CASE STUDY

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Partnership of Hope

How Qure.ai & India Health Fund are revolutionizing TB Care in Nagaland

Home to the Konyak Nagas, District Mon is one of the most remote parts of Nagaland and India. Although renowned for its evergreen hilly landscapes and scenic beauty, the district's secluded location and mountainous terrain bring significant difficulties not just in daily life but also for healthcare.

Patients waiting in a queue at the registration counter at District Hospital, Mon.

District Mon suffers from the third highest Tuberculosis (TB) burden in Nagaland. In addition, providing healthcare in the district is challenging owing to its remote and resource-constrained geography, and an understaffed district hospital with an unmet need for more specialized doctors. The result: long waiting queues of patients, lag in diagnosis of transmissible diseases like TB, missed patients, and delays in treatment linkages.

A patient waiting his turn at District Hospital, Mon.

Even for those who do manage to go through the testing, the process in Mon District TB center is long and complicated.

Meet, Dr Tinenlo James Katiwa, who is the District TB Officer of Mon District, Nagaland. Highlighting the issue, Dr. Tinenlo, said

We have a lot of patients, especially from remote places. Some of them are from impoverished backgrounds. We do not have a radiologist in Mon District hospital or in any other district hospital here. Radiologists are very scarce. Using X-ray as a screening tool was not possible due to that. We didn't advise patients to screen because there were no radiologists available to read their X-rays. We went for other tests.

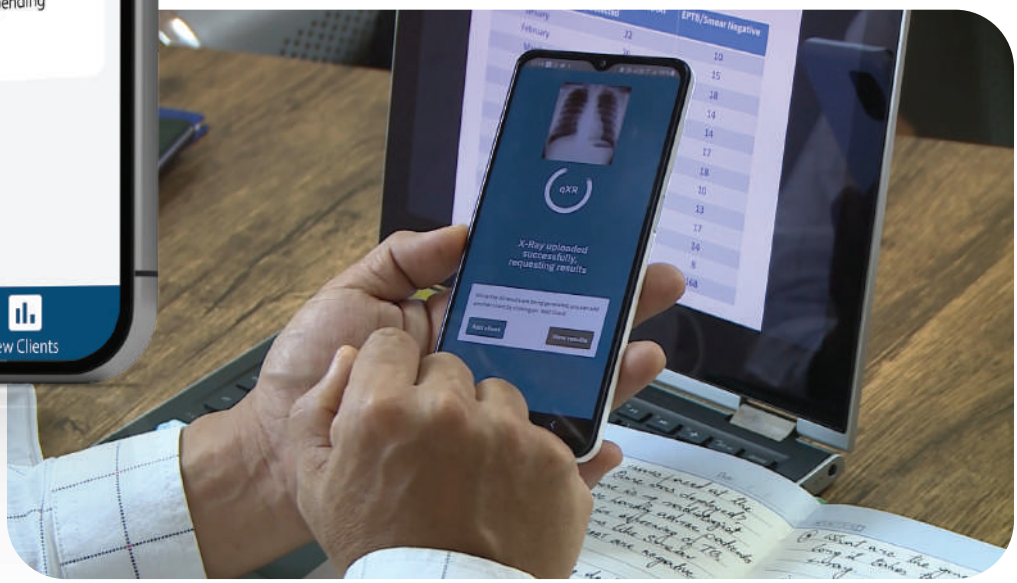
Dr. Tinenlo James Katiwa,
District TB Officer of Mon District, Nagaland

Dr. Tinenlo added that District Hospital Mon is a prime location not only for the people of Nagaland but also for people from Myanmar who often visit to get checked for TB. But due to lack of radiologists, screening TB using a simple chest X-ray is not an option and more complex and expensive tests such as CB-NAAT are used.

The office of the District TB Officer in Mon, Nagaland, also serves as a clinic for TB patients. The clinic, which doubles as an office, is located separately, opposite the main hospital building.

Absence of specialized radiologists has also significantly affected the pace of TB diagnosis. Lacking appropriate testing support, people are forced to consult with other non-specialists and ask their opinion to reduce the turnaround time of screening and diagnosis. So, the other doctors are also under tremendous workload and need a solution to the problem at hand.

It was at this juncture that Qure.ai's artificial intelligence (AI)-enabled X-ray screening solution, qXR, and disease management platform, qTrack app, came to the notice of the authorities.



The qXR app on the phone, and a X-Ray being uploaded on the app.

With support from India Health Fund, qXR was introduced to Mon District Hospital in January 2022. Since then, qXR's screening and interpretation capabilities have been prominently used to detect TB cases.

