



Improving quality is necessary to building a TB-free world: Lancet Commission on Tuberculosis



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ABSTRACT

The Lancet Commission on Tuberculosis (TB) set out to establish a roadmap for how high burden countries could get on track to meet the goals established by the UN High Level Meeting (UNHLM) in September 2018. The report sought to answer the question “How should TB high-burden countries and their development partners target their future investments to ensure that ending TB is achieved?” It provides a comprehensive analysis and specific recommendations to address this question and, ultimately, remove the barriers to building a TB-free World. Notably, the report highlights the importance of improving the quality of care as an essential component of ending the epidemic. Strategies for improving quality must be hard-wired into how National TB Programs are organized, to ensure greater equity in TB service provision and implementation of evidence-based practices and clinical guidelines. Investing in TB research and development, especially implementation, policy and programmatic research to determine how to deliver high quality care must also be high priority. In addition, improving the quality of TB programs is contingent on strategies that enhance accountability at all levels, from the level of Head of State to the local TB clinics. To this end it is essential that TB survivors and their advocates have a voice to raise inconvenient truths and demand improvements in quality. The Commission concludes that the prospect of a TB-free world is a realistic objective that can be achieved with the right commitment of leadership and resources but will only be realized as and when quality of care is prioritized as a central tenet of all TB programs.

1. Introductions

In March 2019, the Lancet Commission on Tuberculosis [1] was published to provide a roadmap for how high burden countries and their donor partners could steer a path towards a TB-free world. Building on the momentum of the UN High Level Meeting (HLM) on Tuberculosis six months earlier, the Commission highlights the critical importance of *improving the quality* of TB care as essential to achieving the targets outlined at the HLM.

While most high TB burden countries have focused on expanding coverage of directly observed therapy, short course (DOTS) over the last quarter century, few have sought to evaluate or address the quality of TB care offered [2]. Nonetheless, increasing evidence highlights the importance of improving the *quality* of TB care at healthcare facilities [2–6]. High quality TB care is defined as care that is patient-centric, consistent with international standards and delivered in an accessible, timely, safe, effective and equitable manner [2]. To achieve the UN HLM targets, delivering high quality care must be a central focus across the health system, but especially at the facility level.

