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Editorial

COVID-19 & the National Tuberculosis Elimination Programme of India

As of April 23, 2021, 144,767,231 confirmed cases of COVID-19 and 3,072,522 deaths occurred globally. India has the second highest number and detected 16,263,695 confirmed cases and recorded 186,920 deaths by this date[1]. To contain the spread of the disease, various restrictive measures such as lockdowns, quarantines, no social gatherings, travel restrictions and physical distancing measures have impacted the societal issues, economy and healthcare delivery systems throughout the world. The unprecedented pandemic adversely impacted and affected persons having pre-existing comorbidities[2,3]. Preliminary data from the National Clinical Registry of COVID-19 maintained by the Indian Council of Medical Research (ICMR) show tuberculosis (TB) as an important risk factor for COVID-19, with a relative risk of 2.5 (*www.icmrcovidregistry.nic.in*). Scientific publications on concomitant TB and COVID-19 are scanty and limited, and the subject has been reviewed and reported earlier elsewhere[4-7]. Preliminary study from India showed a 0.37-4 per cent prevalence of TB among COVID-19 patients, while 1.14 per cent of the TB patients screened for COVID-19 were diagnosed with the disease, until October 2020 (out of the 266,365 TB patients screened, 3025 were COVID-19 positive), following the policy of dual screening of TB and COVID-19 by the Central TB Division of India (personal communication). A recent report from Kerala revealed that of the 177 cases of dual co-infection of active TB and COVID-19, 27 (15.2%) patients died though many of them had associated comorbidities other than TB[8]. COVID-19 pandemic has overtaken and impacted many other health delivery systems, even the well-performing public health programmes including the TB control programme[9,10]. Due to increased attention to COVID-19, TB care will have less time and resources which may be diverted. Other issues such as overutilization of laboratories meant for TB work, specifically CBNAAT testing, re-deployment of TB care workers, difficulty in movement of TB patients and supervisors to supervise treatment and contact tracing, transportation of sputum samples, *etc*. will adversely affect the programme outcomes. Advocacy, communication and social mobilization (now IEC) activities will suffer. With treatment interruptions of new as well as drug resistant (DR)-TB cases, particularly those receiving short-course therapies may have disastrous consequences. One does not know what will be the end result if treatment is stopped for a few days or weeks out of the currently used short course and standard longer duration of therapy, leading to poor quality of TB care and adverse outcomes. Symptoms of both diseases being similar diagnosis of tuberculosis may be delayed. It can also lead to the worsening of stigmatization of TB patients. However, the country's capacity to rapidly develop a health delivery system for combating COVID-19 can be utilized for the Revised National Tuberculosis Control Programme (RNTCP), now called the National Tuberculosis Elimination Programme (NTEP) expansion and improvement.

TB case notification through Nikshay, an online case notification system through the e-platform, is an important component of the target of the End TB strategy[11]. Detection, treatment and completion of therapy are some of the key factors for achieving the goal. All detected cases, those put on treatment and their outcome are reported through the Nikshay. As per the Nikshay dashboard notification from January 1 till December 31, 2020, the case notification was 1,806,909, which was 60 per cent against a target for the year. The case notification from the public sector was 1,252,626 (65% of the target) and from the private sector, it was 559,751 (52% of the target). Till April 23, 2021, the case notification to the system was 636,976, and with the current surge in COVID-19 again, the figure may likely to be affected[11]. Case detection and notification were steadily improving under the programme with 75, 73 and 84 per cent for 2017, 2018

and 2019, respectively. While such improvement was happening, COVID-19 pandemic halted this march towards increased case notification. In 2019, 96 per cent of the detected cases could be put on treatment with a cure rate of 89 per cent[12]. Despite COVID-19, 95 per cent of the 1,805,670 TB cases diagnosed in 2020 were put on treatment as per the Annual TB Report 2021[13]. Shrinivasan *et al*[14] have emphasized how the COVID-19 pandemic has affected the TB control efforts of India that includes a reduced number of children being vaccinated with *Bacillus* Calmette-Guérin.

Recent data released by the WHO that has (collected online TB case notification from 84 countries including 10 high-burden countries) revealed that 1.4 million fewer people received TB care in 2020[15]. During 2020, these countries reported 4.9 million cases (provisional), against 6.3 million reported for 2019. The relative shortfall in TB case notifications (2020 vs. 2019) was 21 per cent. In the group of 10 high-burden countries with the largest shortfalls compared with 2019, the overall shortfall was 28 per cent (Indonesia 42%, South Africa 41%, Philippines 37%, and India 25%[15]. While the TB elimination is on the right track, there is a slow progress than it is necessary to meet Sustainable Development Goals (SDGs) for End TB. By 2020, the incidence was reduced by nine per cent against a target of 20 per cent and the mortality was reduced only by 14 per cent while the target was 25 per cent. The three highest-burden countries (India, Indonesia and China) are lagging, and there is a need for further investment in testing, treatment, prevention and research capacities[15,16].

