Physician experience, public health and the management of tuberculosis

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In this issue Khan and colleagues provide evidence for the positive influence of physician experience (a medical proxy) and directly observed treatment (a public health proxy) on the survival of patients with active tuberculosis in Toronto.[1] Although these conclusions are not particularly surprising, it would be an unfortunate presumption to dismiss their findings as unimportant or to fail to seize the opportunity they present.

Over the past half century, tuberculosis in Canada has been retreating into demographically and geographically distinct groups. Increasingly it is an urban disease of immigrants. In 2004, 66% of all cases were reported from the 11 urban centres with populations of 500 000 or more: Calgary, Durham Region (Ont.), Edmonton, Hamilton, Montréal, Ottawa, Peel Region (Ont.), Toronto, Vancouver, Winnipeg and York Region (Ont.). Of these patients, most were foreign-born.[2] Otherwise, tuberculosis in Canada is a disease of Aboriginal people (particularly those in western Canada and the territories), elderly people and groups of inner-city poor and homeless people.

Between 1970 and 2004 the proportion of all patients with tuberculosis in Canada who were reported as being foreign-born at the time of diagnosis increased from 18% to 68%. This major epidemiologic shift has altered the complexity of tuberculosis case management. Patients born in foreign countries pose linguistic and cultural challenges, are often mobile (they may move from one city to another or make trips to their country of origin), may have health care determents, may lack knowledge of the Canadian health care system, may resist presentation out of fear of deportation and may be at increased risk of disease due to drug-resistant strains.[3] Serious comorbidities such as HIV infection (8.7% of new adult tuberculosis cases in Canada in 2004 were estimated to have HIV co-infection),[4] dialysis-dependent renal failure, immunosuppressant drug treatment and substance abuse may contribute to the progression of latent tuberculosis infection to active disease and may complicate tuberculosis drug therapy. Although the incidence of tuberculosis in Canada decreased on average 2.4% each year between 1992 and 2002,[5] the problems inherent in carrying a patient to cure did not decrease.

Treatment of tuberculosis presents a daunting list of challenges: to properly assess tuberculosis in all of its expressions, to judge the infection control and occupational health risk, to prescribe in proper dose and duration a curative regimen of antituberculosis drugs while ensuring patient safety (avoidance of drug-related organ dysfunction or drug interaction), to respond appropriately to drug intolerance and drug resistance, to assess treatment response and to be able and willing to interact on a regular basis with the public health department or laboratory. Yet there is no "certificate of competence" that qualifies one physician over another to manage this disease. Internists and pediatricians with subspecialty training in respirology or infectious diseases are expected to have the necessary education and experience. But some of these physicians may not have these attributes, whereas others, including internists, pediatricians and family physicians without subspecialty training, may have them. Most physicians working to control tuberculosis share a high level of interest and commitment to the understanding of this disease (often gained through international experience) and a transparent social conscience. Patients simply cannot be viewed as "clients" in the medical market place.

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It is legitimate to ask whether the traditional concept of scope of practice sufficiently meets the needs of tuberculosis control. Physicians treating tuberculosis today are expected to operate within a wide array of non-licensure–based practice parameters, such as a public health framework, the International Standards for Tuberculosis Care,[6] the Canadian Tuberculosis Standards,[7] the Patient's Charter for Tuberculosis Care[8] along with local guidelines (e.g., the Ontario Tuberculosis Protocol).[9]

As important as it is for experienced physicians to manage tuberculosis cases, it would be a mistake to exclude the referring physician from the management process (assuming they are not the experienced tuberculosis physician). The referring physician often knows both the patient and community best and may be able to broker the linguistic, cultural and compliance issues that confound the protracted and often problematic course of treatment. If each tuberculosis case is to be viewed as a "failure" of the system (theoretically tuberculosis is preventable), then each case must be used to educate. At every opportunity primary care physicians must be encouraged to consider preventive therapy in patients who have latent tuberculosis infection and risk factors for reactivation. They

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must consider in a timely manner the diagnosis of active disease in people whose epidemiologic risk factors, symptoms and radiographic abnormality "line up." With 662 tuberculosis cases and 10 439 licensed family practitioners in Ontario in 2004 (source: Ontario Physician Human Resources Data Centre [www.ophrdc.org]), a family practitioner may encounter a case of tuberculosis as infrequently as every 15 to 20 years — hardly enough to maintain vigilance. And yet they will likely encounter many patients with latent tuberculosis infection, some of whom are at high risk of progression to active disease and in need of preventive treatment of their infection.

The treatment of tuberculosis involves both medical (relief of symptoms and provision of cure) and public health (interruption of transmission and prevention of drug resistance) action. In all cases the public health department is ultimately responsible for ensuring that adequate, appropriate diagnostic and treatment services are available and for monitoring the results of therapy. Treatment is most successful within a comprehensive framework that addresses both clinical and social issues of relevance to the patient. It is essential that treatment be tailored and supervision be based on each patient's clinical and social circumstances (patient-centred care). Directly observed treatment, in which patients are observed to ingest each dose of antituberculosis medication, is a public health action aimed at improving treatment adherence. The positive influence of directly observed treatment in Toronto reported by Khan and colleagues,[1] visible testimony of public health's intercession on behalf of the patient, is instructive.

Tuberculosis clinics are important units of urban tuberculosis control, since they concentrate resources and offer a chance to interface with the community. Their cause received a tremendous boost when antituberculosis drugs were proven to render patients noninfectious, making prolonged inpatient sanatorium care unnecessary.[10–12] Early on they were organized and funded by volunteer organizations, but the best contemporary model would have such clinics integrated into provincial and regional public health systems. Such a model also sees each incident case of tuberculosis assigned a tuberculosis case manager, who coordinates the many activities and players involved in treatment and prevention. Within the provinces and territories clinics should be networked; electronic health records that feature a public health or communicable disease component will facilitate this process. The roles and responsibilities of physicians, regions, clinics and the province or territory regarding tuberculosis prevention and management should be defined by the public health department.

Courage and conviction are evident in the work of Khan and colleagues; they show a willingness to address sensitive issues and to challenge the status quo. Their article is a clarion call to duty to public health at the provincial, territorial and regional levels.

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