Editorial

# In tuberculosis, "one size does not fit all"

India has set itself an ambitious goal of being tuberculosis (TB)-Free by 2025, as against the same target of WHO by 2030. If India is to become TB-free free by 2025, or even within our lifetimes, unprecedented effort by the government program (Revised National Tuberculosis Control Program), the private sector and social service sector shall be required. To become TB free, we must achieve >15% (not the present 1.5%) annual decline in TB incidence.[1]

While becoming TB free seems daunting, many have begun taking small steps toward this goal.[2] The current issue of Lung India carries two related articles that address active case finding (ACF) of TB cases and prognosis of drug resistant extrapulmonary-TB.[3,4] One theme evident from both papers is that "one size (either the diagnostic search for TB patients or the prognosis of EP patients) does not fit all the cases of TB."

In their article, Mani and the Pondicherry team conducted ACF for TB patients, enlisting medical students to use the Epicollect Open Access mobile application for 2252 homes. They found 55 presumptive cases of TB, of which 51 (93%) underwent investigation and two new cases were diagnosed.

ACF is a pillar in the strategy for TB elimination, by preventing the transmission of new infections and early detection of existing ones.[5] High-risk populations living in slums, poor villages, or tribal areas require ACF. In India, as many as 20% of the population or as many as 260 million people may need TB screening. This monumental task cannot be done by the present government infrastructure alone or by medical students. In fact, one of the reasons for not having a robust ACF program, similar to the Directly Observed Therapy, Short-course program (DOTS), is the lack of human workforce funded and trained for ACF.

While Mani *et al.* provide one solution for active case finding by involving medical students, the numbers are rather small for generalization. However, their success can be extrapolated and scaled up using other health allied students from nursing or pharmacy schools and Bachelors in Science students, all of whom could be part of the campaign to end TB.

Mani *et al.*'s paper underscores a number of key points for ACF in India:

1. We urgently need unique and diverse community-based models with students, social service organizations, and nonprofit organizations
2. We also need ACF models that will use government employees such as anganwadi and accredited social health activist (ASHA) workers. Some or all will be essential to effectively reach the high-risk TB population
3. The use of an open-source mobile application shows the success of innovation and technology to leapfrog in community health
4. Human resource is the single most important rate-limiting step in adequate and comprehensive ACF program
5. The use of X-rays needs to be prioritized in new ACF algorithms.

Currently, for many regions in India, a comprehensive ACF strategy is not being implemented though it may be on present on paper. Who should do ACF? Who should be screened? Should ACF be performed using the traditional paper based questionnaires or the more advanced and user friendly digital platforms. How much trainings are necessary? How should the suspected cases by managed? Operational research is required to answer these questions that seem to be critical to the End-TB strategy for India in the face of scant available data.[6]

Of equal importance is to think as to how can an ACF model be replicated, sustained, and scaled up with each new model tweaked for the population it is serving. We will only know what will work for a population by doing a small pilot plan-do-study-act quality improvement cycle with a given model and then scale up as we are successful, simultaneously ironing out the impediments that we face.

The final lesson Mani and team's article teaches us is that all ACF approaches are not the same. They vary with the population being surveyed, the surveyors who are conducting the survey, and the resources, such as X-ray or cartridge based nucleic acid amplification test (CBNAAT), which may be available.

Just as the approach for ACF is not the same for all populations, the prognosis of multidrug-resistant TB (MDR-TB) is not the same for all patients. While the cure rate for MDR-TB is at 52%, the paper by Desai and Joshi[3] showed us that this is not true for all MDR-TB cases. Of the 1743 drug-resistant cases in Mumbai from TN Medical College and BYL Nair Hospital, 4.4% (76) were EP cases with half of them being from the lymph nodes. Overall Extrapulmonary cases E cases had a cure rate of 82%.

The important paper addressing drug resistant extrapulmonary cases underscores several key points about MDR-TB.

1. We must not resign to a high rate of failure in every case of MDR-TB

2. We need to consider trials for shorter regimens with EPTB
3. The body weight of EPTB and drug-resistant EPTB is higher and so patients' dosing and drug regimen and adverse events may vary.

As the title of the Desai and Joshi paper suggests, there is hope with MDR. When we encounter a case of MDR, we need not be in despair and be discouraged by thinking that only half will be cured; rather, in the case of EP-MDR, patients experience over 80% cure rates.

With variation in prognosis and variations in ACF outcomes, the work of the clinician as well as the public health officer is more difficult. It requires depth of knowledge, a study of the literature, and application of knowledge and experience to a given situation. In the end, this makes TB care even more challenging and the goal of TB elimination by 2025 or within our lifetimes even more daunting.

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