

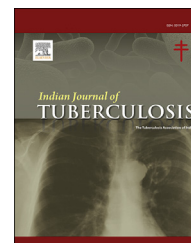


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## Correspondence - Post Graduate Corner

# Insight into the COVID-19 led slow-down in TB notifications in India

### Keywords:

COVID-19 epidemic  
Lockdown  
Tuberculosis  
India

Dear editor

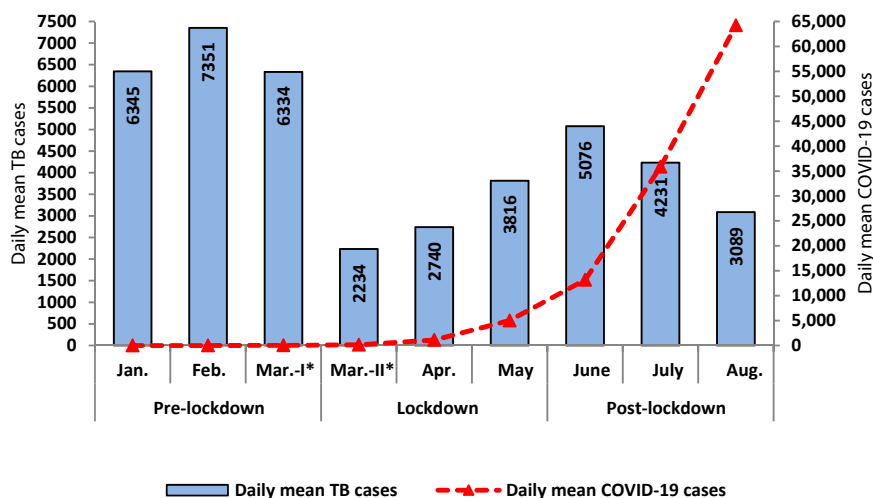
I am writing this correspondence with the interest in an editorial, entitled “COVID-19 and Tuberculosis”, a viewpoint, entitled “Tuberculosis and COVID-19 in India – double trouble!”, and an article, entitled “The potential Impact of the COVID-19 response related lockdown on TB incidence and mortality in India” published in the journal which focuses mainly on COVID-19 and TB burden in India. The study by Bhargava and Shewade<sup>1</sup> reported that COVID-19 outbreak had an impact on reduction in Tuberculosis (TB) detection, which further contributes to increased transmission reflect in increased incidence in later time period. In addition to information furnished, little is known about the specific impact of COVID-19 epidemic on TB, especially, during unlock period. Here, an attempt has been made to compare the actual epidemic real-time data on TB released daily by the NI-KSHYA web portal<sup>2</sup> under union health ministry from March to August of 2019 and 2020.

The Prime Minister of India, in response to COVID-19 (Corona Virus Disease 2019) pandemic identified in China during December, 2019<sup>3,4</sup> and the first case was identified during January, 2020 in India,<sup>5</sup> announced a ‘Janata Curfew’ on March 22, 2020; and subsequently, a nationwide lockdown was imposed from March 25, 2020.<sup>6,7</sup> Vigorous infection control measures, such as testing, tracing, physical distancing and restrictions on movements, etc. were initiated.<sup>6</sup> While this situation remains in effect, such measures could negatively affect the overall healthcare services for other necessary healthcare need, such as TB.<sup>8</sup> TB, an oldest and more burdensome infectious killer, is still a public health crisis across the globe. India bears the highest TB burden in the world; a quarter of 10 million cases and one-third of 1.2

million deaths globally.<sup>9</sup> Further, India has reported 24 Lakh TB cases in 2019; an increase of over 12% compared to 2018.<sup>10</sup> On the other hand, the surge of COVID-19 cases is still continue, and as on September 23, 2020, 07:36 GMT almost 31.8 and 5.6 million confirmed COVID-19 cases have been reported across the world and in India, respectively.<sup>11</sup> There is a crucial connection between TB and COVID-19; both the diseases show similar symptoms, such as fever, difficulty in breathing, cough; and transmitted through respiratory droplets and attack the lungs.<sup>12–15</sup> Moreover, both diseases can be identified using the same diagnostic technology/mechanism.<sup>12,13,15</sup>

Daily TB notification data extracted from NI-KSHAY<sup>2</sup> web-portal of union Health Ministry demonstrates that since COVID-19 outbreak, especially during and after COVID-19 forced lockdown period, TB cases notifications has drastically decreased. At the national level, on an average daily 6–7 thousand TB cases were reported before lockdown during, which suddenly decreased to around 2k during first week of lockdown, and 2.5 and 3.8k during April and May months. Further, though, daily TB cases were increased to around 5k during June, than these numbers again decreased in succeeding months; around 4k and 3k during July and August months, respectively (Fig. 1).

