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TUBERCULOSIS PREVENTION PROJECT

CREATING INNOVATIVE STRATEGIES FOR EARLY TB CASE DETECTION AND QUALITY IMPROVEMENT OF CARE

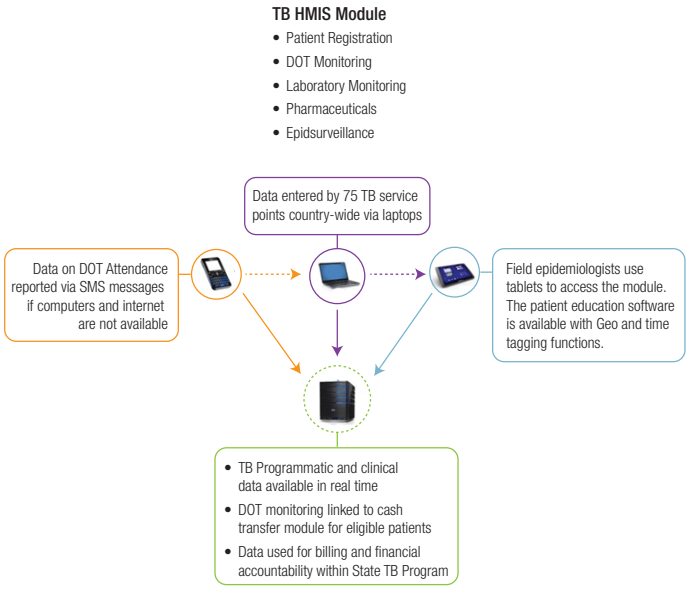
As the health system in Georgia has gone through fundamental changes over recent years, the context for tuberculosis (TB) and multidrug-resistant tuberculosis (MDR-TB) case detection and treatment has become more complex. The USAID Georgia Tuberculosis Prevention Project (TPP) implemented by University Research Co., LLC (URC) together with the Government of Georgia and other stakeholders currently plays an integral part in the fight to eradicate TB in the country. These efforts focus on improving detection of TB suspected cases in general health facilities, strengthening the quality of full implementation of Directly Observed Treatment Short-Course Strategy (DOTS), improving access to treatment and care for MDR TB patients, and updating the infrastructure of recently established private treatment sites to meet TB best practice standards and provide infection control.

Since 2012, TPP has employed a wide range of strategies to improve early case detection and strengthen the quality of DOTS and DOTS plus, particularly through wide-scale training and support of physicians and nurses, as well as media campaigns targeting people at the greatest risk of contracting TB. It is the third objective, updating the infrastructure of TB treatment sites, where TPP now has an exciting opportunity to employ innovative strategies for avoiding TB transmission in hospital settings.

Real time, reliable, and comprehensive data systems are vital to support TB patient management, and to assist providers and patients in tracking improvements over the 6-month (or 24-month for MDR TB patients) treatment period. Accurate data on patient status and outcomes is also critical to support health planning and resource allocation. In the context of widespread reforms to the health sector (encompassing all aspects from infrastructure development, to personnel management, to clinical policies, and financing), the Government of Georgia has prioritized the use of information technologies to streamline and update data systems, including those for TB. TPP has responded by supporting a range of connected health platforms to help meet project objectives. The project has assisted in introducing an innovative range of uses for mobile phones, tablets, and web-based learning systems to enable optimization of communication, sharing, and exchange of information, images, and data among healthcare professionals, and with patients, wherever they are located.

Integration of the TB System in the National Health Management Information System

To support implementation of the mHealth approach, TPP collaborated with the USAID Health Systems Strengthening project to develop the TB health management information system (HMIS) as part of the larger, national HMIS program. This system is composed of TB case registration, laboratory test results, prescription and treatment monitoring components. The TB HMIS module works by allowing providers to upload data to the national system quickly for each patient with TB or suspected TB. The module can be accessed through computers or mobile devices such as smartphones and tablets. The Ministry of Labor Health and Social Affairs (MoLHSA) plans to use the module for generating case-based financial reports and simplifying billing and financial transection through electronic reporting within the State TB Program. To support wide-spread implementation of HMIS in Georgia, TPP purchased laptops to be used in TB service points and conducted trainings on how to use the system.



TB HMIS Module Flow of Information

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SMS

Most DOTS therapy in Georgia is facility-based rather than in-home, with as much as 17-24% of patients seeking treatment at primary health care centers. Additionally, since most physicians and nurses at PHC service points lack computers and reliable internet access but have steady access to cell phones with SMS technology, the TB electronic module accepts SMS-based information on DOT attendance and links this to the DOT monitoring component. Primary care providers can send SMS with a unique patient ID and a code upon completion of a DOT session, which is then integrated into the TB HMIS module. This system will allow district level providers and National Center for Disease Control and Public Health (NCDCPH) epidemiologists to track DOT implementation in real time.

