.6%)</td>
<td>20 (23.0%)</td>
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<tr>
<td></td>
<td>&gt;10 years 10 (58.8%)</td>
<td>27 (31.0%)</td>
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<tr>
<td>Work also in DOTS facility</td>
<td>Yes 15 (88.2%)</td>
<td>51 (58.6%)</td>
</tr>
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<td></td>
<td>No 2 (11.8%)</td>
<td>36 (41.4%)</td>
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<tr>
<td>Knowledge of DOTS</td>
<td>Satisfactory 7 (41.2%)</td>
<td>29 (33.3%)</td>
</tr>
<tr>
<td></td>
<td>Unsatisfactory 10 (58.8%)</td>
<td>58 (66.7%)</td>
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GP, general practitioners; DOTS, directly observed treatment, short-course.
number of TB suspects visiting PP is relatively low, they probably recall their experiences with these suspects well. The low figure also suggests that it was unlikely that PP exaggerated the numbers. Furthermore, we have asked what is done in general rather than specifically per case, in line with our aim of assessing the pattern of average practice/behaviour of PP. There is a possibility that PP overstated their compliance to NTP guidelines. However, this would not change the direction of the study finding which documented that the PP’s reported compliance to NTP guideline is generally low. Finally, there was no relation between having seen a TB suspect and employing in NTP’s DOTS facility, suggesting that the difference in the awareness of TB symptoms or better recall to exposure to DOTS, did not play much of a role.

Indeed, a majority of PP also work in public health-care facilities which provide DOTS services. It is a common practice in Indonesia to offer private services in the evening, frequently with a diagnosis and treatment approach that differs from the one during daytime practice in the public setting. Notwithstanding their dual public and private roles, a few PP actually have sufficient knowledge of DOTS. Almost all PP have heard of DOTS as some kind of a public health programme, but a majority of PP was not aware of its most essential components, the short-course regimen and let alone the other key components of the DOTS strategy. The lack of knowledge on DOTS among PP was documented in other settings as well (Uplekar et al. 1998; Porter & Rubio 2003; Chakaya et al. 2005), and was frequently attributed to lack of training in medical schools and limited efforts for continued education. This also applies in our study population. DOTS has only been introduced in the country in 1995 and has not yet been formally integrated into the undergraduate medical curriculum. There is also a dearth of (public-health related) continuing medical education opportunities in Indonesia. Additionally, our findings could suggest that adequate information regarding DOTS is lacking even in public health-care facilities.

Smear microscopy is requested by most PP during the diagnostic process. Hence, even though the knowledge of DOTS as a case management strategy is weak, the understanding of the importance of microscopy is not. This may be explained because a majority of PP also work in or refer to settings which offer DOTS, and in these facilities, smear microscopy is prominent. However, a considerable proportion also resorted to diagnosis procedure not in line with the NTP guidelines. Porter and Rubio (2003) reported similarly that private physicians in Philippines rely more on chest X-ray than sputum microscopy. Chakaya et al. (2005) also documented that PP in Kenya did not consider sputum smear microscopy crucial.

The case-management pattern is the most worrying of all our findings. Private physicians who treat TB patients themselves rarely prescribe treatment in line with the current standard of the NTP, and often, do not include treatment observation or defaulter tracing. This is similar to the findings in, again, Philippines (Portero & Rubio 2003), Kenya (Chakaya et al. 2005), India (Uplekar et al. 1998) and Uganda (Nsuthi et al. 2001). It implies that in Jogjakarta, TB patients treated by PP are likely to receive substandard care, which is hardly surprising taking into account the dominant pattern of irrational prescribing regardless of diseases in private practices in the province (Dwiprahasto 1992).

