



FROM DATA TO IMPACT

Implementation Summary

Country	Papua New Guinea
Laboratories	24
Diseases	TB, RR-TB
Devices & Assays	GeneXpert
Funding Partner	- DFAT (seed funding for two pilot sites) - TB Global Fund Grant (World Vision Principle recipient)
Local Heroes	Leads: Dr. Evelyn Lavu Ms. Jennifer Banamu Ms. Karen Johnson Team Members: Ms. May Keket Ms. Jennifer Dume

THE CHALLENGE: PAPER-BASED SYSTEMS – INFRASTRUCTURE-CHALLENGED LANDSCAPES

Healthcare workers in Papua New Guinea (PNG) relied on paper-based systems for tracking and communicating patient diagnostic data between provincial hospitals where GeneXpert instruments are located, to remote clinics where samples are collected and patients are located and to the National Department of Health staff. This involves sending a sample to a provincial hospital, documenting the diagnostic result on paper for the clinical TB team, locating the patient and connecting the patient to treatment if needed. The GeneXpert has been utilized to screen presumptive drug-resistant (DR) TB and most at risk population patients throughout PNG and most recently, as the initial diagnostic test for presumptive pulmonary tuberculosis cases.

In this system, a symptomatic patient will generally wait for a diagnosis after returning home and is usually asked to return to the clinic in a week for their result. Patients often live far from a clinic and have limited transportation options. Yet the week or more that it can take between testing and providing a patient with diagnosis are critical, particularly in the case of DR-TB.

In addition to the difficulty of identifying, informing and commencing DR-TB patients on appropriate treatment, PMDT clinics keep a minimal stock of second-line drugs (SLDs) onsite, as storage is often limited and to prevent expiration of SLDs, they are dispatched according to a notified rifampicin resistant (RR) TB case.



Wesey Girinde (in mask) and Jennifer Kopania Banamu at the Morobe GeneXpert installation



SOLUTION:

Papua New Guinea first installed the GxAlert system in May 2015, and have been using the system for clinical and logistical work ever since. On the clinical side, the PNG team have been able to use GxAlert to dramatically reduce time-to-treatment. In one recent situation, within moments of a clinician receiving an SMS message with a patient's test result, an ambulance was dispatched to the patient's home and the patient was brought to the Provincial Hospital and immediately commenced on appropriate treatment.

"In a total of 15 minutes the physician got the alert, arranged for an ambulance, and retrieved the patient to initiate treatment," said Jennifer Banamu (Acting Officer-in-Charge TB Unit, Central Public Health Laboratory) "If it wasn't for GxAlert, we wouldn't have known until the hard copy result was dispatched to the TB clinic, and then we would have had to alert the physician and locate the patient."

PNG is initially focused on making use of the following GxAlert benefits:

- Rapid case notifications for all positive results to all relevant healthcare officers
- Inventory management and notifications to reduce stockouts and expiry
- User-friendly calibration notifications to keep instruments maintained

An Important GxAlert Benefit: The understanding of accurate diagnosis, and therefore drug requirements, in different regions provided by GxAlert impacts the timely dispatch of second-line drugs and the reduction of the commencement of appropriate treatment to the patient. National Area Medical Stores are now able to dispatch the required allocation of drugs to treatment facilities and ensure that fragile second-line drugs can remain safely stored at central facilities until required.

MOVING FORWARD:

As PNG anticipates the rollout of further GeneXpert instruments including expanding the use as the initial diagnostic test for presumptive pulmonary TB cases, the national TB program intends to expand its use of GxAlert notifications to all new and existing GeneXpert locations. Clinical teams are working with SystemOne on custom algorithms to utilize the tools and notifications that are most effective in the context of the country.

The country also intends to use GxAlert with Hain LPA and BD MGIT instruments in the future. PNG is seeking additional funding to continue using GxAlert and to expand the program.



Left to right: (front row) Dr Everlyn Lavu- Director CPHL, Jennifer Kopania Banamu Giggey Nidue and (back row) James Nanson, Roselyn Mano, May.V. Keket, Jennifer Dume at World TB Day 2018