2. Reasons for poor quality care

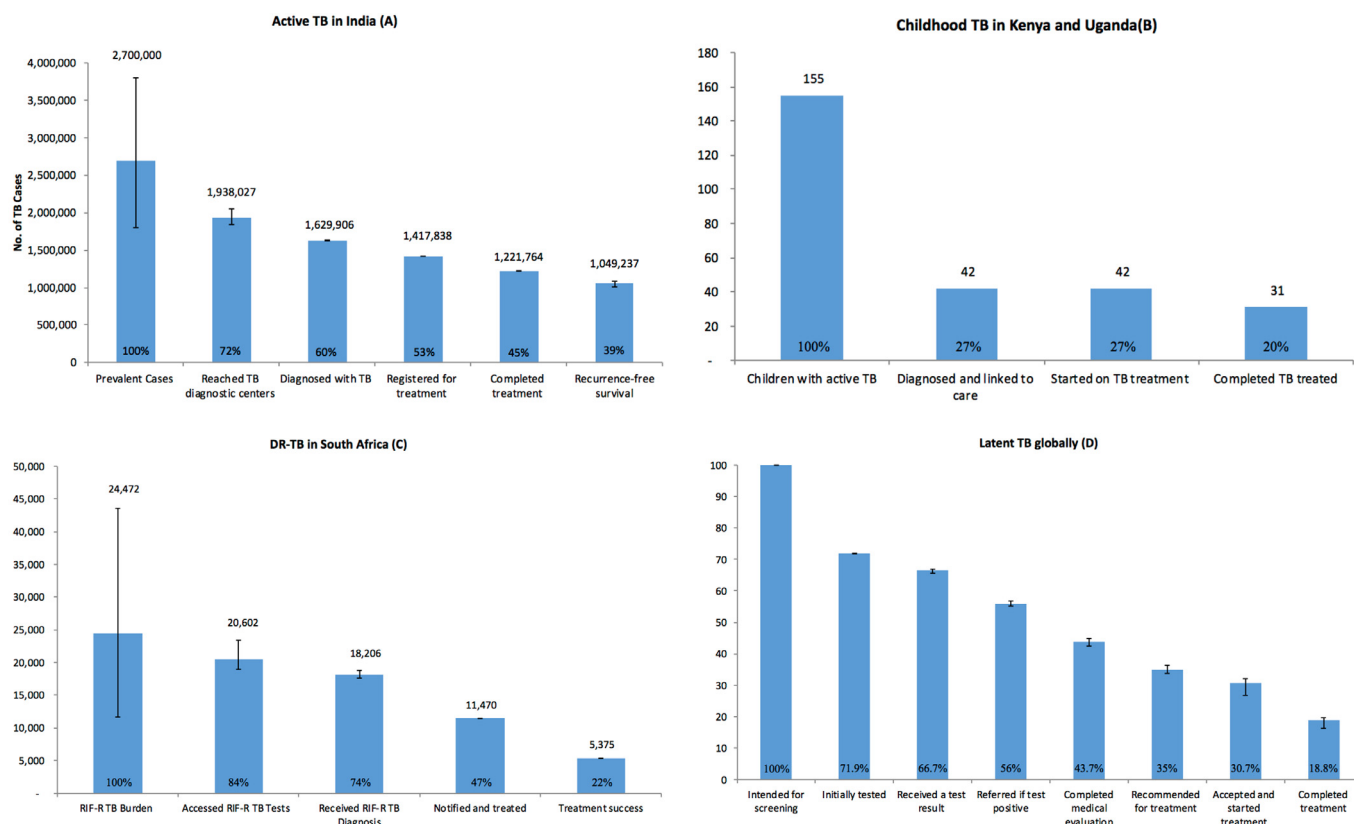
There is substantial evidence that there are big gaps in TB care continua in many high burden countries, in both public and private sector [2,3], and in the management of both adults [7] and children [4] with TB (Fig. 1). Numerous studies have highlighted substantial gaps in the TB care continuum for all forms of TB cases: active disease, DR-TB, latent infection, and childhood TB [2–4,8,9]. Furthermore, simulated patient studies in three countries show that most primary care providers are unable to diagnose TB and referral linkages to the National TB Programme (NTP) are weak. In India, China and Kenya, only 28% to 45% of simulation patients were correctly managed by primary care providers [10–12].

In addition, research on the *process* of care demonstrate that TB patients often endure long diagnostic delays, with significant losses to follow-up in many high burden settings [13,14]. The care quality is especially poor for drug-resistant TB; less than one in five MDR-TB patients complete the cascade of care, globally [15]. Children are also at risk from low quality care; a recent study in Uganda and Kenya demonstrated that up to 80% of children fell out of the care continuum [4]. The consequences of low quality care are obvious: high care costs, treatment delays, increased drug resistance, morbidity, mortality and

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Source: (A) Subbaraman et al (2016) (B) Mwangwa (2017) (C) Naidoo et al (2017) (D) Alsdurf H et al, 2016 [this cascade includes data from 57 research studies evaluating TB

Fig. 1. TB cascades of care.

Source: (A) Subbaraman et al (2016) (B) Mwangwa (2017) (C) Naidoo et al (2017) (D) Alsdurf H et al, 2016 [this cascade includes data from 57 research studies evaluating TB

ongoing TB transmission [6].

Reasons for poor quality are numerous, and as Fig. 2 illustrates. More emphasis is needed to improve links between clinical and laboratory service delivery points and to strengthen the capacity of TB care providers throughout the health system. Enhanced integration at every level of the health system is necessary to ensure TB patients are promptly diagnosed and initiated on effective treatment. Furthermore, huge opportunities exist to improve quality when first-contact care for TB patients occurs outside of the TB system, in general clinics, dispensaries and in the informal setting. Systematic reviews of care costs [16], surveys on implementation of TB policies [17], and market analyses of access to new TB tools [18,19], WHO TB financing infrastructure and outcomes [20] also confirm that a primary driver of inferior quality is under-funding of national TB programs, and inadequate implementation of system-wide evidence-based policies. The public health implications, as well as the poor clinical and financial implications [21] for patients, are self-evident. Substantially reducing TB mortality and incidence will require significantly increasing both the coverage and the quality of TB services across the entire care continuum.

