How low can we go?

Introduction
Malaria incidence in Latin America and the Caribbean has decreased by 65% from 2000 to 2015, which has resulted in a significant challenge for maintaining the availability of quality antimalarials and other key interventions. The Amazon Malaria Initiative (AMI) is a regional partnership supported by USAID that assists countries to address these challenges by implementing best practices for malaria prevention and control. AMI is affiliated with the Amazon Network for Antimalarial Drug Resistance Surveillance (RAWRES), which is the regional network of national malaria control programs that monitor antimalarial efficacy. Participating countries receive technical assistance from the Pan American Health Organization (PAHO/WHO), the USAID-funded Systems for Improved Access to Pharmaceutical Supplies and Services program (SIAPS), the Promoting Quality of Medicines program (POQM), U.S. Centers for Disease Control and Prevention (CDC), and Links Media. AMI promotes the use of networking and systems strengthening to improve access to diagnosis and treatment, pharmaceutical supply management, quality control of medicines, epidemiological surveillance, vector surveillance and control, and the monitoring of antimalarial efficacy in order to continue to reduce the region’s malaria burden.

Methods

Regional Monitoring System
AMI countries reviewed stock levels in 2009 and discovered stock shortages in some countries and warehouses in order to correct this problem. AMI proposed a regional monitoring system for antimalarial stock with the following characteristics:
- One indicator based on information already available, to be used to complete a quarterly report.
- Two data collection points for the indicator—the national medical stores and the regional stores. In most countries, a stockout in a peripheral facility could be corrected in 24 hours, but a stock-out in the central warehouse (usually due to deficient procurement practices) would take 3–12 months to correct, depending on the procurement cycle.
- Information immediately used at the data collection point to correct identified antimalarial supply problems.

Minimum Stock Levels in Health Facilities
In many countries in the Americas, medicines are ordered and supplied based on past consumption. Therefore, regions/districts and departments without recent consumption could not stock medicines to treat illnesses not present in those regions of the country. This leaves regions unprepared to treat people with illnesses which were not common in that region and unable to deal with outbreaks. AMI worked with the countries to incorporate strategies to ensure all health facilities would have antimalarial treatments available to treat outbreaks or reintroduction of malaria.

Countries developed minimum stock levels for antimalarial availability in participating countries based on epidemiological data in the regions, departments, and available medicines in the country. Countries set minimum stock levels of medicines to treat Plasmodium falciparum, Plasmodium vivax, drugs used to treat severe malaria and special cases for health facilities and regional and central warehouses. The goal was to ensure medicines were available in all facilities in the country. (Should we show an example?)

Pooled Procurement
The pooled procurements were conceived to help countries that were having difficulties procuring small quantities of antimalarials to meet their needs. AMI developed a pooled procurement mechanism to help medium and small countries in Latin America to avoid stock-outs and expired medicines. The World Health Organization (WHO), in collaboration with AMI, developed a pooled procurement strategy that allows countries to purchase antimalarials in bulk and receive them in one shipment. This strategy is designed to improve the availability of medicines to treat malaria in all countries in the region. The pooled procurement strategy involves the following steps:
- Countries set minimum stock levels for each antimalarial in their national health systems.
- Countries place orders for antimalarials with the WHO, which acts as a regional procurement agency.
- The WHO processes the orders and ships the antimalarials to the countries.
- Countries receive their share of the pooled procurement.

Results

Regional Monitoring System
Since June 2010, when regional data was first collected, antimalarial supply data has been collected and reported from participating countries for seventeen quarters. The first report included data from four South American countries. Between five and seven South American countries participated in the regional monitoring system for the first six quarters. In the first quarter, 2013, five Central American countries were included in the monitoring system. Studies identified national and regional reports in July 2012 to provide an initial national list of medicines reducing three countries: Bolivia, Ecuador, and Peru. In 2012, the Pan American Health Organization (PAHO) and the WHO began the process of analyzing data from PAHO’s and WHO’s regional partners in order to identify the best medicines to treat severe malaria and other conditions. By the end of 2014, there were 35 transfers/donations from PAHO or partner countries to other member countries and totaled 1.5 million units of medications valued at USD 54,000.

Data was collected and consolidated from 2010 to 2011 by the SPMS program. Beginning in 2012, the Pan American Malaria Initiative began requesting the information from the AMI countries and publishing the quarterly report. They issued reports with technical assistance from SIAPS and the Global Fund supported Regional Network for Drug Resistance Surveillance (RAWRES), which is the regional network of national malaria control programs that monitor antimalarial efficacy. Participating countries receive technical assistance from the Pan American Health Organization (PAHO), which is the USAID-funded Systems for Improved Access to Pharmaceutical Supplies and Services program (SIAPS), the Promoting Quality of Medicines program (POQM), U.S. Centers for Disease Control and Prevention (CDC), and Links Media. AMI promotes the use of networking and systems strengthening to improve access to diagnosis and treatment, pharmaceutical supply management, quality control of medicines, epidemiological surveillance, vector surveillance and control, and the monitoring of antimalarial efficacy in order to continue to reduce the region’s malaria burden.

Minimum Stock Levels in Health Facilities
In 2011, SIAPS and AMI began to review programming and distribution criteria in six Central and South American countries. The countries developed criteria to stock antimalarials in all facilities in the country based on incidence in each region of the country. The criteria were based on risk factors, such as population density and size of the warehouse. The countries developed minimum stock levels based on the distributions rates in the countries. Facilities and warehouses were grouped by level of attention such as health facilities or hospitals and size of the warehouse. The countries developed minimum stock levels for each level of attention based on the level of incidence in the region. This was completed for P. falciparum, P. vivax and severe malaria.

Pooled Procurement
Pooled Procurement is a quarterly procurement mechanism that AMI countries can use to improve stock availability for malaria treatments in their countries.