

# Nonadherence to TB treatment: who cares?

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**C**ase vignette: *Patient A was a middle-aged man with a history of intravenous drug abuse and chronic alcohol consumption. He was admitted to a public hospital for a one-month history of cough and weight loss. His chest radiograph showed consolidation in the left lung and his sputum smear was acid-fast bacilli (AFB) 4+. Tuberculosis (TB) treatment was started and continued under outpatient Directly-Observed Therapy (DOT). He became irregular with DOT after one month and completely ceased DOT after four months. His sputum culture at two months of treatment still grew Mycobacterium tuberculosis. As the patient did not return for treatment despite multiple phone calls and two home visits, the legal order for compulsory outpatient DOT was served by the Ministry of Health (MOH) three months after treatment interruption. When he resumed treatment, he was coughing and his sputum AFB smear was positive. Outpatient DOT was resumed; however, he again ceased treatment after one month. Ten months later, he was admitted to hospital after he sustained a stable head injury from a road traffic accident. His chest radiograph at that time showed worsening consolidation in both lungs. His sputum AFB smear was 3+. TB treatment was resumed and his legal order escalated to compel DOT as an inpatient. After two months, he absconded from the ward with the assistance of his son. Six months later, his son brought him back to hospital for worsening cough, shortness of breath and generalised weakness. His sputum AFB smear was 4+. TB treatment was resumed but he again absconded from the ward after one month. He died at home two months later.*

The fundamental goal of TB control is the interruption of disease transmission. Among the strategies to achieve this is the early and successful treatment of infectious TB cases. Studies have shown that in many disease conditions, a large number of patients do not adhere to their treatment, and when left to themselves, this is true of TB patients as well.<sup>(1)</sup> Nonadherence to TB treatment, however, has implications not only for the patient, but also for the community.<sup>(2)</sup> Nonadherent patients are more likely to fail treatment and develop drug-resistance.<sup>(3)</sup> They may take a longer time to convert their bacteriological status, thus prolonging the period of contagiousness, and worse, spread the drug-resistant disease in the community. They are also more likely to relapse (i.e. have another episode of TB after an apparently quiescent interval), thus creating another episode of contagion in the community.

There are many reasons why it is difficult for TB patients to adhere to medications. Firstly, adherence is a problem when multiple medicines are required to be taken for long periods; TB treatment lasts for many months. Secondly, patients usually feel better after a few weeks of treatment and may lose their motivation to persist with treatment after their symptoms have abated. Thirdly, TB drugs often give rise to side-effects such as tiredness and abdominal queasiness, which are a nuisance. Though transient and harmless to the body, they are unpleasant enough for some patients to abandon treatment. Fourthly, the cost of medical visits, tests and treatment may be sufficient to discourage the continuation of treatment. Fifthly, patients who suffer from mental disorders or substance abuse (e.g. addiction to drugs or alcohol) may lack the insight or discipline to be adherent. Lastly, there are a whole host of social and personal factors that play very important roles in treatment nonadherence. These include personal, family, social or work issues that may loom larger than their medical conditions. Also, there are the patients who simply do not accept their TB diagnosis or refuse the treatment.

Once the TB Control Unit (TBCU) is alerted to a patient who is nonadherent to or who refuses TB treatment, various measures are employed to recall the patient, including phone calls, letters and home visits. The patient is counselled again, the social circumstances evaluated, and the reasons for nonadherence/treatment refusal are addressed as far as possible. Avenues available to the TBCU to assist such patients include the standard assessment by the medical social worker (MSW) who then refers the patient to the available community support services, and downgrading to subsidised status and Medifund assistance for eligible patients. Many patients do respond to these measures. Since July 2009, a local non-governmental organisation, SATAComm Health, has sponsored an assistance scheme for low-income patients on DOT. After the patients are assessed as eligible by the MSW, they would receive supermarket vouchers as long as they adhere to DOT – S\$40.00 monthly with an end-of-treatment voucher of S\$100.00. These vouchers serve as enablers and incentives for needy patients to be regular with their DOT. Feedback from the MSW and patients so far has been very positive. More financial and social support schemes are needed, as TB disproportionately affects the poor and disadvantaged in society. It is hoped that the community will respond to this need, in recognition that it is in their interest to ensure that TB patients are successfully treated.

It is, however, the common experience of TB programmes worldwide that, despite supportive measures, there are patients

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who will not adhere to treatment. The effective use of legal intervention, culminating in incarceration in some patients, as the last resort has been reported in the literature.<sup>(4,5)</sup> Short-term incarceration, followed by outpatient DOT, has also been shown to be relatively successful in the management of selected noncompliant TB patients.<sup>(6)</sup> In Singapore, patients for whom all efforts by the TBCU to promote treatment adherence have failed are evaluated by an MOH-appointed Committee for TB Treatment Defaulters, who then recommends to the Director of Medical Services (DMS) those who are to be compelled to undergo compulsory DOT until completion of treatment. Priority is accorded to those who pose a greater public health threat to the community, e.g. bacteriologically positive pulmonary cases, drug-resistant cases and cases with vulnerable contacts such as kindergarten or school workers. The MOH then serves legal orders to these patients under the Infectious Disease (ID) Act. These patients are ordered to comply under the threat of fines (up to S\$10,000–S\$20,000) and imprisonment (up to 6–12 months). The first legal orders to compel TB treatment were served in July 2004. As of May 2012, 278 patients have been served the ID Act. Although the majority eventually completed treatment, many did not achieve this within an acceptable time-frame, i.e. within one year from the time the Act was served. Despite the threat of legal action, not a few of these patients continued to interrupt treatment, while others took some time to return for treatment

and still others, after having been served, have yet to return for treatment.

As long as the threat of the law is not carried out, patients who are determined to be nonadherent will be allowed to pose a danger to society. If, despite all reasonable supportive measures and the threat of the law, the TB patient is still nonadherent or refuses treatment, society and the government entrusted with its safety must decide how far it is willing to go to protect its members from this infectious disease.<sup>(7)</sup>

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