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Tuberculosis Crisis in Underserved Populations:

The Mobile Radiology Answer

Tuberculosis (TB) is the world's most infectious disease, responsible for more fatalities than HIV and malaria combined. TB has reached epidemic proportions– 10.6 million cases globally. The problem is exacerbated by the shortage of radiologists in underserved regions where there are a significant number of TB cases.

In the Philippines, more than **60** people die every day due to TB, and **573,000** people are infected every year. Another **65,000 TB** cases remain undetected and untreated altogether. Many individuals may spread the illness through human-to-human contact before they are even aware they are sick, making transmission throughout families, communities and shared places of work problematic. TB is curable when treated promptly, but without proper diagnostics and drug treatment, the disease is often fatal.

The problem is especially exacerbated by a shortage of qualified radiologists (even in urban areas) able to administer and properly read lung X-rays—a standard means of diagnosis for TB. The solution for a TB-free Philippines is a combination of early detection and uninterrupted treatment. To combat this threat, the Philippine Business for Social Progress is working through the ACCESS TB project to help screen for TB.

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Results Summary

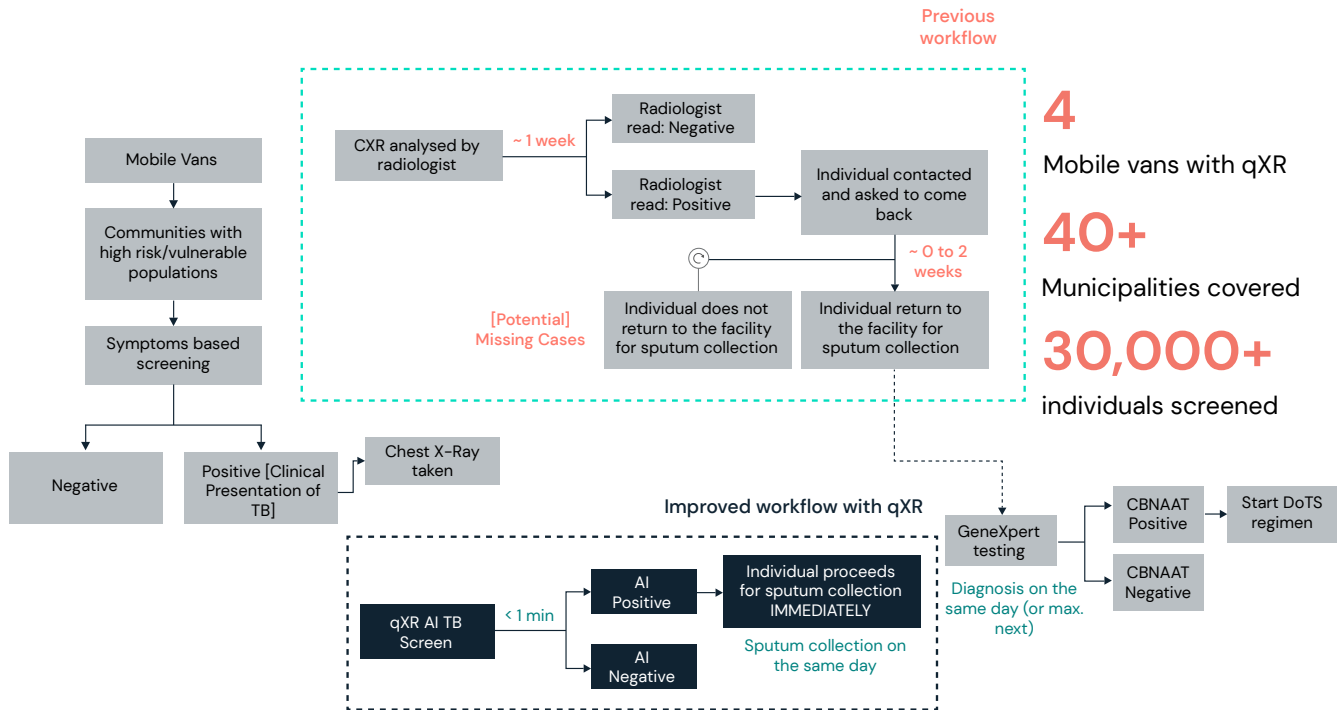| 200,000+	8700
high risk/vulnerable individuals for TB Screened.	TB cases diagnosed and notified through community-based screening

ACCESS TB project uses Qure.ai-powered scans, delivered by remote mobile teams, to make a more accurate TB diagnosis in a few hours, rather than having a patient wait days, or even weeks, for available services and results. Bringing the diagnostic care right to the patient's location is enabling a diagnosis to be made in a timeframe that vastly improves patient outcomes. Specifically, the Qure solution qXR automates the chest X-ray interpretation process. When used as a point-of-care screening tool, followed by immediate bacteriological/NAAT confirmation, Qure significantly enhances the on-site physician's ability to treat the patient while he or she is still at the clinic. With typical X-ray and test turn-around times, the patient is often gone—and "lost" to the doctor—once the results actually come in. By that point, an infected patient may have spread the illness to family members and others in the community, not to mention worsening their own prognosis with delayed treatment.

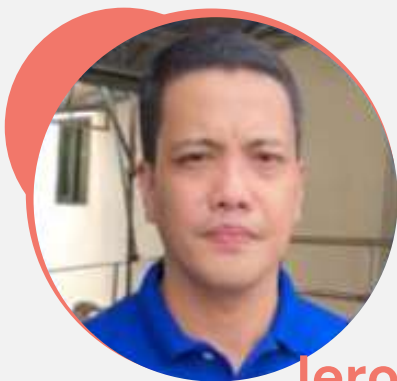Towards the goal of supporting DOH-NTP in finding missing persons with TB in the Philippines, PBSP was one of the first adopters of Artificial Intelligence aided Tuberculosis detection in the Philippines. Qure, in partnership with PBSP, is helping accelerate the work of bridging the large gap between TB incidence and TB notification in the country through Qure's AI-backed solution, qXR. qXR automates what was previously the most time-consuming process within the program - Chest X-Ray interpretation, due to the paucity of radiologists in high burden healthcare settings such as the Philippines. This results in patients dropping out of the TB care cascade, as most come from poor socio-economic backgrounds and are unable to make multiple trips to receive care due to limited affordability. As a part of ACCESS TB's active case finding activities, four mobile vans were equipped with qXR software for performing screenings in populations at high risk.

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qXR's role in ACCESS TB's Active Case Finding

Previous workflow

Mobile Vans → Communities with high risk/vulnerable populations → Symptoms based screening → Negative / Positive [Clinical Presentation of TB] → Chest X-Ray taken

CXR analysed by radiologist → ~1 week → Radiologist read: Negative / Radiologist read: Positive → Individual contacted and asked to come back → ~0 to 2 weeks → Individual return to the facility for sputum collection

[Potential] Missing Cases — Individual does not return to the facility for sputum collection

4 Mobile vans with qXR

40+ Municipalities covered

30,000+ individuals screened

Improved workflow with qXR

qXR AI TB Screen → <1 min → AI Positive / AI Negative → Individual proceeds for sputum collection IMMEDIATELY — Sputum collection on the same day

GeneXpert testing — Diagnosis on the same day (or max. next) → CBNAAT Positive → Start DoTS regimen / CBNAAT Negative

Testimonial

Qure.ai's complete TB software is very helpful in maximizig our time – now we can keep track of the entire patient workflow in one place

Speaking about the Qure.ai End to End TB solution being used in Philippines.

Jerome Triñona,

Account coordinator – ACCESS TB Project, Philippine Business for Social Progress