

New TB Medicines

The first new TB medicines in more than 40 years—bedaquiline and delamanid—were recently released onto the market for the treatment of MDR-TB. Since then, these medicines have also been used to treat TB patients who have experienced life-altering side effects or developed intolerance or resistance to some second-line TB medicines. In 2015, USAID and Janssen Pharmaceuticals announced a donation of 30,000 treatments of bedaquiline to treat DR-TB patients. However, uptake has been slow by countries for myriad reasons, including a lack of expertise, infrastructure, and appropriate systems to monitor the efficacy, safety, and potential adverse effects of these medicines. Consequently, there is an increased demand from countries for knowledge on how to manage patients on these new TB medicines and regimens and for technical assistance on overall programmatic implementation.



Approach

In the adoption of new TB medicines and regimens, SIAPS works with countries to use a systems strengthening approach that involves engaging and coordinating stakeholders, building upon existing systems or establishing new ones where appropriate, strengthening human resources via trainings, strengthening the distribution chain for new TB medicines, and recording and reporting information for decision making in relevant areas.

In the area of management of patients on new TB medicines and regimens, SIAPS works with NTPs to host training workshops that target frontline health care workers, MoH staff, and NTPs with the aim of addressing the knowledge gap. In the area of active surveillance of patients on new TB medicines and regimens, SIAPS works with NTPs and appropriate national regulatory bodies to establish or strengthen active surveillance systems to determine the real-life frequency, risk factors, and impact of clinically significant adverse medicine events on treatment outcomes. SIAPS promotes stewardship and pharmaceutical governance by working with NTPs to coordinate all in-country partners and define roles and responsibilities for the programmatic implementation of these new medicines and regimens. This is in keeping with the overall aim of preventing the occurrence of parallel systems and duplication of efforts in resource-limited settings.



Results

Since April 2015, SIAPS has provided technical assistance to five countries in the programmatic implementation of these new medicines and regimens, including training health care workers. This technical assistance includes training hundreds of health care workers and NTP and MoH staff on how to use and monitor adverse events of new TB medicines and regimens. For example, with SIAPS support, Georgia gained access to medicines from the Bedaquiline Donation Program and successfully implemented them in October 2015. To date, more than 250 patients in Georgia have been treated with bedaquiline. Georgia has also adopted the Pharmacovigilance Monitoring System (PViMS), a SIAPS-developed, web-based application used by clinicians, regulatory bodies, and implementing partners to monitor the safety and effectiveness of medicines, including the new TB medicines. In July 2016, SIAPS formally handed PViMS over to the National Center for Tuberculosis and Lung Diseases in Georgia to collect data from sites across the country and support serious adverse event monitoring.

SIAPS has also worked with NTPs, regulatory bodies, and partners in Kenya, Philippines, Uganda, and Swaziland to start patients on treatment. In Swaziland, 68 patients have been treated with bedaquiline and delamanid, while in Philippines, 11 patients have begun treatment with bedaquiline. From April to August 2016, more than 160 health care workers from 15 treatment initiation sites in Uganda were trained on how to manage patients on bedaquiline, delamanid, and the nine-month regimen.

SIAPS also developed resources and training materials for the introduction of new TB medicines, including a website (www.newTBdruginfo.org) with resources for program managers, MoH staff, and health care workers and an upcoming eCourse on the use of new TB medicines and regimens, which will be available on leadernet.org.

By strengthening pharmaceutical systems in-country to scale up treatment for DR-TB using the most effective treatments, SIAPS is contributing to the End TB Strategy to achieve global targets to end TB.

ABOUT SIAPS | The Systems for Improved Access to Pharmaceuticals and Services (SIAPS) program works to assure access to quality pharmaceutical products and effective pharmaceutical services through systems-strengthening approaches to achieve positive and lasting health outcomes. SIAPS is funded by the US Agency for International Development (USAID) and is implemented by Management Sciences for Health. For more information, visit www.SIAPSprogram.org.



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PHARMACEUTICAL MANAGEMENT FOR TUBERCULOSIS



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SIAPS
Systems for Improved Access to Pharmaceuticals and Services

The Systems for Improved Access to Pharmaceuticals and Services (SIAPS) Program, funded by the US Agency for International Development (USAID), provides technical leadership in pharmaceutical management for global tuberculosis (TB) initiatives, donors, and national TB programs (NTPs). SIAPS targets results areas that are vital for stronger health systems, such as improved governance, increased capacity for pharmaceutical management, and information for decision making. By implementing activities addressing rational medicine use, supply planning, and public-private partnerships, SIAPS helps meet the challenges of TB medicine management.



