

Remove TB stigma to better fight the disease

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Tuberculosis, or TB for short, is an ancient disease of man caused by the bacterium *Mycobacterium tuberculosis*, first discovered in 1882 by the celebrated German microbiologist Robert Koch.

It is in many ways a slow infection. TB is typically spread by prolonged and close contact with a person with active pulmonary (lung) TB. The majority of infected persons clear the bacterium spontaneously, while a minority contain it without any outward manifestation of the disease. This is termed latent TB, which is non-infectious.

Only a minority of persons with latent TB progress to develop active symptomatic TB in their lifetime, usually months to years after the original exposure. Because the most common presenting symptom of active TB – coughing – is shared by many other viral and bacterial infections, the disease is

often diagnosed late, giving the bacterium further opportunity to spread despite its relative inefficiency at doing so.

Singapore has been a model for TB control, reducing the incidence of this contagious airborne disease almost tenfold between 1960 and the mid-2000s. However, the local burden of disease remains significant, with 1,498 newly diagnosed cases of active TB among Singapore residents last year. The challenges of maintaining and improving on past results are manifold, and include ensuring that persons with active TB complete a protracted (usually six months) course of a cocktail of anti-TB drugs, as well as improving on contact investigations – a process to identify persons who have been exposed to the TB germ and are at high risk of infection.

Comprehensive contact investigation helps prevent further spread of TB by offering a window of opportunity for preventive treatment of infected individuals prior to the development of active contagious TB. However, the public fear and stigma of TB in Singapore

has not fallen to the extent that persons with active TB infection will divulge their close contacts or voluntarily ask these people to go for TB screening for fear of being identified and stigmatised.

Multidrug-resistant TB (MDR-TB) is a term used to describe a drug-resistant form of the infection where the two “backbone” drugs of the anti-TB cocktail – isoniazid and rifampicin – are no longer effective against the bacterium. The phenomenon of MDR-TB did not arise spontaneously, but is a consequence of numerous instances of incomplete adherence to TB treatment, facilitated in several parts of the world by the rising HIV epidemic in the 1980s to 90s.

MDR-TB compounds the challenges of TB control drastically. Treatment of active MDR-TB infection results in lower success rates compared with drug-susceptible TB despite a treatment regimen that is more toxic, costly and which takes twice as long to complete. For persons with latent MDR-TB infection, there is also insufficient evidence

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that preventive treatment is effective. Singapore is fortunate in that our MDR-TB rates have remained low, at less than 1 per cent of all TB cases last year. The majority of our MDR-TB cases are imported, with no reported subsequent secondary infections locally.

Given what we know of TB, the recent cluster of cases at a Housing Board block in Ang Mo Kio is unique for several reasons. Firstly, it is MDR-TB, which escalates the stakes for prevention of further transmission. Secondly, the infected persons appear not to have any focal point of prolonged close proximity usually necessary for the transmission of TB.

Many would presume that the TB transmission occurred in common lifts or because of the “crowded” living conditions in an HDB block. However, if such assumptions are true, we would have seen more reported TB case clusters in apartment blocks previously. Yet, according to the Singapore Tuberculosis Elimination Programme’s registry, with the exception of case clusters within a

single household, less than 2 per cent of TB clusters (defined via molecular fingerprinting of the bacterium) over the past 10 years actually share identical housing block addresses. That living in the same apartment block is not a risk factor for the spread of TB is also borne out by international experience.

Moving forward, the unique features of this Ang Mo Kio MDR-TB cluster warrant more detailed and extensive investigation in order to determine how it has occurred as well as to identify others who may have been infected.

We need better public education and communication to increase awareness of TB, and remove the stigma from TB, which in turn will lead to better contact investigations and reduction of the spread of the bacterium. Better community support, especially from employers, will be welcome and will help improve treatment adherence of patients on anti-TB therapy, which will reduce the risk of the emergence of drug resistance.

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