

The diagnostic challenge

Accurate, timely diagnosis of **active pediatric TB** is **challenging for many reasons:**

- Children are unable to expectorate sputum so diagnosis is often based on clinical evaluation
- Symptoms can mimic common childhood diseases
- The use of TB vaccinations and widespread exposure to TB amongst adolescents means tuberculin skin tests and contact tracing cannot aid diagnosis
- Smear microscopy is not sufficiently sensitive
- Liquid culture has a slow turn-around time for results

This raises the potential for wrong diagnosis, meaning children are less likely to get timely, appropriate care.

Innovative technology



Xpert MTB/RIF[®] is a highly sensitive test for the diagnosis of TB and rifampicin resistance. The test is suitable for use in disease-endemic countries and has WHO endorsement.

The cartridge-based, fully automated nucleic acid amplification test is fast and easy to use. It extracts DNA, concentrates, amplifies, identifies targeted nucleic acid sequences in the TB genome and **provides results in just 120 minutes.**

In 2014, the WHO recommended that Xpert MTB/RIF[®] be used as **the initial diagnostic test in all children presumed to have TB**, in place of conventional microscopy and culture.

SUCCESS STORY

Muskan, a 14 year old girl, complained of fever and loss of appetite. Worried, Muskan's mother took her to a private clinic. Muskan received a diagnosis of Dengue/Typhoid and was prescribed a liquid diet and medications. Despite initial improvement, Muskan's symptoms increased in severity.

Muskan's mother took her to other doctors and none were able to help. The child's appetite disappeared and she was rapidly losing weight. Finally, Muskan's mother took her to a doctor who knew about our Pediatric TB project.

The physician suspected Muskan had TB, based on an X-ray report, and collected a specimen sample and sent it to our project site. That same day, the sample was tested using GeneXpert and the results were returned to the physician. Muskan had TB. .

As a result of the rapid turn-around on test results, Muskan was able to start TB treatment immediately. Though the medicines are intense, Muskan's condition started improving and she began gaining weight.

Today, Muskan is healthy. Her parents are relieved to see their daughter's smiling face. We must ensure that other children, like Muskan, get the right diagnosis. But, unlike Muskan, none should have to suffer for so long waiting for answers.

We now have the technology to provide fast, accurate TB testing free-of-charge—it's time to use it.



PAEDIATRIC TB PROJECT

Accelerating access to rapid and accurate TB diagnosis



ABOUT THE PROJECT

The Pediatric TB project was designed in 2014 to provide critical solution to the challenges of tuberculosis diagnosis in children.

The project provides up-front Xpert MTB/RIF[®] testing for presumptive pediatric TB and DR-TB cases. Testing is conducted in high throughput Xpert laboratories that have been established within 9 of India's RNTCP reference laboratories.

Current locations: Delhi, Hyderabad, Chennai, Kolkata, Nagpur, Vizag, Surat, Lucknow, Agra.

Any pediatrician in these 9 cities can refer their pediatric suspects directly to the labs, or organize transfer of specimen. Accurate, evidence-based same-day diagnosis is provided in line with internationally accepted standards of TB care.

For patient and provider, in both private and public sectors, there are zero fees for referrals, transfer of specimen, or testing.

The Pediatric TB project is an initiative of India's RNTCP and National Institute for Research in Tuberculosis. Implementation



& technical support is provided by FIND. Funding comes from U. S. Agency for International Development and U.S. Centers for Disease Control.

Bring the benefits of accurate, rapid TB tests to your patients — free of charge.

How to engage

Refer the paediatric suspect or their specimen to the project site (details below).

Specimen transportation costs are covered by the project. There are zero fees for referrals or testing.

Specimen to be accompanied by a completed 'Standard lab request form' with contact number and mail ID of referring provider.

Test results will be communicated through SMS/or email within **12 working hours of specimen receipt.**

If TB is diagnosed the patient can be referred for free treatment under RNTCP or opt for private treatment.

Sending samples

All samples are to be collected and sent in a sterile container.

Acceptable samples include: sputum, gastric lavage, BAL, induced sputum, lymph node aspirates.

Extra-Pulmonary samples like Tissue Biopsy can be sent in Normal Saline. Avoid sending samples in formalin.

Do not send stool, urine and blood examination.

Project site details

New Delhi TB Centre
Jawaharlal Nehru Marg, New Delhi 110 002
Contact No: 9899249176, 9891110391,
9654462329, 9953307701



Project Update

From April 2014 to 2016, **36,784 pediatric suspects** and a total of **40,924 specimens were tested**. Of these, 54.6% were non-respiratory specimens.

Overall, Xpert MTB/RIF[®] gave **99.6% valid results**. Of the presumptive TB cases enrolled, 7.9% were bacteriologically confirmed.

TB detection rates were **four fold higher on Xpert MTB/RIF[®]** as compared to smear microscopy. A total of **265 rifampicin resistant TB cases were detected**.

The project has demonstrated the feasibility and utility of extending Xpert MTB/RIF[®] testing to non-sputum specimens from children. The free testing has proved to be a big financial relief to poor patients who are able to avoid visit expensive private labs.

The project has linked with more than 450 health facilities.