Photo taken by: William Vazquez

Drug Use Reviews

Treatment for multidrug-resistant TB (MDR-TB) is expensive and involves regimens with toxic medicines that often produce severe, and sometimes permanent, side effects. NTPs in resource-limited settings do not always systematically monitor the use of MDR-TB medicines, which may result in patients not complying with their medicine regimen, worsening disease, or the spread of MDR-TB. Drug use reviews (DURs) are used to identify common problems in medicine management, such as erroneous dosing, avoidable side effects, and incorrect medicine selection. When applied to anti-TB medicines, DURs can help prevent the development of further medicine resistance, optimize patient outcomes, and ensure patient safety.



Approach

SIAPS developed the *Guidelines for Implementing Anti-Tuberculosis Drug Use Review Programs*, a complete package of materials with step-by-step instructions on setting up a DUR system. By compiling treatment information from textbooks, medicine package inserts, and World Health Organization (WHO) guidelines, SIAPS created evidence-based data collection forms and indicators for monitoring anti-TB medicine use and managing adverse medicine reactions. The guidelines also include suggestions for improvement strategies. SIAPS provides training on using the guidelines and support during the initial phases of countrywide DUR program implementation.



Accomplishments

The guidelines have been field tested at six high-burden MDR-TB facilities in Kenya, and the testing resulted in immediate revisions to the country's *Guidelines for the Management of Drug Resistant Tuberculosis*. In addition, DUR programs have been implemented in Ukraine and Uzbekistan, and SIAPS is providing further assistance to Ukraine to implement a DUR for antiretroviral therapy in HIV and TB facilities. In Uzbekistan, the first DUR provided detailed recommendations for updating the drug-resistant TB (DR-TB) treatment guidelines for monitoring and managing adverse medicine reactions. A second DUR is currently planned. DUR programs are under way in Bangladesh and Swaziland. Data collected during the reviews and results are being analyzed to identify, resolve, and prevent any problems related to the appropriate use of medicines or regimens.

Strengthening the capacity of providers to ensure that MDR-TB patients are receiving appropriate treatment and are managed according to international standards by implementing a DUR program could save many lives and reduce the occurrence of new MDR-TB cases.

Regional Approach to Technical Assistance

Despite increased funding and the establishment of global initiatives, such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria, many countries continue to face shortages of quality assured first- and second-line anti-TB medicines.



Approach

SIAPS provides continuous technical assistance through regional advisors to 13 countries in Africa, Asia, and Eastern Europe to ensure an uninterrupted supply of all TB medicines by preventing stock-outs and minimizing wastage of resources from expiries. The regional advisors provide technical assistance to national TB programs and partners to strengthen drug management practices, build local capacity, ensure the availability of quality pharmaceutical products, and support the implementation of effective pharmaceutical services for achieving global TB program targets.



Results

As part of SIAPS' efforts to strengthen countries' quantification and forecasting capacity and establish an early warning system to prevent stock-outs and minimize TB medicine wastage, the capacity and skills of more than 300 people, including representatives from NTPs and Ministries of Health (MoHs) from 32 countries, the Global Fund and GDF, WHO, and local and international partner organizations, have increased.

Within three years of implementing QuanTB, 15 countries shared their quarterly quantification updates with SIAPS. During a recent in-depth review of five countries (Ethiopia, Nigeria, Tanzania, Kenya, and Zimbabwe) that received technical assistance from SIAPS regional advisors, stocks-outs of TB medicines decreased from 38% to 0% for first-line medicines and from 17% to 0% for second-line medicines between February 2014 and December 2015. SIAPS regional advisors worked with NTPs on appropriate actions on how to prevent imminent stock-outs or minimize wastage and implemented these actions based on QuanTB data for each country, including cross-border transfer of stock, order postponement, splitting of shipments, and in-country redistribution.

As a result of the SIAPS technical assistance, postponement of pending shipments that could potentially have expired if they were received in-country helped save more than USD 7.1 million in these five countries alone between December 2014 and June 2016. Cross-border transfer of excess stock at risk of expiring contributed to more than USD 1.4 million in savings during that time period. Partnership with the Global Fund; and improving coordination between MoH agencies, donors, and implementing partners. In addition to improving TB medicine forecasting, supply planning, and procurement practices, data from this system also highlighted weaknesses in TB patient management, TB recording and reporting practices, and inventory management.

QuanTB

Ensuring that patients have continuous access to TB treatment requires complex projections and calculations by TB program staff. Making these predictions is becoming more challenging as new diagnostic devices rapidly increase the number of individuals diagnosed, which affects the quantity of medicines needed. In addition, when treatment regimens change because new medicines or guidelines are introduced, national programs must carefully plan how to phase medicines in and out to avoid stock-outs or expiries. Frequent quantification and vigilant stock management are vital to ensuring that the appropriate types and quantities of medicines are available to meet the evolving needs of TB programs as they scale up treatment.