Overall, in 2020, the national level monthly number of newly registered patient with TB from March to August months were 167,727, 82,249, 118,455, 152,656, 132,400 and 102,835, this represent a percentage decrease of 21%, 63%, 47%, 25%, 38% and 45%, respectively, compared to the same period in the previous year (Fig. 2). During overall lockdown period, total 224,450 TB cases were reported compared to 507,749 cases during the same period of 2019, a reduction of 56% and 283,299 less cases in absolute numbers. Similarly,



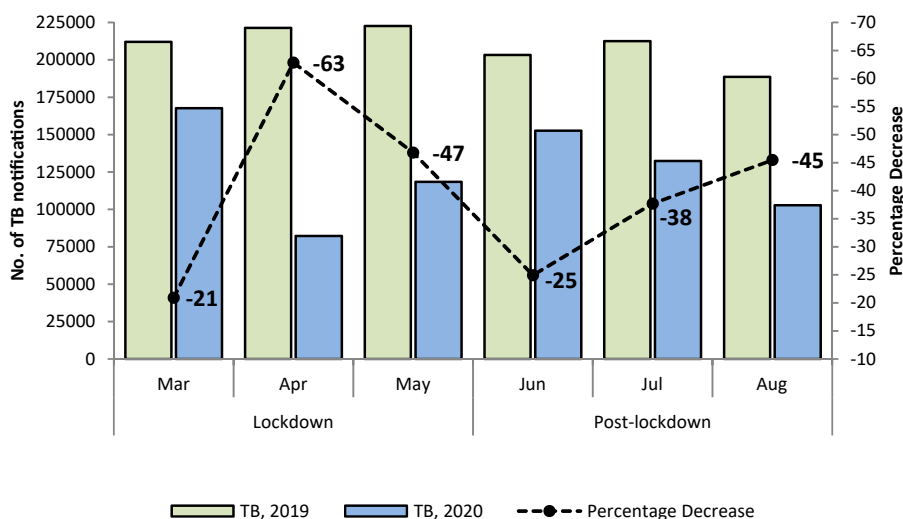
**Fig. 1 – Trends in daily mean number of COVID-19 cases and TB notifications, India, 2020.** Note: Mean number of daily notified TB cases reported during January to August, 2020; \*the COVID-19 response lockdown was imposed on March 25, 2020, hence, March month cases are classified as Mar-I for up to 24<sup>th</sup> March and Mar-II for 25-31 March; COVID-19, coronavirus disease; TB, tuberculosis. Source: TB notifications data extracted from the NI-KSHAY database (NTEP 2020); COVID-19 cases were extracted from COVID19- India API website (COVID19-India API 2020).

during post-lockdown period (up to August 31, 2020), total 405,122 TB cases were reported compared to 643,522 cases during the same period of 2019, a reduction of 37% and 283,400 less cases in absolute numbers (Table 1).

The more worrying aspect is the reduction in TB notification even during unlock period. The reported data illustrates that the TB cases reported is still substantially low even after lockdown was removed. Though, soon after lockdown was removed, some improvements were observed during June month (only 25% reduction in TB cases compared to same

month in previous of 2019) but again the percentage decrease in TB notifications were increase in July (-38%) and August (-45%) months (Fig. 2). These trends demonstrate that the gap in newly registered TB cases was gradually widening month by month compared to previous year of 2019, which is more troublesome aspect in India. This is accompanied by surge in COVID-19 cases day-by-day (Fig. 1).

The entire healthcare concentration, including TB diagnostic technology/mechanism, is diverted to COVID-19 crises; leading to deprioritized and delayed in TB investigation.<sup>16</sup>



**Fig. 2 – Trends in newly registered TB cases and percentage decrease during COVID-19 in India, January-August, 2019 and 2020.** Note: Nationwide COVID-19 forced lockdown was imposed during March 25, 2020 to May 31, 2020; COVID-19, coronavirus disease; TB, tuberculosis. Source: Author’s calculations based on TB notifications data extracted from the NI-KSHAY database (NTEP 2020).

**Table 1 – Number of notified TB cases reported before, during and after implementation of COVID-19 forced lockdown in 2020 compared with the same period during the previous year of 2019.**

Period	No. of TB notifications, 2019	No. of TB notifications, 2020	Absolute difference	Percentage Decrease
Pre-lockdown	545,512	553,561	(8049)	1.5%
Lockdown	507,749	224,450	283,299	–55.8%
Post-lockdown	643,522	405,122	238,400	–37.0%
Total	1,696,783	1,183,133	513,650	–30.3%

**Note:** () figure in parenthesis is excess number of TB notifications during 2020 compared to 2019; nationwide COVID-19 forced lockdown was imposed during March 25, 2020 to May 31, 2020. Hence, pre-lockdown period was considered from 1 January to 24 March, lockdown from 25 March to 31 May and post-lockdown from 1 June to 31 August; COVID-19, coronavirus disease; TB, tuberculosis.

**Source:** Author's calculations based on TB notifications data extracted from the NI-KSHAY database (NTEP 2020).

Moreover, patient with newly developed respiratory symptoms are scared to visit clinics.<sup>17</sup> Conditionality on Private Doctors/Druggist was hampered healthcare services<sup>18</sup>; and even outpatient clinics and emergency departments were being temporarily closed after patients tested positive for COVID-19.<sup>19</sup> Furthermore, it is being argued that the infection control measure imposed in response to COVID-19 will reflect in reduced TB infection.<sup>20</sup> Hence, both, the lower number of new TB cases during COVID-19 epidemic due to delay in diagnosis and TB cases reduced by comprehensive measure in response to COVID-19 are the topics of further study. The nation-wide real-time TB registration data in coming days may provide a better answer.

In summary, though, the above reasons may have led to the reduction in the TB notifications, but it must be noted here that this may dampen the government of India's aim to eradicate TB by 2025. Hence, the continuity of essential TB interventions should be implemented simultaneously with response to COVID-19.

### Availability of data and materials

The data used for the study is obtained from the NI-KSHAY web-portal under union health ministry which is available in public domain. No separate ethics statement and consent for publication was required for this study.

### Conflicts of interest

The author has none to declare.

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