Improving COVID-19 Testing in India

The project aims to support five state governments in India to improve access to COVID-19 testing by building a cost effective, sustainable, and scalable model for testing strategy and capacity

India has surpassed most countries in COVID-19 case incidence. Though testing has increased significantly, it does not match present needs. The sero-surveillance suggests a 25% increase in the prevalence of the infection among people residing in slums with higher population density. There is a need to include evidence-based strategies appropriated to subcategories of population stratified by a vulnerability index and chances of exposure. Although testing guidelines exist and are regularly updated, state governments and district administrations have limited support to operationalize testing strategies or introduce innovations. In the absence of a vaccine, the strategy of testing, tracing and treatment or isolation remains the most effective.

PATH is providing technical support to five selected state governments – Maharashtra, Punjab, Uttar Pradesh, Meghalaya, and Tripura, in partnership with Max Institute of Healthcare Management, Indian School of Business.

Current Challenges

- Increased turnaround time for a confirmatory diagnosis
- Absence of a differentiated testing mechanism
- Absence of rationalized use of existing resources
- Uncertain test reports
- Limited or delayed adoption of new technologies, fear of getting tested
- Limited peer learning

Approach

The project aims to be iterative and cater to needs of the specific geography, work through public private partnerships, be data driven, be dynamic and innovative in its solutions. The strategy is two-fold:

- Provide technical assistance with landscape and need analysis to state governments
- Demonstrate a response package of testing and innovations through the 4P model: process innovations, product innovations, partnerships, and peer learning

Project Deliverables

- Mapping laboratories and their testing capacities
- Solution packages to scale up testing capacities and improving access to testing
- Data-driven decision support tools
- Playbook for implementation and scale-up of different operating models
- Costing and impact assessment of various testing strategies

It will inform government resourcing to increase coverage and capacity of COVID-19 testing and improve equitable distribution of testing solutions

Activities

- Assessment of existing testing capacity and utilization
- Capacity building of public sector labs
- Testing new and approved technologies
- Prioritizing populations based on socio-economic variables, co-morbidities, and occupational vulnerabilities
- Improving diagnosis through repeat testing
- Technical support for operationalizing new testing strategies
- Leveraging private sector labs

Response Package

Process Innovations

- Optimum utilization of resources
  - Affordability of testing
  - Sample collection and transportation
- Capacity building of human resources
- Differential testing algorithms
  - Serial antigen testing
- Testing network optimization
- Demand side interventions for testing

Product Innovations

- Identify newer validated tech. for deployment
  - TATA Feluda
  - RT-LAMP technology
- Accelerated deployment of innovations

Peer Learning

- Documentation of existing practices and best practices
- Peer learning through dissemination on e-platforms

Partnerships

- Technical and inter-stakeholder partnerships
- State government partnerships

Demonstrating Lab Strengthening Model

	Routine Testing Algorithm	Laboratory Strengthening Interventions
Improved access to testing and turnaround time	1. Not all cases require qPCR testing	1. Ag testing for screening at PCR labs 2. Ag Negative samples be pooled and run on RT-PCR
Decentralised testing and improved sample transportation time	1. Limited or no availability of laboratory testing capacity 2. Suboptimal capacity of existing resources	1. Networking of private laboratories 2. Strategic test purchasing 3. Building capacities– HR & Systems
Public qPCR lab capacity improved		
Automated extraction of RNA improving TAT and capacities	1. Manual extraction led to contamination and error 2. Delays due to limited manpower 3. Underutilization of qPCR testing capacity	1. Automated extraction system 2. Use lysis buffer or dry swab 3. Pooling of samples
qPCR (12/24/48/96 etc.) improved testing capacity/ day	Manual extraction resulting in: 1. Backlog of samples 2. Loss of RNA due to delayed processing – faulty results 3. Average wait period of 48-72 hours	1. Screening of samples with Ag test 2. Pooling to increase throughput 3. Reduced TAT
qPCR results shared within 24 hours		