

How low can we go?

Lessons from an integrated partnership for malaria control in the Americas

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Introduction

Malaria incidence in Latin America and the Caribbean has decreased by 65% from 2001 to 2013, which has resulted in new challenges 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 incorporating selected best practices for malaria prevention and control. AMI is affiliated with the Amazon Network for Antimalarial Drug Resistance Surveillance (RAVREDA), 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 Pharmaceuticals and Services program (SIAPS), the Promoting Quality of Medicines program (PQM), 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 overstocks in others. To confront 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 compile a quarterly report.
- Two data collection points for the indicator—the central medical store and the regional store. In most countries, a stock-out 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 6–12 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/ departments without recent consumption would 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, medicines 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 procurement was conceived to help countries that were having difficulties procuring small quantities of antimalarial medicines to meet their needs. AMI developed a pooled procurement mechanism to help member countries through aggregating purchases to attract suppliers by ensuring larger order quantities and securing cheaper prices. Countries submitted medicine requests to the Pan American Health Organization (PAHO). Orders were aggregated and a tender was floated so the orders could be filled by suppliers. Countries placed orders with PAHO which were filled by the providers. Antimalarials were then delivered to the participating countries. The process took approximately one year to complete from request to delivery.

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, 2012, five Central American countries were included in the monitoring system.

Stock problems identified in the national and regional reports in July 2010 triggered an immediate redistribution of medicines involving three countries: Colombia and Bolivia combined to donate 700,000 units of chloroquine 150mg to Peru. Countries have used the indicator results as a solicitation-donation mechanism. By the end of 2014, there were 55 transfer/ donations from PAHO or partner countries to other member countries and totaled 1.5 million units of medication valued at about USD 54,000. Data was collected and consolidated from 2010 to 2011 by the SPS program. Beginning in 2012, the Peruvian Pharmaceutical Directorate began requesting the information from the AMI countries and publishing the quarterly report. They issued reports with technical assistance from SPS and the follow-on project, Systems for Improved Access to Pharmaceuticals and Services through the first quarter, 2013. PAHO began requested the data and issued the reports beginning in 2nd quarter, 2013 and continues to collect data and issue the reports through the current quarter.

Minimum stock levels in health facilities.

In 2011, SIAPS and AMI began to revise 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. Each country divided their regions/ departments into high, medium and low incidence based on the incidence 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 regions. This was completed for P. falciparum, P. vivax and severe malaria.

Pooled Procurement

Pooled Procurement is a yearly procurement mechanism that all AMI countries can participate in to improve stock availability for malaria commodities in their countries.

Conclusions

AMI countries appear to have improved their stock availability in central warehouses between 2010 and 2014 since the availability of antimalarials improved from 57% to 85% over that time period. It is unclear if medicine availability has improved throughout the entire supply chain however, since the participating countries didn't survey stock availability at health facilities. Countries are better prepared to supply medicines to all regions of the country if antimalarials are available in the central warehouse, so it is believed that improved availability of medicines at the central level will lead to improved availability downstream at regional warehouses and health facilities.

As incidence decreases in AMI countries, cases are concentrated in remote areas of the countries and in migrant populations. Cases are found in border regions of the countries in migrant populations. There is a need for AMI to focus future interventions towards the migrant and difficult to reach populations. For example, AMI has begun to focus resources towards improving availability of antimalarials in regions with illicit gold miners in Suriname, Guyana, Brazil and French Guiana.

References

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Methods

Regional Monitoring System

1. Collect stock level data from regional and national level warehouses in each country by 15th of the month after end of quarter.
2. Send stock data to PAHO by end of the first month after end of quarter
3. Consolidation of country data by PAHO into regional bulletin
4. Dissemination of bulletin by 15th of the month following end of quarter.

Minimum Stock Levels in Health Facilities

1. Presentation of the epidemiological situation and antimalarial supply.
2. Determine ranges of high, medium and low transmission of the country.
3. Discussion of National Malaria Control Program Staff to determine criteria in country.
4. Establish minimum stock levels according to epidemiological scenarios and antimalarial stock availability in the warehouses based on case levels.
5. Implement stock level recommendations

Pooled Procurement

1. Presentation of the epidemiological situation and antimalarial supply.
2. Determine ranges of high, medium and low transmission of the country.
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5. Implement stock level recommendations

Results

1. Quarterly bulletin aggregated and disseminated 17 times since 2nd quarter 2010
2. 4 countries participated in the first bulletin.
3. Expanded to include 5 Central American countries in first quarter 2012.
4. 55 medicine transfers since inception involving 1.5 million units of medicine, valued at USD 54,000 which helped countries avoid stock outs and expired medicines.

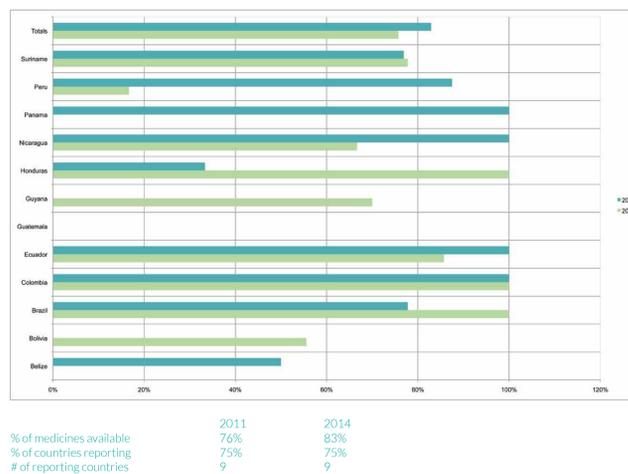
1. 5 Central and South American countries developed minimum stock levels for facilities for Pf., Pv. and severe malaria.

Conclusion

Stock level improved from		
2nd quarter 2010	1st quarter 2012	2nd quarter 2014
57%	79%	85%
N=4	N=8	N=9



Antimalarial Availability by Quarter



Country Participation in Regional Monitoring System in South and Central America

