Modelling tuberculosis control priorities: more of the same will not do

In The Lancet Global Health, Juan F Vesga and colleagues1 reported on their assessment of tuberculosis control priorities in high-burden settings using a robust and well accepted modelling approach with a focus on what can be achieved by strengthening the tuberculosis cascade of care. The authors concluded that closing gaps and decreasing delays in the cascade of care will be valuable for improving patient outcomes and identifying programmatic priorities, and although their results were robust, their assumptions on the extent of reductions in gaps in the cascade of care were unrealistic. Their findings show that strengthening the tuberculosis cascade of care will be insufficient to achieve the End TB Strategy targets within this generation or the next, regardless of whether the challenges are a dysfunctional private sector, HIV coinfection, or multi-drug-resistant tuberculosis.

The validity of modelling findings is entirely dependent on the robustness of the underlying assumptions,2 but Vesga and colleagues assumed that a sequence of gaps in the tuberculosis cascade of care can all be reduced to 5% and delays shortened by 25%. Although the assumed shortening of delays might be possible, reducing all cascade gaps to 5% would be extremely challenging. We are not aware of any published literature on any programme that was able to achieve these improvements, other than the accompanying Comment by Ritta A Dlodlo and Einar Heldal3 stating it should be feasible. Nevertheless, modelling such extreme improvements can provide some clarity. Let us say that all gaps could be reduced to 5% even in the low-resource high-incidence settings in focus in the Article, what outcomes can be achieved? Reductions in the incidence of tuberculosis incidence of 27–38% by 2035 were predicted, and mortality reductions of 52–77%, with pre-elimination targets met by around 2100.4 Similarly modest improvements in disease burden in Fiji have been predicted with a set of interventions intended to capture a realistic scenario.4

So although the current modelling study is impressive in showing the valuable effect of strengthening the tuberculosis cascade of care, the proper interpretation must be that an exclusive focus on the tuberculosis cascade of care is likely to be inadequate, and does not hold great promise for reducing tuberculosis burden, even if extremely comprehensive interventions are applied. Instead, we believe perspectives should be expanded to the entire cascade of tuberculosis pathogenesis, including the possibilities of breaking the transmission cycle between the points of transmission and reactivation with preventive interventions, which holds great promise for reducing tuberculosis burden.5 In particular, previous modelling suggested that preventive treatment would remain efficient in high transmission settings, where it is doubtlessly most needed.6

We declare no competing interests.

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