Tablet-Based Solutions

Late TB detection and the high rate of MDR TB treatment lost-to-follow-up are major challenges of the National TB Program in Georgia. NCDCPH staff were recently mandated to conduct intensive contact tracing, encourage referral of high-risk individuals to TB services, and support non-adherent patients to complete treatment. TB specialists are obliged to inform the public health service immediately (within 24 hours) upon confirming TB diagnosis. NCDCPH staff should identify and visit household and close contacts of a newly diagnosed TB patient and refer them to the nearest TB facility. TB specialists complete a special notification form to inform the public health service about a new TB case.

Given that NCDCPH epidemiologists conduct extensive field work and frequent home visits, a paper-based system of exchanging information is inefficient and counter-productive. To remedy the problem of delayed reporting and referrals, a tablet-based application for epidemiologist is the most logical solution, which will be completed by the end of June.

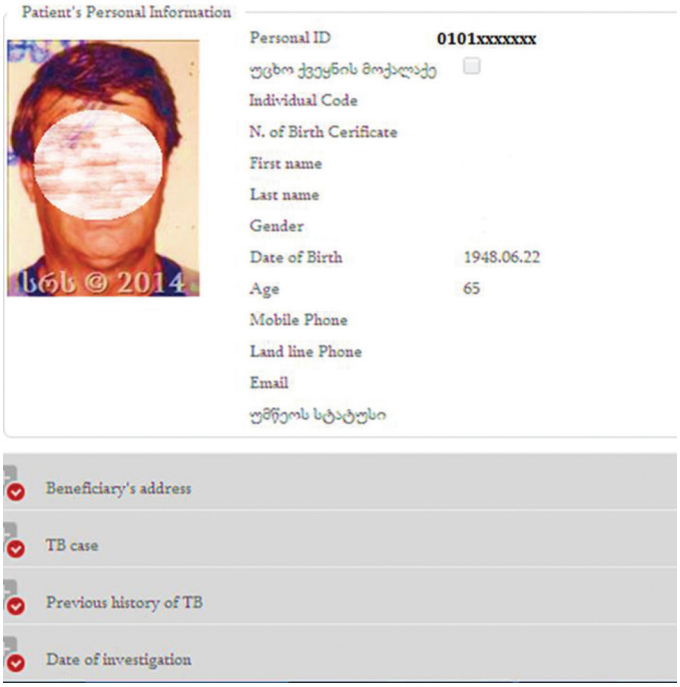
Additionally, NCDCPH epidemiologists and TB service nurses work closely with TB patients and their families on a daily basis, and are thus in a unique position to provide patient education and counseling that supports adherence to treatment. An Android-based patient education module will be developed that can be used by both. In FY2014, TPP will provide tablets for NCDCPH epidemiologists and pilot this new approach. If proven successful, the pilot will be extended to other professionals involved in TB patients' education and counseling.

Improved Use of Data for Decision Making

The TB HMIS allows health professionals to collect and analyze data on the scope of TB in Georgia, which helps to inform national program planning and policymaking. By pinpointing where TB is occurring in real time, epidemiologists, health care providers, and policymakers will be able to target resources quickly to those patients and regions, whereas traditional methods of data collection and tracking could lead to delays of months or years in providing those resources to high-risk populations. Additionally, policy makers will be able to develop effective communication strategies to target those populations that are at the greatest risk of contracting TB.

Patient Management

Given that the treatment for drug-susceptible TB takes several months, and MDR TB requires two years of daily therapy, there are many avenues for patients to be lost to follow up. The



Case registration is key to effectively managing and tracking patient data. It contains information about personal data linked to the civil registry, as well as demographic data, address, and history of previous treatment.

Georgia mhealth and HMIS systems will give TB care providers access to patient data from the time the patient is referred for services, regardless of where the patient enters the system, to the time the patient completes the treatment or otherwise leaves the system. This system will allow health care workers to target those patients who are most at risk for not completing the treatment with appropriate supports by providing a built-in system for monitoring patient DOTS and side effects over time.

Monitoring Social Support Services

Among the numerous barriers to seeking and completing treatment for TB is the lack of financial and social support in place for many patients, a considerable number of whom live in remote rural areas. One method of ensuring adherence to treatment is to provide cash incentives to patients for continuing to take the medications, which often gives them critical access to transportation and healthy food, among other necessities. Monitoring who has received what support can often be difficult in these rural areas, but the HMIS system will give both health care workers and policy makers crucial data on who is receiving these incentives and how effective they are.

Supervision and Follow up

Along with effectively managing patient care and social support services, HMIS in Georgia will allow for appropriate monitoring of health care workers to target supervisory activities where they are most needed. A DOTS provider who is not regularly meeting with TB patients for their treatment or appropriately addressing side effects can be identified for additional supervision and support. Android based applications for epidemiologists are time and Geo tagged for quality monitoring. Data will be generated and analyzed on frequency and duration of counselling sessions for TB patients with poor adherence history. This can be linked to their performance at DOT sessions to assess effectiveness of educational interventions.