3. Improving quality: Integrating quality management into TB programs

In addition to greater investment in all aspects of TB programming is necessary, the Lancet Commission on TB argued that TB programs must start to systematically analyze gaps in their care cascades, especially at facility and district level, and work towards measuring and incorporating quality of care indicators into all aspects of TB care provision [2]. This can be achieved using a quality improvement (QI)

framework which provides a proven, effective way to improve care for patients and improve practice of health care providers [22]. Applied to closing gaps in the care continuum, quality improvements principles can support greater equity, enhance TB-related health and socio-economic outcomes and ensure programs adhere to evidence-based practices and clinical guidelines. The use of QI tools and approaches can be applied not only to clinical care systems but also public health programs and be useful in reducing waste due to inefficiencies in poor service delivery, lack of coordination among health services, improper diagnosis of patients or delayed diagnosis. As has been demonstrated across HIV programs in sub Saharan Africa and Asia, QI also has the potential to optimize the use of limited resources available from governments and donor agencies, reducing poverty and actualizing social justice [23,24]. QI methodologies must be embedded, not just in NTPs but across the wider health system, and deployed as a catalyst to drive progress towards UHC in other health sector dimensions.

For TB programs to be strengthened by QI, it must ultimately be built into existing policies and infrastructure; it must become part of the fabric of care itself, not separated as a standalone initiative. WHO and international partners can play a vital role in advocating for use of QI and/or linking funding to quality performance measures. Demonstrable improvements in TB outcomes may also encourage greater investments in health systems by increasing donor, population and government confidence that resources are being well used [23].

Building the capacity of NTPs to improve the quality of TB services is essential to combating the TB epidemic. It has been an integral component of the HIV response in sub Saharan Africa [25] and has been recognized as a crucial component of strategic planning in President's Emergency Plan for AIDS Relief-supported countries [26,27]. Recent research in Uganda demonstrates the utility of this strategy to close

