For tuberculosis elimination, Directly Observed Therapy, short course (DOTS) is essential but not sufficient

Global tuberculosis (TB) incidence peaked in 2004 (at 140/100,000/year) (1) and has declined ever so slightly since, but it is flourishing where poverty and marginalization abide, as in the Canadian Aboriginal communities referred to in this issue of the Journal. Larcombe (2) describes the crowded housing and inadequate ventilation, shown to be factors in TB transmission (3), in 2 Aboriginal communities in Manitoba. While this study does not causally link household crowding to tuberculosis, it does describe woefully inadequate housing, a marker of socio-economic disparity common to Aboriginal communities of Canada. Moreover, the study is a fine example of community-based participatory research in which a trusted researcher has been invited to investigate a community concern. The parameters of the information sought were determined by the community itself. High participation resulted, and the findings were first discussed by the community as owners of the information, then published with their permission. More such research is needed, and one hopes that it will lead to meaningful outcomes – such as, in this instance, improved housing, and perhaps reduced transmission of tuberculosis.

Also in this issue is Pamela Orr’s thoughtful review of adherence to TB treatment for Aboriginal patients and communities (4,5). These papers are particularly timely in the context of rising rates of TB in Canada’s Aboriginal population (6). Non-adherence is the factor most often blamed for failed TB treatment and may be attributable to the patient or the program. A paradigm shift towards greater program and provider responsibility is recommended in the International Standards of Tuberculosis Care (7). The Standards hold programs responsible for enabling patients to achieve treatment success through culturally sensitive education, removal of obstacles to adherence, flexible and patient-friendly regimens, support structures and the building of trusted relationships between health worker and patient.

The term adherence is one which is fraught with overtones of judgement towards the patient. Adherence, Orr states, is a task-specific behaviour, not a personality trait. It cannot even be measured unless a contract is struck with the patient’s full understanding. Thus adherence must be a partnership with reciprocal responsibilities. Orr (4) also points out the differences between managing TB and diabetes. In the latter, failed adherence affects only the patient, whereas in the former, there is a duty to protect the public by preventing transmission, thereby imposing a greater responsibility on the patient. Orr reminds the reader that the impediments to adherence in Aboriginal communities are complex interactions of historical colonization, hierarchical governance and cultural misunderstandings, all of which must be overcome before a program can reach out to the patient and his or her community in a partnership of adherence.

The STOP TB partnership is a global movement whose ultimate goal is the elimination of TB as a public health problem. The STOP TB strategy demands high standards of TB control.
programs: sustained political commitment to finding cases early; confirmation with bacteriology; and assured high-quality, supervised drug treatment with recording, reporting and evaluation. But in addition to this, TB control programs must link to HIV control, support strengthened health systems, prevent and manage drug resistance, engage private as well as public health workers and support patients and communities.

In 2006, recognizing the need to reach the most vulnerable populations in order to hasten a decline in incidence, the STOP TB partnership established a task force to consider the ethics of TB care and control. The resulting document entitled Guidance on the Ethics of Tuberculosis Care and Control (8) focuses on the socio-economic factors of poverty, malnutrition, lack of education, poor housing and sanitation and the catastrophic costs of seeking care. These ethical guidelines speak to the right of all persons to access high-quality, low-cost TB diagnosis and curative treatment. They call for a multi-dimensional approach in order to mitigate socio-economic impediments to TB care. The document is essential reading for all TB control program directors and their ministries, and should be a catalyst for change.

The ethics guidelines, while exhorting patient adherence, demand that programs accept the reciprocal responsibility to fund resources which will enable the patient to comply. Directly Observed Therapy (DOT) is not the salvation of tuberculosis control unless it employs sensitive, skilled workers who create quality relationships with patients. Even a program as simple as Directly Observed Therapy, short course (DOTS) can be done poorly. Orr regrets the dearth of literature addressing the broader determinants of health – poverty, education and household crowding – even though these determinants have long been recognized as the major co-factors in aggravating the transmission of disease, delay in diagnosis and assurance of cures.

The Canadian TB Standards referred to by Orr (9) is a superb document that is current, detailed and well-referenced in all aspects of TB control, including interventions which may improve adherence. But since health is a provincial and territorial matter in Canada, the responsibility for providing resources to achieve these standards, and in particular to provide reciprocal patient support, is diffuse and devoid of accountability.

Recent literature has acknowledged the link between TB incidence and indicators which reflect improved social determinants (10,11). Oxlade et al. (10), in a study of 165 countries, showed that each 1-year increase in life expectancy was associated with a 7.8/10^5 decline in TB incidence, and each 1/1000 decrease in child mortality was associated with a 1/10^5 decrease in TB incidence. Only in countries with a low prevalence of HIV was the TB treatment success rate associated with a 1/10^5 decrease in TB incidence. Similarly, Dye et al. (11) showed a faster decline in TB rates in high-income countries (-3.9%), and a more rapid decline of TB incidence in countries with high Human Development Index (HDI) scores and lower rates of child mortality. The only region where the decline of TB incidence was linked to a TB program (in this case, through an increased detection rate of smear-positive cases) was in South America. Both of these large epidemiologic studies suggest that falling rates of TB are more strongly tied to social determinants than to TB programs. DOTS is essential to TB control, but clearly not sufficient.
The *IJCH* is to be congratulated for revisiting a disease which was tackled effectively in the North with strong TB control programs during the 1950s. Political will assured that these programs were sustained, and incidence rates tumbled (12). But if tuberculosis is neglected it will come back, as it has in Canada’s North. The challenges to TB control must be met with renewed vigour. But even the DOTS strategy will fail without the engagement of Indigenous communities, as in the participatory style of Larcombe – and, most importantly, it will fail if it does not finally address the long-ignored social determinants of health.

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