Stopping the body count: a comprehensive approach to move towards zero tuberculosis deaths

Tuberculosis has been a curable disease since the 1950s. In the more than six decades since then, knowledge has been amassed about how to ameliorate its social causes, prevent its transmission, and treat both its clinical and quiescent forms.[1,2] In many high-income settings, this knowledge has been used with great success. Elsewhere, this is far from the case: more than 4000 people die from this curable and preventable airborne disease each day, mostly in low-income and middle-income settings.[3] Distressed by the status quo, in 2012 more than 500 scientists, policy makers, and advocates from around the world signed the Zero TB Declaration, which called for "a new global attitude" in the fight against tuberculosis, and argued that, with the right set of interventions, the planet could move rapidly towards zero deaths from tuberculosis.[4]

Although tuberculosis incidence has declined over the past 25 years, it has done so at a glacial pace of about 1·65% annually.[5] At this rate, it will take another two centuries to eliminate the disease.[5] This reality reflects the limited set of interventions recommended for, and implemented in, low-income and middle-income settings, a shadow of the comprehensive set of strategies that has brought the tuberculosis epidemic to heel in other places.[1,2] Rather than aggressively finding all cases of tuberculosis, preventing the disease in those at highest risk, and focusing on populations and places of highest transmission, most low-income and middle-income settings have focused narrowly on the diagnosis and treatment of those patients with tuberculosis who manage to access care on their own. An over-reliance on standardised treatment and sputum smear microscopy—a low-sensitivity visual diagnostic test that cannot determine drug resistance—has sidelined not only individuals whose illness is characterised by a lower bacillary load, such as children and individuals with HIV, but also those with extrapulmonary or drug-resistant tuberculosis.[6] Early detection and treatment of both active disease and quiescent (so-called latent) infection, along with efforts to control transmission in health-care and congregate settings, have been belatedly recommended for some groups in limited settings, but have yet to be widely scaled up.[7] Much of the policy framing to date has been driven by concerns over cost, which has overridden both the scientific and moral imperatives to implement proven interventions that could inflect the global tuberculosis curve more rapidly.[6–8]

Although standardisation of treatment contributed to improved clinical outcomes for some people with tuberculosis, the absence of a comprehensive approach for fighting tuberculosis in high-burden settings has led to predictable and alarming results.[3,9,10] At least 9 million people fall sick from tuberculosis every year, including 1 million children.[3,11] More than 3 million patients with tuberculosis remain undetected and continue to transmit the disease in their families and communities. Appropriate treatment for drug-resistant tuberculosis remains the exception rather than the rule, allowing further transmission of these strains. Most known contacts receive no post-exposure therapy, a standard intervention in most high-income settings. Finally, and most damning of all, almost 1·5 million people still die each year from tuberculosis—a preventable and curable disease.[3]

Ending the tuberculosis epidemic requires the urgent deployment of a comprehensive package of effective, tried and tested interventions in low-income and middle-income settings. This comprehensive approach must happen in tandem with the development of effective point-of-care diagnostics, highly effective and shorter

A mother and child who both have multidrug-resistant tuberculosis at a clinic in Nairobi, Kenya, in March, 2015

treatment regimens, and vaccines. The *Lancet* Series on how to eliminate tuberculosis[12–15] reviews a set of proven epidemic-control strategies for combating the disease. Their wider and more systematic application, evidence suggests, will result in quantitatively greater and more rapid progress in tackling the global tuberculosis epidemic.[1,2,16–22] These strategies include: stopping transmission through active identification of sick patients and prompt initiation of the correct therapy; treating infection in close contacts and high-risk individuals; using data from tuberculosis programmes to improve use of current resources and to better target interventions; and addressing some of the social mechanisms that fuel tuberculosis. Each Series paper presents examples of places where these epidemic-control strategies have been successfully used, as well as practical recommendations for implementation. Separately, the effect of these approaches might be modest; in combination, however, global experience and mathematical modelling suggest that they will have a swift and dramatic effect on tuberculosis incidence and mortality.[1,2]

The goals laid out in both the Stop TB Partnership's Global Plan to Stop TB 2016–2020[23] and WHO's End TB Strategy[24] will require "a new global attitude" in the fight against tuberculosis.[4] Part of that shift means moving beyond piecemeal approaches, and deploying a comprehensive epidemic-control strategy that has been shown to work. Beyond courage and vision, the success of this approach will depend on an unwavering commitment to programmatic quality, fidelity, and equity, with all the methods required to stop an airborne epidemic being used at the same time. Moreover, all people who require treatment must be included in this comprehensive approach: children, people with drug-resistant strains, individuals with extrapulmonary disease, those co-infected with HIV, others at high risk of acquiring the disease, and infected contacts. Failure to seize this opportunity now will constitute both a scientific and moral failure. Waiting another two centuries for a curable and preventable disease to disappear is not an option.

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