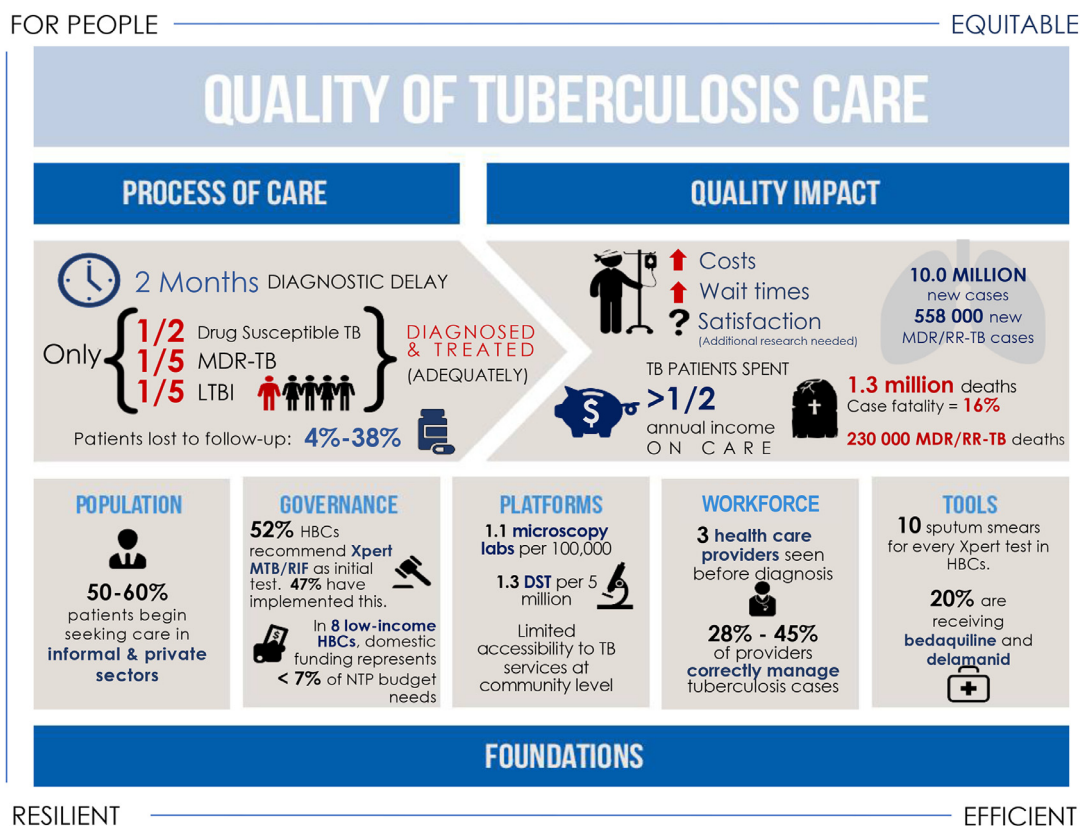


Fig. 2. Dimensions of quality of TB care, and barriers that undermine optimal service quality.

Notes: Data cited above listed by category: Populations: Chin, D et al, (2017). Governance: Out of Step, Stop TB Partnership (2017), Stop TB Partnership (2014). Platforms: WHO (2014); Huddart, S et al (2016). Providers: Sreeramareddy, C. T., (2014); Das, J (2015); Daniels, B (2017); Sylvia, S (2017). Tools: Cazabon, D (2017); Pai, M (2017). Processes of Care: Sreeramareddy, C. T (2009); Subbaraman, R., (2016); Naidoo, P (2017); Alsdurf, H (2016); MacPherson, P., (2014). Quality Impact: Tanimura, T (2014); Onyeonoro, U. U., (2015); Naidoo, P (2015). Health Outcomes: WHO (2018)

huge gaps in the care continuum, with only 33% of patients getting diagnosed and treated. To address these drop-outs during the cascade of TB care, Shete et al. evaluated the feasibility of a streamlined strategy called SIMPLE for improving TB diagnostic evaluation and treatment initiation among patients with presumed TB [28]. The SIMPLE strategy was developed using theory-informed design that accounted for predisposing, reinforcing and enabling factors, and sought to improve service quality while also improving efficient use of diagnostic resources. Despite this successful example, most NTPs do not have QI as an integral component. Nonetheless, some are starting to pilot QI programs in the public sector, notably South Africa [29]. QI programs have also been attempted in the public sector as implementation research projects [28], and included in private sector engagement projects in India with success [30,31]. In general, these QI pilots have tried to improve the cascade of care by addressing key gaps in healthcare facilities, some using a Plan Do Study Act (PDSA) cycle [32] to highlight where and how that quality of care can be improved.

4. Modeling impact of improving quality

What are the potential epidemiological implications of improving the quality of TB programs? Modelling analysis, commissioned for the Commission report, sheds light on the potential value of improving quality of care, as well as introducing high impact interventions to address country specific barriers to optimizing TB delivery in three archetypal countries: India (with a large private sector); Kenya (with HIV confection); and Moldova (with a high burden of MDR TB). As Fig. 3 illustrates optimizing the quality of TB programs, in addition to improving private sector engagement in India, access to antiretrovirals in Kenya and molecular diagnostics and second line drugs in Moldova,

could have substantial impacts on TB mortality. Moreover, QI interventions would not be hugely expensive, particularly when weighed against the profound economic costs of failing to act.

5. Improving quality: Need for a research agenda

Making the case for incorporating QI methods to improve TB programs involves generating a body of evidence that documents the potential benefits. Establishing a research agenda for scaling up QI methods in TB programs is therefore essential. In particular, implementation research is needed to understand how to improve care cascades, i.e., find patients earlier, evaluate them quickly, and provide effective treatment resulting in a cure [33]. Moreover, research to assess whether differentiated strategies for providing patient-centered care and supporting treatment adherence must be a high priority and should occur in tandem with research strategies focused on improving the quality of TB services [34–36].

As the Commission report highlights, the economic rationale pursuing such strategies is compelling. The potential economic value is illustrated by modelling analysis in three different country-settings –India, Kenya and Moldova, illustrated in Fig. 3, leveraging an approach where the value of lives lost prematurely was derived using value of statistical life estimates [37–39]. The value of the loss associated with TB mortality is, on average, \$32bn per year in India; \$2.7bn in Kenya; and \$35mn in Moldova. Weighed against these costs, the dividends of any investment in research to improve TB service quality are likely to be tremendous.