Approach

To promote a systems-strengthening approach to TB medicines management, SIAPS developed QuanTB—a downloadable desktop tool. QuanTB is an electronic quantification and early warning system designed to improve procurement processes, ordering, and supply planning for TB treatment. QuanTB transforms complicated calculations into user-friendly graphs that display key information for managing medicines. When used on a monthly or quarterly basis, QuanTB serves as an early warning system by providing information on actual versus planned consumption, medicine needs, impending expiries, and stock-outs. Currently on its fourth iteration, QuanTB 4.0 features enhanced supply planning by allowing users to plan their preferred schedule of regular orders (i.e., quarterly or bi-annually) and emergency orders. It also provides graphs showing the progression of stock on hand over time in relation to the set minimum and maximum months of stock for each medicine.



Results

SIAPS has trained NTP medicine management staff from 32 countries, other organizations, and independent consultants to use QuanTB for the quantification and tracking of TB medicines. QuanTB use has been further expanded and the tool has been implemented in additional countries by partners such as the Global Drug Facility (GDF), KNCV, and the Eli Lilly Foundation. QuanTB has been downloaded more than 1,650 times.

Public-Private Partnerships

It has been well documented that in many high-burden TB countries, people with TB-like symptoms commonly seek care first from the private sector, and retail pharmacies are often the first point of care because they offer convenient hours, geographic accessibility, no consultancy fee, and privacy. However, until recently, private-sector services for TB had not been enlisted in TB case detection efforts and they are often disconnected from the NTP, which may delay diagnosis and limit a patient's access to quality, affordable treatment. Despite the demonstrated need, there are limited models of private-sector involvement, especially pharmacies, in TB diagnosis and treatment, particularly in the context of different country environments.



Approach

In accordance with the global strategies of the Stop TB Partnership and the US Government, SIAPS has developed a strategic approach that begins with compiling in-country information on the TB/DR-TB situation in the private sector. SIAPS then collaborates with key stakeholders to design environment-specific interventions based on the collected data. SIAPS has piloted unique public-private partnership activities in Tanzania and Pakistan to explore the potential of increasing TB diagnosis. In both countries, SIAPS spearheaded assessments of knowledge, attitudes, and practices of private pharmacies and medicine shops and then used the findings to develop interventions to establish referral mechanisms between private retail outlets and TB diagnostic centers under the leadership of the respective NTPs.



Results

In Tanzania, 587 clients with TB-like symptoms were referred to TB diagnostic and treatment centers by the 588 participating outlets. Records for 38% (223 out of 587) of clients referred were tracked and located at the health facilities. Of those, 83% (186 out of 223) were sent for sputum investigation, and from these, 43% (81 out of 186) were confirmed as having TB. Based on these findings, SIAPS assisted the NTP in developing a scale-up strategy that has since been approved for funding by the Global Fund.

In Pakistan, 502 pharmacies in six major cities were part of the pilot; these trained pharmacies referred 1,071 presumptive TB cases to public-private mix general practitioners and public-sector basic health units over a period of eight months. Of these, 829 (77%) were traceable, and 198 (18%) of the total referred were confirmed as having TB. On December 10, 2015, a national-level dissemination meeting was held with 25 participants from donor agencies, the NTP, implementing partners, and pharmacy schools. As a result of the pilot study and this meeting, the NTP has made a policy decision to include private pharmacies in the 2020 national strategic plan for TB control. SIAPS supported the NTP in the development of a concept note and tentative budget. In 2016, with support from the Global Fund, the NTP and the Provincial TB control program and partners have been implementing the project on a national scale with a phased approach.

Results from these pilot studies have shown that establishing a mechanism to refer patients from private medicine outlets to TB diagnostic facilities, combined with enhancing dispensers' TB symptom knowledge and providing the necessary tools, expands NTPs' reach and has the potential to significantly increase TB case identification.

e-TB Manager

Managing information for adequate TB program support requires the integration of data from various health system elements and levels. The high prevalence of DR-TB and extensively drug-resistant TB (XDR-TB) is a significant health challenge in many countries and increases the need for tools that promote effective case management and ensure an uninterrupted supply of TB medicines.



Approach

SIAPS and its predecessor programs designed e-TB Manager, which is a health systems strengthening platform for managing information needed by NTPs. e-TB Manager integrates data across most aspects of TB prevention and care, including reporting and follow-up of presumptive and confirmed TB and DR-TB cases, medicines management, and laboratory testing. The data analysis feature also allows for the creation of custom reports and indicators.



Results

Over the last several years, e-TB Manager has been successfully implemented in 10 countries and has been used at more than 2,500 sites to manage more than 550,000 TB cases (all forms) worldwide. Selected countries using e-TB Manager benefited from improved quality, timeliness, and completeness of data by reducing supervision visits by 70% and from improved treatment adherence with built-in alerts by maintaining a DR-TB cure rate of approximately 60% while doubling case reporting. In addition, e-TB Manager promoted countrywide TB monitoring and surveillance by identifying high- and low- performing TB sites and helped target interventions. To meet the evolving needs of NTPs, the new version 3.0, a downloadable platform with the ability to run offline to minimize internet connectivity challenges, was released this year. The new version has an improved interface and user-friendly layout.