

The implications for TB control of the growth in numbers of private practitioners in developing countries

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Virtually every country in the world has a National Tuberculosis Programme (NTP) that takes primary responsibility for tuberculosis (TB) control. To help the NTPs achieve effective worldwide TB control, the World Health Assembly approved two targets in 1991: to cure 85% of detected new cases of sputum smear-positive TB, and to detect 70% of existing cases of sputum smear-positive TB. The appropriateness of these targets has subsequently been confirmed using computer modelling. The targets are based on two observations: cases that receive inadequate treatment are likely to survive for many years while remaining chronic transmitters, and untreated smear-positive patients are expected to remain infectious for approximately two years after disease onset, then die or recover. On average they cause one additional infective case within these two years. In areas with no TB control services, an equal number of people die of TB and become transmitters — that is to say, the number of TB transmitters neither increases nor decreases over time.

The World Health Organization (WHO) emphasizes the need to attain the cure rate target first, as high numbers of failed treatments can actually lead to an *increase* in TB incidence due to the creation of chronic transmitters (as mentioned above). Only when the first target has been met should case-finding be increased until the second target is met. The case-finding target was set at 70% as being the highest level that could reasonably be attained in average developing country settings. The higher the case-finding rate, the faster incidence will fall.

A keystone of TB control has always been that active case-finding is unnecessary as TB symptoms are sufficiently severe that cases will seek treatment (when it is available) soon after they develop TB. In the past, virtually the only TB treatment available in developing countries was provided by government health services. Therefore, when setting targets for TB control it was assumed (although not explicitly) that other providers such as private practitioners, traditional healers, etc, could be neglected. It was assumed that the majority of cases not treated by government health services would die — leaving few to become chronic transmitters.

That was before the explosion in the numbers of private practitioners in Asia and other areas of the developing world, however. Nowadays, cases that are unknown to the NTP do not die after two years. Instead they seek treatment from private practitioners, and it is widely agreed that this treatment is normally of very poor quality with very low cure rates. The majority of patients who receive poor treatment neither die nor are cured of the disease, but remain sputum-positive and

chronic transmitters of TB. The time-span before they cease to be chronic transmitters (because they die, or their infectiveness becomes negligible or they obtain a true cure from the NTP) is unknown, but experience has shown that substantial numbers of patients seek treatment from NTPs months or even years after first seeking treatment from other providers.

We can estimate the effects of private practitioners by comparing the percentage of cases in settings with and without private practitioners who may become chronic transmitters. First, consider a programme just meeting both targets, in a setting where the number of private practitioners is negligible. Of every 100 people who develop sputum smear-positive TB, 70 will be detected and 30 will either die or spontaneously recover. Of the 70 who are detected, 85% will be cured, but 15% will not, and could potentially become chronic transmitters. Thus, of our original 100 patients, 11 at most (15% of the 70 detected) could become chronic transmitters. Realistically, unless they receive further treatment, a high proportion of these 11 will die during or after treatment. If we assume, for argument's sake, that only 40% of these *potential* chronic transmitters actually become chronic transmitters, we would expect at most 4 of our original 100 patients to become chronic transmitters.

Under these same conditions, a programme just meeting both targets in an area with a high number of private practitioners could again expect less than 4% of all cases to become chronic transmitters following NTP treatment. However, the cases treated by private practitioners outside the NTP (30% of all cases) could become chronic transmitters — giving a total of 34%.

The above calculations imply that poor cure rates by private practitioners may lead to a transmission rate more than eight times that which is “just acceptable” for effective TB control within NTP programmes. The calculations are approximate because detailed data on “average” private practitioners’ cure rates are not known (given the nature of private practices in developing countries, these probably never will be directly available), and because of the added complications of TB sufferers seeking care from a succession of providers. Even in the highly unlikely event that private practitioners currently cure as many as 50% of their TB patients and only 30% of the remainder become chronic transmitters, the number of chronic transmitters resulting from private practitioners will more than match those resulting from NTP treatment. Of course in Asia and other settings, the situation will be worse, as the percentage of TB patients seen by private practitioners is much higher than 30%. The figure often quoted is 60%.

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Ref. No. 02-0087

This creates a dilemma. In areas with high numbers of private practitioners (which include most of Asia, and urban areas of Africa and Latin America), NTPs have three options. The first is to meet *both* targets rapidly, but there is a problem: it is widely accepted that rapid geographical expansion can compromise cure rates. The second option is to increase the 85% cure rate target to take into account patients who are treated by private practitioners. In situations where private practitioners treat more than 15% of identified cases, this will not be possible and the NTP alone will not be able to attain cure rates acceptable for TB control. The third option is that the 85% cure rate target will have to be met by all providers. Unfortunately, because of the nature of private practice in developing countries, assessing private practitioners' cure rates and improving them to meet the targets will be difficult and costly.

This issue is of increasing importance because of two developments in TB control. Poor treatment of TB can

lead to multidrug-resistant TB, which is virtually incurable in many developing country settings because of the costs of appropriate drugs. In addition, in the era of TB/HIV co-infection, increasingly patients can be expected to use private practitioners both to retain confidentiality and because public health services are becoming more and more overloaded.

WHO has produced some initial information and guidelines on involving private practitioners in TB control, but a great deal more work is needed. It is clear from work in India, Nepal, Pakistan, the Philippines and other developing countries, that attempts to involve private practitioners will need many local strategies, rather than a single national strategy. All countries must now accept the need to estimate the effects of private practitioners on tuberculosis control and, where necessary, take steps to involve them. ■

Conflicts of interest: none declared.

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