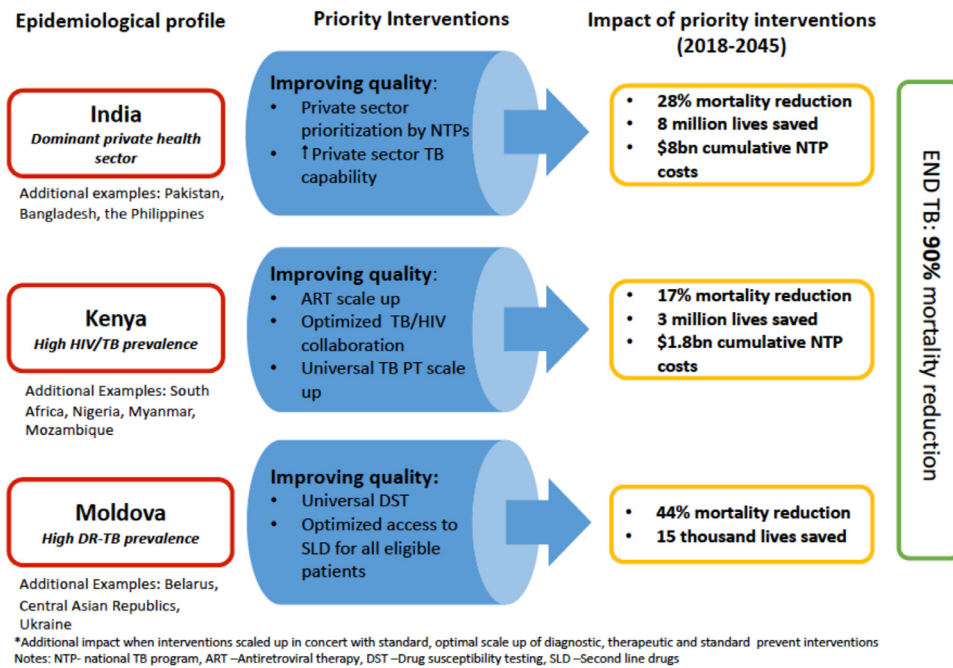


Fig. 3. Prioritizing policies to end TB, 2018–2045: Country case studies.

