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Letter to the Editor

Experience of integrated screening and testing for TB and COVID19 from Kerala, India

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COVID-19 has restricted essential health service delivery. Nine of the countries with the most TB cases documented a decline in diagnosis of TB in 2020, ranging from 16% to 41% [1].

Kerala, the southern Indian state had 22314 confirmed COVID-19 cases per million population till Dec 31, 2020 [2]. There were an estimated 2000 missing TB cases in September 2020 in Kerala. An unusual delay in diagnosis of TB and an increase in case fatality were also observed in individuals with COVID-19 and TB together [3].

An action plan was prepared by the state TB Elimination program to catch up the TB diagnosis in Kerala. Since the entire health system was preoccupied with COVID-19 control activities, the strategies mainly focussed on the principle of integration with COVID-19 control activities. One of the strategies was an integrated TB testing algorithm based on operational feasibility and local epidemiology of TB and COVID [4].

The state had developed a universal COVID-19 surveillance system for all individuals at risk for developing COVID-19. All such individuals at risk are being followed up by the primary health care team daily for symptom surveillance. For all individuals eligible for COVID-19 testing, the following recommendations for screening and testing for TB were made.

a) Influenza Like Illness (ILI) in a person with any vulnerability to develop TB (contact with TB, elderly, diabetes, immunocompromised conditions, malnutrition, chronic respiratory diseases, tobacco use) are recommended for testing for TB concurrently.
b) All individuals with ILI and tested COVID-19 negative were followed up after 10 days over telephone/direct visit to screen for TB (cough >2 weeks, fever >2 weeks, weight loss, night sweats) by the NTP Key staff/primary health care team. If the symptoms persisted for >14 days, TB tests were offered.
c) All individuals with Severe Acute Respiratory Illness (SARI) were screened for TB (cough >2 weeks, fever >2 weeks, weight loss, night sweats) and those requiring hospital admissions were screened using Chest X ray.
d) All confirmed COVID-19 patients were screened for TB using four symptoms complex (cough >2 weeks, fever>2 weeks, weight loss, night sweats). COVID-19 patients requiring hospital admissions were screened for TB using Chest X rays also.

All those who were screened positive (any one symptom out of four or any abnormality in chest X ray) for TB, were offered an upfront molecular test using closed nucleic acid amplification platforms such as GeneXpert (Cephid, US)/Truenat (Molbio Diagnostics, Verna, India).

In addition to 43 molecular Nucleic Acid Amplification testing (GeneXpert/Truenat) machines in public sector, 32 new machines were purchased. All machines were equipped with Biosafety Class II A2/B2 cabinets. 75 such laboratories (1 per 400,000 population in public sector) were set up for performing tests bilaterally for both TB and COVID-19. Labs were set up at periphery after spatial analysis. Human Resources were redistributed to run all the machines for an average of 12 hours a day.

Specimen collection system and transportation was established in a hub and spoke model from every village. The transportation mechanisms were locally customised to each setting-some areas had human couriers whereas some areas had dedicated vehicles for the same. Through the system, samples for COVID-19 and TB testing flowed to concerned hubs.

A standard operating procedure for collecting the sputum samples was prepared. All category of staff including community health volunteers were trained with a one-hour online training module. Equipment for collection, packing and transporting were also locally developed with a prototype prepared at state level.

During November 2020, there were 1701 TB cases notified and 168227 COVID-19 new cases diagnosed in the state. 34 individuals were diagnosed with both TB and COVID together. During November 2020, 34417 individuals with ILI were screened for TB, 2437 presumptive TB cases were identified among them and 69 were diagnosed as TB (Yield per 100000 screened is 200). Out of 6716 SARI cases, 852 were identified as presumptive TB and 61 were diagnosed as TB (Yield per 100000 cases screened is 988). Together it constituted 8% of all TB notified in November 2020.

Ensuring the infection control systems and enhancing the biosafety of laboratories gained confidence of the health staff to collect the samples, transport and perform the tests. Clinicians were a bit apprehensive about the algorithm at the beginning. Provider oriented strong advocacy campaigns gained the trust of clinicians.

Test positivity for TB was higher among SARI cases. SARI cases are

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most likely to seek care from a hospital and has a high probability to get a chest X-ray done. Appropriate screening would have happened. This could be the reason for a higher positivity rate.

The experiences shows that integrated testing for TB and COVID-19 is feasible in routine program setting. TB case finding could be improved and delay in diagnosis could be averted by integrating TB case finding into the screening and testing systems established for COVID-19.

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Rajan N. Khobragade
Department of Health & Family Welfare, Government of Kerala, India

Neetha Murthy
Intermediate Reference Laboratory, State TB Cell, Thiruvananthapuram, Kerala, India

Suja Aloysius
District TB Centre, Thrissur, Kerala, India

Deepu Surendran
State TB Cell, Thiruvananthapuram, Kerala, India

P.S. Rakesh*, Shibu Balakrishnan
World Health Organisation National TB Elimination Technical Support Network, Thiruvananthapuram, Kerala, India

* Corresponding author. World Health Organisation National TB Elimination Technical Support Network, State TB Cell, Thiruvananthapuram, Kerala, 695036, India.
E-mail addresses: rakeshrenjini@gmail.com, bhatr@rntcp.org (P.S. Rakesh).