


## COVID-19 and Tuberculosis: Is It a Syndemic Situation?

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Dear Editor,

Prior to the coronavirus pandemic diagnosed in 2019 (COVID-19), there existed an epidemic of tuberculosis (TB), an ancient and neglected disease. The World Health Organization (WHO) estimated that 10 million people contracted TB in 2019, and 1.4 million died from this disease.<sup>1</sup> A syndemic situation is the confluence of two or more concurrent or sequential epidemics or disease clusters that exacerbate the prognosis and burden of disease.<sup>2,3</sup> COVID-19 and TB appear to have a synergistic impact on health, social, and economic fields worldwide. TB epidemiology is worsening due to the COVID-19 pandemic, and in many countries, significant reductions were observed in the number of TB patients reported during the pandemic and the number of patients receiving TB treatment and preventive treatment services. When data compiled by the WHO from 84 countries were reviewed, it was found that 4.9 million cases were reported in 2020, compared to 6.3 million cases recorded in 2019, and thus, 1.4 million fewer people (a reduction of 21%) received care for TB, and this reduction was reported as 29% in 10 high TB burden countries. Mathematical models predict that disrupting TB services can significantly increase TB mortality and incidence. Due to this decrease in the number of reported cases, it is estimated that half a million more people may have died from TB in 2020 alone.<sup>4,5,6</sup> The predictions suggest that the COVID-19 pandemic could lead to an additional 6.3 million TB patients and 1.4 million TB deaths worldwide between 2020 and 2025. TB incidence and deaths in 2021 could increase to levels last seen between 2013 and 2016 globally. Due to the COVID-19 pandemic, this would imply a setback of at least 5-8 years in the fight against TB.<sup>7,8</sup> The COVID-19 pandemic is thought to pose a serious threat to progress made in the fight against TB, making the impact of the pandemic on TB services severe.<sup>4,6</sup>

During the pandemic, there have been significant declines in funding for TB care and treatment, as well as TB preventive treatment services. While the funding target for TB treatment and prevention was 13 billion dollars annually, this value remained at the level of 6.5 billion dollars in 2020. History has always shown us that TB and poverty are inseparable. Every other person with TB faces catastrophic costs due to this disease. The growing economic crisis, along with the existing poverty, can worsen the TB epidemic in some countries.<sup>5</sup>

Urgent recovery and improvement are essential. All countries should identify TB patients who are overlooked and undiagnosed during lockdowns as soon as possible and ensure that they receive quality treatment. Ensuring the continuity of TB services is critical. TB-related deaths need to be prevented. Funding for basic TB services and investment in TB research should be increased. The stigmatization of TB should be tackled. During the COVID-19 pandemic, the efforts made to shorten the time until effective vaccines are available and developments in vaccine technologies are very gratifying. A fast and comprehensive roadmap must also be supported for the development and introduction of new TB vaccines. Bacillus Calmette–Guérin (BCG), which is currently the only licensed vaccine against TB, is 100 years old today. Much more effective vaccine(s) are required to protect against all forms of TB in all age groups. Countries have to find and implement the necessary economic support for health problems such as COVID-19, TB, and AIDS. The world needs to build investments and strategies for TB epidemiology and strategically prepare for future airborne pandemics. Strong remedial action, advocacy, and funding are required for the global TB epidemiology to get back on track.

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