

backgrounds. Despite this need for understanding the inter-relationship of co-morbidities, interventional research studies often exclude the majority of these individuals who are most at risk. This includes pregnant women and children, and persons with diabetes and HIV infection. Often-insufficient demographic information is captured to analyse the effect of contextual factors such as alcohol abuse, smoke exposure, and nutritional deficiencies on research outcomes. If taken into account, an integrated treatment approach addressing nutritional, behavioural and social interventions together with the new technology could then be assessed.

New technology alone cannot solve the TB epidemic. Innovative, integrated and community-driven solutions, which apply a primary health care approach, and are not purely based on technological innovation, will be required to stop the persistence of TB.



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Without societal, lifestyle and dietary innovations, new technologies will be ineffectual in stopping tuberculosis <http://ow.ly/IgY3303bgdU>

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From the authors:

P.H. Mason and colleagues highlight the fact that “new technology alone cannot solve the [tuberculosis] epidemic” and that integrated and community-driven solutions are needed to meet tuberculosis (TB) care and treatment goals. The authors highlight an example of community-wide screening using portable radiography in the pre-antibiotic treatment era, with patients being prescribed rest, diet, exercise and fresh air, leading to a reduction in TB prevalence in the intervention area. We concur with the authors’ view that a focus purely on introducing new technologies, be they diagnostics, drugs or vaccines, will not have the desired impact on patient outcomes or public health. In our article, we put forward the proposition that a holistic solution is needed to ensure adequate impact of new diagnostics on patient-important outcomes [1]. For TB patients, especially those with multidrug-resistant disease, who require extremely long and arduous treatment regimens, social support, adequate diet and management of other pre-existing conditions, are essential components of a patient’s care, without which patients are unlikely to be successfully treated.

This view is also clearly reflected in the World Health Organization (WHO) End TB strategy [2] pillars: 1) integrated care and prevention (which includes treatment of comorbidities), 2) bold policies and support systems (including social protection, poverty alleviation and actions on other determinants of TB), and 3) intensified research and innovation. Importantly, intensified research and innovation encompasses development of new technologies including drugs, vaccines and diagnostics, but also innovations in implementation to optimise impact. Indeed, the WHO End TB strategy targets for decline in global TB incidence rely on the introduction of new tools, including a point-of-care test for active TB and latent TB infection, by 2025, without which global targets will remain unmet [2].

However, the continued focus on development of new tools should be matched by an equally vigorous drive towards innovation in implementation, with a strong focus on providing patient-centred care. Implementation research must address how novel diagnostics can be better integrated into healthcare



systems. We would contend that innovation in patient care and technology-driven solutions need not be mutually exclusive. Many examples describing the use of technology, particularly “electronic health”, in supporting patients during care and treatment exist [3], and we would advocate for combining the benefits of new technologies with an increased awareness of the importance of social and lifestyle factors in patient management. Finally, the example of the chest radiography screening programme provided by P.H. Mason and colleagues also highlights the fact that appropriate patient management, whether treatment, dietary interventions or social support, requires accurate and timely diagnosis as an essential first step.



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Complementary innovations in patient support and technology solutions are needed to end TB

<http://ow.ly/aUrC304opl8>

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