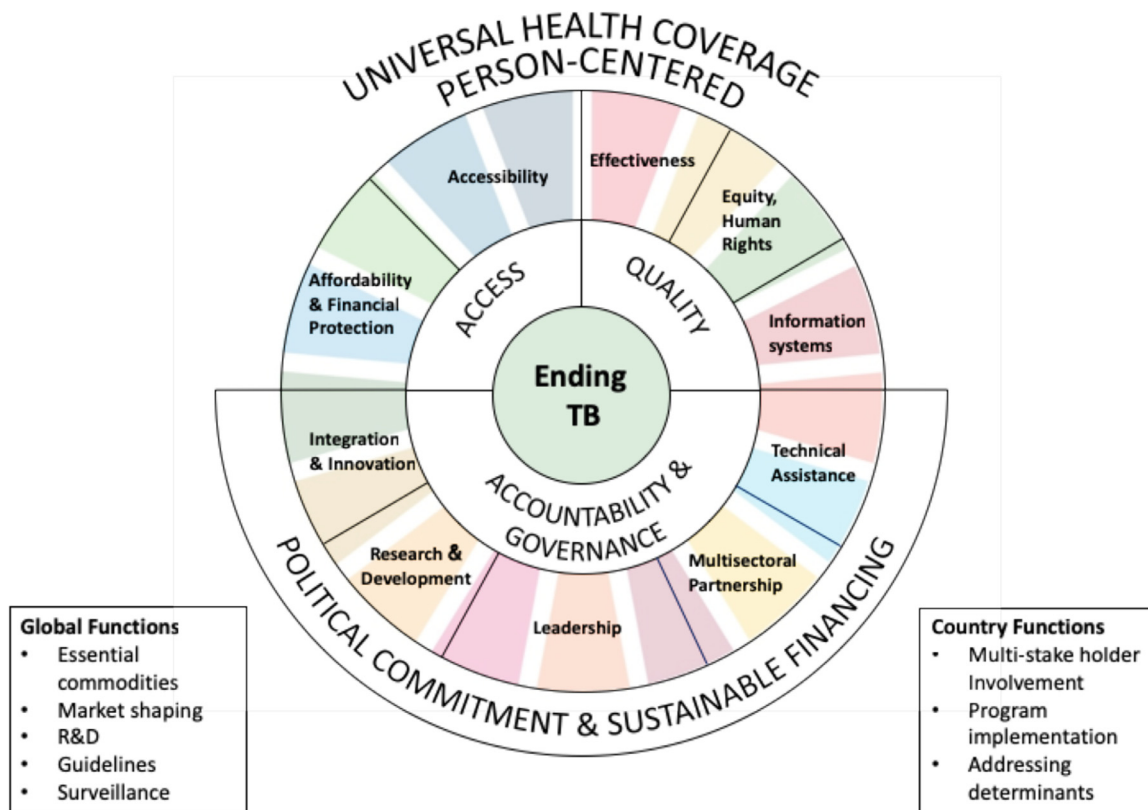


Fig. 4. Conceptual framework for ending TB, in the era of the sustainable development goals.

6. Next steps: Improving quality demands a multisectoral response

Fig. 4 provides a framework for operationalizing country-owned responses to drive progress towards ending TB and to leverage good practices in the TB response to advance other Sustainable Development Goals while ensuring that the quality of TB services is prioritized. This

framework represents an idealized response and illustrates mutually reinforcing functions performed by state and global actors. These functions are person-centered, rights-based, and data-informed. The priority is ensuring high quality care for persons with TB who present followed closely by a focus on active case-finding strategies and TB prevention interventions targeted at high-risk groups. A strong TB response needs to be guided by country-owned, multisector and multi-

stakeholder coordination, accountability and good governance at all levels to achieve sustained long-term efforts. Civil society is a vital constituency to ensure that TB programs and stakeholders are held accountable at global, national and subnational levels. In addition, the framework underscores the importance of addressing TB as a core component in achieving Universal Health Coverage (UHC). While countries are in varying stages of progress towards UHC, for high TB burden countries, prioritizing investments in TB to realize UHC will be critical.

Effective leadership at the National Tuberculosis Program (NTP) level is a critical element of a successful and coordinated TB response. Empowering NTP managers to take the necessary steps to institute effective strategies will require increased financing and recognition that NTP leaders must play an inter-sectoral, convening role with stakeholders of other government ministries, including finance, justice, labor, social welfare, housing, mining, and agriculture. It will also demand multisectoral accountability to ensure that TB programs are of the highest quality.

As the Lancet Commission on TB highlights, an important lesson from HIV/AIDS response is that partnering with stakeholders from the civil society and the private sector is necessary to enable social accountability to demand high quality programs. Civil society dramatically changed the global response to HIV/AIDS, making it a top priority at all levels and driving improvements in quality and uptake of evidence-informed interventions [40,41]. TB survivors and their advocates can play an essential role in creating incentives for political leaders to advocate for improvements in the quality of TB programs, by generating public support for those decisions, and in holding leaders and service providers accountable for how resources, commitments, and services are delivered.

7. Summary

In summary, the institution of structured QI programs as an integral part of all TB programs, supported by clear metrics that take into account setting-specific contexts is an essential pre-requisite of ensuring patient-centered programming and realizing a path towards ending TB. Promoting communities of practice through QI learning networks can also have important spillover impact on other clinical programs. At a global level, WHO can promote improved quality through providing quality indicators for reporting and supporting delivery of QI-specific technical assistance. As the Lancet Commission highlights, many countries – even many low- and middle-income countries – have demonstrated that that it is achievable, despite the limitations of existing tools. The prospect of a TB-free world is not a distant aspiration. It is a realistic objective that can be achieved with the right combination leadership and resources aligned with laser-focus on delivering high quality TB programs.

Ethical statement

This review article does not include any primary data collection or research that warranted Institutional Review Board review

Declaration of Competing Interest

We have no conflict of interests.

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