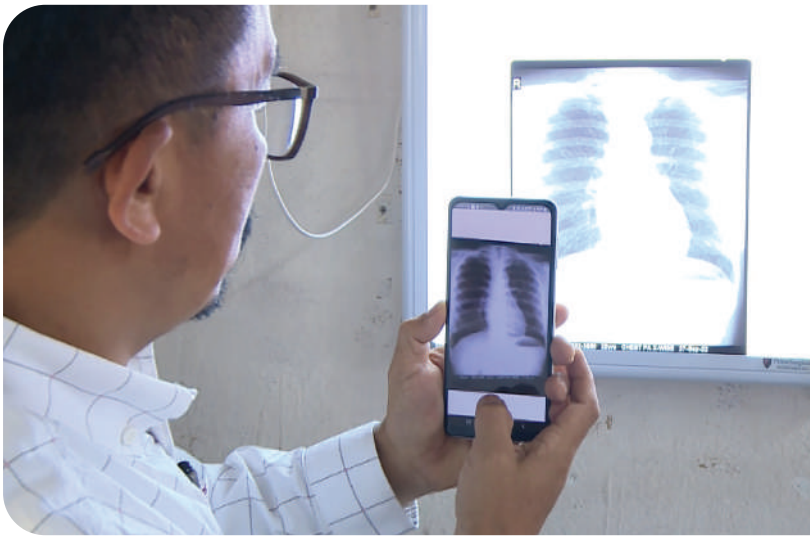
Out of 374 chest X-rays | 222 patients were flagged as TB presumptive by qXR.

128
ruled as TB Positive

51/128
microbiologically confirmed

77
patients were clinically diagnosed with qxr

These case findings not only brought hope to hundreds of patients who could quickly link to treatment, but also supported the already burdened health workers like Dr. Tinenlo to use tested TB diagnosis methods like X-rays more readily. As he said ***"After qXR was introduced, we started to use X-rays and it has helped our TB programme."*** Moreover, now the more expensive confirmatory tests like CB-NAAT could be used only when a positive case is found through qXR, saving precious resources for health systems in Mon.



Dr. Katiwa scanning an X-Ray on the qXR App.

Dr Tinenlo with a patient and checking a chest x-ray on the mobile-enabled AI software.
The patient was detected as TB-negative.

Dr. Tinenlo added, "Owing to the lack of trained radiologists, we had to go for teleconsultation or consult with other doctors, but this AI-based tool has helped in reducing the time to get to the results. This has augmented our diagnostic prowess. In a remote place like Mon, it has benefited many patients. We are also using qTrack to keep track of the screenings and smear test results. This has reduced the testing turnaround time. When the internet is good, we get the results in as little as a minute, and even when the network is bad, the results take only 3 minutes. So, this tool and program have been very beneficial."

After Qure.ai's solutions were deployed, doctors at Mon District Hospital began screening chest X-rays and interpreting results. qXR and qTrack helped reduce the turnaround time to minutes, assist with faster and more accurate detection and lead to earlier diagnosis by doctors. The AI-based technology has transformed TB care in a remote district like Mon, fast-tracked results for patients and given them immense hope.

Mon is one of the many success stories in the Qure.AI – India Health Fund-led partnership to empower remote and resource-constrained hospitals in TB-burden areas in India to tackle the problem of missed cases and improving clinical decision-making. Since the launch in 2020, the partnership has scaled to more than 70 hospitals in 13 Indian states, a majority of which include primary and secondary government facilities and charitable trust/ mission run hospitals and has screened over 50,000 individuals for TB. India accounts for a quarter of the world's 10 million TB cases. With India facing an acute shortage of trained radiologists, getting a confirmed TB diagnosis can take weeks leading to missed TB cases, increased disease spread, delayed initiation of treatment and higher risk of mortality.

AI-based qXR classifies X-rays, identifies lung abnormalities and highlights them on the scan, enabling the detection of TB within minutes. CE certified, the qXR software, is trained and tested on over 3.7 million chest X-rays using deep learning.

About Dr. Tinenlo James Katiwa

Dr. Tinenlo James Katiwa,
District TB Officer of Mon District,
Nagaland

Dr. Tinenlo James Katiwa, MBBS, is the District TB Officer of District Mon in Nagaland. He is also the District Program Officer of NTEP (National Tuberculosis Elimination Program), NVHCP (National Viral Hepatitis Control Program, NSACS (Nagaland State Aids Control Society), NLEP (National Leprosy Eradication Program), and Blood Safety (Blood Bank) in Mon.