Only 63% of the PP have seen TB suspects in their practices and the median numbers attended are small (5 per year). Our figures allow to roughly project the yield of a DOTS public–private partnership initiative in Jogjakarta that would link all PP to the NTP and have them effectively screen all consulting TB suspects. Based on the number of suspects seen by each type of PP in our study (specialists, GP, nurses and midwives), all providers together would then screen in 1 year around 5464 patients. The most frequently cited figure for the proportion of smear positives among suspects in Indonesia is 10% (DOH-ROI 2003). Hence, some 546 of these 5464 would be smear positive. Based on our findings, 45%
(246) of them are already captured by the NTP without any intervention as they are referred by PP for diagnosis. An additional 135 (45% of the remaining 300 cases) are already referred to the NTP for treatment after diagnosis in the private sector. Effective involvement of all PP in Jogjakarta, which is a very optimistic scenario, would thus allow for the detection of 165 additional smear-positive cases in 1 year. The NTP TB control programme in Jogjakarta already detected 1196 cases in 2003, and it faces challenges of case holding. Using 64 per 100 000 as incidence rate for Jogjakarta, the case detection rate of NTP was 62.3%. Intensively engaging PP in this province could then lead to a case detection rate increase of 8.6%. The question of cost effectiveness and opportunity cost of such an effort must be raised.

Still, a pilot study carried out recently in Palembang in the neighbouring island of Sumatra reported that 15 GP detected over 500 smear-positive cases in a year (Idris 2003). These contrasting figures merit discussions. First, it has been long suspected that there is a wide variation of TB prevalence across Indonesia. Results from a recent nationwide prevalence survey indicate that the prevalence in Jogjakarta is as low as 64/100 000, while the prevalence in Palembang is as high as 160/100 000 (NIHRD 2005). Second, the results obtained across different projects that involve PP in TB control vary widely. A recent review of six such experiences in India showed that the contribution of these projects to case notification varied between 2% and 26% (Dewan et al. 2006). The ratio of new cases notified per year by PP varied between 1.4 and 18.8. Context-specific factors evidently matter much, which is also reflected in the contrast between our projection and the figure from Palembang.

Our survey was conducted in an area where a hospital DOTS linkage initiative has been initiated since the year 2000, enabling NTP standard TB services to be offered in public and private hospitals in addition to community health centres. Thus, access to DOTS services in Jogjakarta is better than that in other provinces. Furthermore, many PP, and almost all nurses–midwives in particular, already refer TB suspects to public services for diagnosis. By law, they are not allowed to manage patients beyond their professional boundaries. Doctors also frequently refer patients, probably in consideration of the patient’s socio-economic status, access, patient’s personal preference, or a combination of these. Hence, most patients with TB symptoms already use or end up in the DOTS services in Jogjakarta.

In summary, our findings suggest that public–private mix initiatives targeting PP in an area, where the TB control programme is already comprehensive (e.g. involving public and private hospitals besides public health centres) and accessible, would only marginally improve the overall TB case-detection rate. The objectives of involving PP in such settings would probably be better geared towards ensuring standard case management for all TB suspects seen after working hours by those PP already employed in DOTS facilities (TBCTA 2006; WHO 2006d). This could reduce the diagnosis and treatment delays (Lambert & Van der Stuyft 2005), and at the same time, the financial burden for the patient. Nevertheless, given the difficulty of working with the largely unregulated private-for-profit health sector and the competing priorities faced by public health authorities, the resource implications and the cost effectiveness of strategies to involve PP must first be considered.

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**Praticiens privés et détection de cas de tuberculose à Jogjakarta en Indonésie: rôle et potentiel réels**

**Données de base** L’Indonésie a une prévalence élevée de tuberculose (TB) et un vaste secteur privé de santé.

**Objectifs** Explorer le potentiel des praticiens privés (PP) dans le contrôle de la TB à Jogjakarta en évaluant la charge de suspects TB dans leur clientèle et les pratiques de gestion des cas de TB.