The Stop TB Partnership released its findings on March 18, 2021[17], and the findings revealed that various responses for the COVID-19 pandemic pushed aside the TB outreach and services in the world and resulted in a 20 per cent reduction in the diagnosis and treatment of TB globally and an urgent call was given for the need for immediate revival. The 12 months of COVID-19 derailed the progress and gains made over the past 12 yr of global fight against TB. Data were monitored from nine high-burden countries (Bangladesh, India, Indonesia, Myanmar, Pakistan, Philippines, South Africa, Tajikistan and Ukraine). These countries have 60 per cent of the global burden of TB. Comparison of figures between 2019 and 2020 revealed that TB diagnosis and treatment in these countries declined by one million in 2020 that ranged from 16 to 41 per cent with an average of 23 per cent. Further the data from India and South Africa revealed that dual infection of TB and COVID-19 resulted in three times higher mortality than people with TB alone. Results of a global civil society and TB-affected community-led survey have highlighted various issues impacted by COVID-19 on TB. The findings of the survey offer a grassroots perspective on how COVID-19 is impacting five key stakeholder groups, namely, people with TB, frontline healthcare workers, programme and policy officers, TB researchers and TB advocates[18].

Based on these observations and findings, these agencies recommended that all the National TB programmes which are run by the Governments, should make arrangements so that the TB care and programme operations continue while taking steps to combat COVID-19. The RNTCP of India was a success story[12,13], and it was slowly and steadily marching towards the goals of end TB. However, the COVID-19 pandemic, especially considering the mitigation measures put in place, became a serious setback for these goals. This was due to a fall in case detection, diagnosis, notification, treatment initiation and holding. One of the other important casualties is the operational research on TB. No new studies could be funded or undertaken. Enrolments and smooth functioning of already ongoing projects were slow or some of them were stopped. There are some India-specific issues regarding TB and COVID-19 as a large number of migrant workers returned to their homes following lockdown. This led to an interruption of TB treatment. Loss of earnings for these migrants and other workers will lead to malnutrition making them more susceptible to develop TB. Many co-infected cases with TB will be an issue both for the availability of ventilators, and more importantly how to handle sputum-positive TB cases on ventilators[19].

The COVID-19 pandemic has put enormous challenges and unprecedented stress on the healthcare system and related activities throughout the world, and the National Tuberculosis Elimination Programme (NTEP) was no exception. Various health programmes including the NTEP were repurposed to help and support the country's response to the pandemic. The programme converted this challenge into an opportunity and attempted bi-directional screening for TB and COVID-19 so that more cases of TB could be diagnosed, notified and treated. The Central TB Division, Government of India, has issued advisory to all States and Union Territories for smooth continuation of NTEP activities during this period. The

latest advisory to mitigate the impact of the acute rise of COVID-19 cases on the NTEP in the country was issued on April 6, 2021[11]. The advice emphasizes that all measures should be taken to ensure continuity of services for people who need preventive and curative treatment for TB. Health authorities at various levels are to maintain support to essential TB services during the COVID-19 and lockdown situations. The advisory and other details have been displayed on the official website[11]. One of the other important steps taken by the programme was to facilitate and expedite the disbursement of the payments under its *Nikshay Poshan Yojana* through the Direct Benefit Transfer, which is a way that the Government of India provides targeted benefits to people.

India has an ambitious plan of Ending TB by 2025. The present COVID-19 crisis and its consequences may derail this target[4-7,20] as our public health, political and economic focus and priority will shift towards the new pandemic, and the deadline of 2025 may be difficult to achieve. If we can manage and prioritize various recommendations by different agencies as outlined earlier and recently by Sahu *et al*[21], we may regain some lost grounds. Other important areas that will need augmentation are the alignment of the TB–COVID-19 diagnostic and vaccination drives, active early case finding and porting, engaging the participation of private sector for providing care and mitigation of societal fear and stigma. We can learn similar lessons from the unprecedented speed of COVID-19 vaccine development and the ways of the fast tracking of such endeavours which can be utilized for new TB vaccine development and evaluation.

***Conflicts of Interest*:** None.

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