

Using mHealth to combat multidrug-resistant tuberculosis across Vietnam

A pilot digital system that supports adherence to tuberculosis treatment is used nationwide

THE RISE OF MULTIDRUG RESISTANCE IN VIETNAM

There are an estimated 137 new tuberculosis (TB) cases per every 100,000 people in Vietnam every year. The country currently ranks 15th out of the 30 highest TB-burden countries identified by the World Health Organization. In most cases, people are cured of the disease with proper treatment. But in some cases, patients fail to complete medication regimens, leading to the rise of multidrug-resistant TB (MDR-TB) in Vietnam.

While the treatment success rate is greater than 90 percent, it is lower in remote areas of Vietnam. Currently, 25 percent of recurring cases are MDR, as are 4 percent of new cases. Innovative approaches to ensure TB treatment adherence are urgently needed to reduce the spread of MDR-TB.

HARNESSING THE POWER OF MOBILE AND DIGITAL TECHNOLOGY

In the last decade, mobile phones and Internet technology have become increasingly accessible and affordable in Vietnam. Total subscriptions now significantly exceed the total number of people, and signal coverage is widespread, even in remote areas.

PATH recognized the potential of digital technology to help TB patients stay on track with their medications and medical appointments. With support from the Global Fund to Fight AIDS, Tuberculosis and Malaria, and working with the National Tuberculosis Control Program (NTP), PATH began testing a web- and mobile phone-based system for TB treatment adherence in Ba Ria-Vung Tau Province in 2013.

This system aimed to both help patients to self-manage and enable health care workers to more efficiently and effectively monitor their progress.



The mHealth system encourages TB patients to attend appointments on time. Photo: PATH

“Before, many patients forgot to take their medication because the course of treatment was so long. With the software reminding patients regularly, cases where my patients forgot or stopped taking their medication were very rare. That was wonderful!”

TB staff member in Ba Ria City

Throughout the course of treatment for TB, treatment regimens and drug prescriptions are directed by the results of sputum smear tests—if TB patients do not take these tests on time, they will have a gap in treatment, increasing the risk of drug resistance.

In an evaluation of the pilot in Ba Ria-Vung Tau in 2015, the combined system of patient-tracking software and SMS reminders was shown to contribute significantly to the rate of people getting their final test (the third sputum smear test) on time, which grew from 44.6 percent to 82.6 percent.

Following this success, in 2016 the NTP expanded the model to cover two more provinces, Hai Phong and Thai Binh. In June 2017, the NTP instructed that the system should be used nationwide, in all 63 provinces of Vietnam.

HOW IT WORKS: MOBILE MESSAGES KEEP PATIENTS ON TRACK

- TB patients nationwide receive SMS messages throughout their course of treatment. Generated automatically through the digital system, these messages include general information about TB, TB treatment, and side effects, and specific reminders to take medication and attend sputum tests.
- Message content and frequency are aligned with patient needs and treatment schedules.
- Patients have the option to send SMS messages back to the system to report their drug intake or side effects in treatment. These messages are forwarded to their treatment supervisors for follow-up.

“SMS [reminders] worked well to remind me to take my medication so I can get better sooner.”

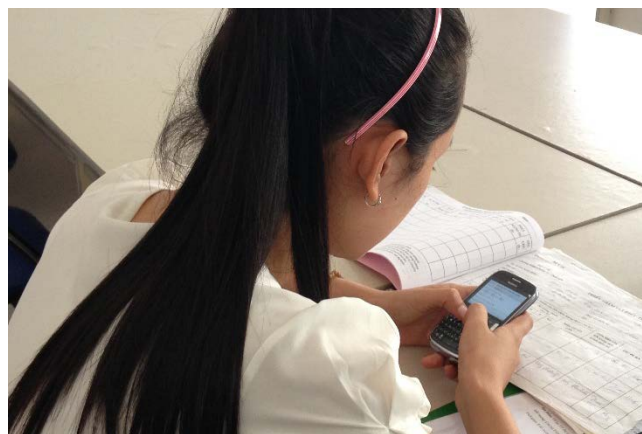
—TB patient in Ba Ria City

HOW IT WORKS: DIGITAL SOLUTIONS IMPROVE WORKPLACE EFFICIENCY

- Treatment supervisors access software from a web-based application at the Commune Health Center or from the field via a mobile phone-based application.
- The system links health staff to the Vietnam TB Information Management Electronic System (VITIMES), providing quick access to listings of TB patients in their area, including information about their disease, treatment regimen, missed appointments, or side effects.
- Treatment supervisors use their mobile phones to record supervision activity and patient updates.
- Program managers have real-time access to patient treatment adherence information.

“[The software] helped by providing a list of patients due for testing. If [we saw that] patients hadn’t come in, we went down to the commune.”

—District NTP staff member



Health workers can use their phones to record TB patient updates.
Photo: PATH.

LONG TERM IMPACT: THE JOURNEY FROM PILOT TO SCALE-UP

PATH’s approach of working closely with partners on evidence-based pilots encourages the timely acceptance and replication of successful interventions, using the Vietnamese government’s own resources.

Working closely with the NTP from the beginning of the pilot project made it easier for the Vietnamese health authorities to understand and see the benefits of the digital and mHealth tools. Ensuring that the pilot system was already linked to VITIMES facilitated scaling up the application to other regions.

The end-of-pilot evaluation in Ba Ria-Vung Tau generated a compelling case for the NTP to replicate and scale up the initiative using their own resources; the results from the evaluation were included in the instructions from the director of the NTP to provincial, district, and commune leaders as justification for the introduction of the system.

The decision by the NTP to scale up the mHealth and digital TB treatment adherence system nationwide is one that could greatly contribute to the reduction of MDR-TB in Vietnam, resulting in longer and healthier lives for many people.



www.path.org

PATH is the leader in global health innovation. An international nonprofit organization, we save lives and improve health, especially among women and children. We accelerate innovation across five platforms—vaccines, drugs, diagnostics, devices, and system and service innovations—that harness our entrepreneurial insight, scientific and public health expertise, and passion for health equity. By mobilizing partners around the world, we take innovation to scale, working alongside countries primarily in Africa and Asia to tackle their greatest health needs. Together, we deliver measurable results that disrupt the cycle of poor health. Learn more at www.path.org.

Vietnam Office
11th Floor, Hanoi Towers
49 Hai Ba Trung St.
Hoan Kiem District
Hanoi, Vietnam

Tel: +84 4 936 2215
Fax: +84 4 936 2216

www.path.org