**Méthodes** Nous avons mené une surveillance transversale par téléphone sur un échantillon aléatoire de 164 PP pondérés aux proportions locales de spécialistes, de médecins généralistes, d’infirmières et de sages-femmes. Nous avons interrogé leur connaissance du DOTS (administration du schéma court de traitement sous observation), s’ils voyaient des suspects TB, s’ils référaient de tels patients et comment ils diagnostiquaient et traitaient la TB. 

**Résultats** Sur un échantillon de 174 PP, 164 (94,3%) ont accompli l’entretien. La plupart des PP (63,4%) ont rapporté avoir vu des suspects TB dans leur cabinet privé et 62,8% étaient également employés dans un service DOTS. Les spécialistes avaient vu en moyenne 18 suspects, les médecins généralistes 11 suspects et les infirmières/sages-femmes, 5 suspects en une année. Beaucoup de PP (45,2%) se sont toujours basés sur les services des programmes nationaux de contrôle de la tuberculose (PNT) pour le diagnostic. Peu de PP (41,5%) ont employé eux-mêmes des procédures de diagnostic conformes aux directives des PNT. La majorité (63,6%) des PP ont toujours réitéré les cas confirmés de TB pour traitement, principalement (71,4%) dans les services de PNT. La plupart des PP (72,7%) qui ont eux-mêmes traité des patients TB n’ont pas prescrit le régime standard du PNT.

**Conclusion** L’étude montre que la charge de cas de TB par PP est faible à Jogjakarta ou le PNT implique déjà les hôpitaux publics et privés autant que les centres de santé publique. Les initiatives pour engager tout les PP pourraient contribuer, mais seulement marginalement, à augmenter la détection de cas de TB.

**mots clés** tuberculose, contrôle de la tuberculose, praticiens privés, mélange public privé, Indonésie
Médicos con consulta privada y detección de casos de tuberculosis en Yogyakarta, Indonesia: papel actual y potencial

ANTECEDENTES Indonesia tiene una alta prevalencia de tuberculosis (TB) y un amplio sector sanitario privado.

OBJETIVOS Explorar el potencial que los médicos con consultas privadas (MPs) tendrían en el control de la TB en Yogyakarta, evaluando su papel en la carga de sospecha de TB y práctica de manejo de casos.

MÉTODOS Se realizó un estudio telefónico crossecional a una muestra de 164 MPs elegida al azar y ponderada por la proporción de especialistas, médicos generales, enfermeras y comadronas. Se evaluó su conocimiento de DOTS (terapia de observación directa), si atendían pacientes con sospecha de TB, si referían a dichos pacientes y cómo podrían diagnosticarse y tratarse la TB.

RESULTADOS De una muestra de 174 MPs, 164 (94.3%) completaron la entrevista. La mayoría de los MPs (63.4%) reportaron haber visto casos con sospecha de TB en sus consultas privadas y 62.8% estaban también empleados en un centro que utilizaba DOTS. En promedio, los especialistas veían 18 sospechosos por año, los médicos generales 11, y las enfermeras y comadronas 3. Muchos MPs (45.2%) dependían siempre del Programa Nacional de Tuberculosis (PNT) para servicios de diagnóstico. Un menor número de MPs (41.5%) utilizaban, ellos solos, procedimientos diagnósticos que cumpliesen con las guías del PNT. La mayoría (63.6%) siempre refería los casos confirmados para tratamiento, principalmente (71.4%) a los servicios del PNT. La mayoría de los MPs (72.7%) que trataban ellos mismos a los pacientes con TB no prescribían el régimen estándar del PNT.

CONCLUSIÓN El estudio muestra que la carga de casos de TB por MP es baja en Yogyakarta, en donde el PNT ya involucra hospitales públicos y privados además de centros sanitarios públicos. Las iniciativas para implicar a todos los MPs podría contribuir a aumentar solo marginalmente la detección de casos de TB.

palabras clave tuberculosis, control de la tuberculosis, médicos con consulta privada, mezcla público-privado, Indonesia