

Tuberculosis—getting to zero

Reviewing research *The Lancet* has published on the global tuberculosis epidemic, one will be struck by how little the situation has changed over the years, and how the same calls to action get repeated from one year to the next. For decades, a piecemeal approach with a narrow treatment focus and a cost imperative has prevailed. The result? A global epidemic of disease. For more than a decade the global tuberculosis incidence rate has declined, but only slowly by about 1.65% annually.^{1,2} Meanwhile, the worst legacy of this disease has become multidrug resistance.³ The *Lancet* Series on how to eliminate tuberculosis⁴⁻⁷ is a response to the fact that business as usual can no longer be an option in the fight against tuberculosis.

This latest *Lancet* Series is led by Salmaan Keshavjee, from Harvard Medical School's Department of Global Health and Social Medicine. He helped bring together researchers and advocates to answer an urgent question: how do we translate existing knowledge, strategies, and approaches into effective programmatic interventions in the communities most afflicted by tuberculosis? His group decided on a goal—to work towards achieving zero deaths from tuberculosis, and to create a scientifically based roadmap outlining the steps that would need to be taken to reach this goal.

Four Series papers⁴⁻⁷ describe the scientific underpinnings of this roadmap and address changes in the current strategy that will be necessary to achieve zero deaths from tuberculosis, and to reach 2050 elimination targets in high-burden settings.⁸ The authors repackage current interventions into a comprehensive epidemic-control strategy that consists of targeting local hotspots of transmission, active case-finding, initiating the correct therapy promptly, and preventing future transmission by treating high-risk individuals and contacts of affected individuals.

Interestingly, most of the data in this Series are not new. Despite their imperfections, the tuberculosis strategies and interventions described have brought down the epidemic in several different settings, from Karachi in Pakistan to New York City in the USA. Furthermore, a comprehensive approach is already being used successfully to tackle HIV/AIDS and malaria. So clearly something has gone wrong for tuberculosis, where comprehensive approaches have not been applied consistently and to scale. Countries are not getting the

message that this approach should be taken and donors are also not insisting upon it. Often the message is that tuberculosis is too complex, or that newer technologies are needed. But as this Series shows, there is no reason not to use existing interventions that do work and can stop the epidemic. Despite the evidence, there is a gap between data and implementation. The policy and implementation frameworks that have been adopted in the past decades have just not worked.

There needs to be a change in mindset. Perhaps this transformation needs to come from countries themselves, especially those which have their own resources, such as Brazil, Russia, India, and China. Given the huge economic burden that tuberculosis has exacted on patients and their families,^{7,9} countries should recognise that using a comprehensive approach will be good for the economy. Tuberculosis is an airborne disease. Treating only the most infectious individuals with active disease, which is mainly the current approach, and not those in the latent phase who continue to transmit the disease is bad epidemic control. There is no disease in history that has been stopped without treating the latent phase, from yaws to malaria.

This Series will be used to create a strategy to combat tuberculosis in cities. The Zero TB Cities Project is a new initiative formed in 2014 that will commit to a comprehensive tuberculosis elimination strategy, be it in a large metropolitan conurbation, a small island, or an isolated community. Key partners will be municipalities and local governments that have their own resources



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For the Zero TB Cities Project see <http://www.advanceaccessanddelivery.org/overview/>



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and can be more responsive to their populations than central government. The Zero TB Cities Project will provide independent funding in addition to country resources. Chennai in India and Lima in Peru are the first cities to take part and progress will be assessed at 3-year intervals. The goal is to help communities move to zero deaths from tuberculosis in their own way, and create “islands of elimination”, which will hopefully reverse the overall tuberculosis epidemic.

The final Series paper by Katrina Ortblad and colleagues⁷ reminds us that tuberculosis is the quintessential disease of poverty in modern times. It is a result of poverty and is itself a driver of poverty. To date, interventions to tackle tuberculosis have largely been biomedical. But other risk factors, such as malnutrition, overcrowding, and poor health services, also need to be addressed. The Sustainable Development Goals offer an opportunity to rethink the fight against tuberculosis and to move to a more biosocial model that focuses not only on supply side interventions but also on demand side interventions at the individual level—for example, cash transfers and microcredit—to address the social determinants of this disease.

This *Lancet* Series is launched at the inauguration of the Harvard Medical School Center for Global Health Delivery—Dubai. The aim of this new centre is to promote research that will address the health delivery gap. Tuberculosis will be one of the disease areas of

focus. We hope this Series will be a springboard that can help shift the global tuberculosis epidemic from incremental annual improvements to an accelerating global movement for tuberculosis elimination.

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For the Harvard Medical School
 Center for Global Health
 Delivery—Dubai see
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Will Public Health England lead research?

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Between 1990 and 2013, mortality rates in southeast regions of England fell below those of 18 comparison countries, whereas mortality rates in Scotland and Northern Ireland remained higher than all comparison countries except the USA. This headline can be gleaned from today’s detailed report by Public Health England (PHE) and the Global Burden of Disease study (GBD) in *The Lancet*.¹ There are some caveats: analysis by region for the other 18 countries would also show a range around the national average; and the differences in mortality were greater for men than for women. England has lower mortality rates from self-harm and road injury, but higher rates of liver disease and mental disorders related to alcohol misuse, compared with the other countries. Regional mortality rates in England correlate closely with the national index of deprivation (the components of

which are chosen to amplify such variation), yet many non-fatal causes of disability, including low back and neck pain, anxiety disorders, sense-organ diseases, and breast cancer, show little regional variation. With the lengthening life-span of the population, overall levels of disability also remained broadly unchanged, indicating the continued necessity for health care.

Welcomed by *The Lancet*,² the UK Department of Health in 2013 drew on the GBD study data for the new preventive health strategy for England, *Living Well for Longer*.³ The strategy set a political “ambition for England to have amongst the lowest rates of premature mortality in Europe” but focused on cancer, heart, stroke, respiratory, and liver disease; the existing low rates for injuries and self-harm and the prevalence of disabilities are not mentioned. Yet in