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EVALUATION

Mid-term performance evaluation of Amazon Malaria Initiative (AMI)

September 2014

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MID-TERM PERFORMANCE EVALUATION OF AMAZON MALARIA INITIATIVE (AMI)

IMPROVING CONTROL AND TREATMENT OF MALARIA IN THE AMAZON BASIN

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DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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ACRONYMS

AIDS	Acquired immunodeficiency syndrome
AMI	Amazon Malaria Initiative
ACT	Artemisinin-based combination therapy
CCM	Country Coordinating Mechanisms
CDC	Centers for Disease Control and Prevention
COTR	Contracting Officer's Technical Representative
GF/GFATM	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GPS	Global positioning system
HIV	Human immunodeficiency virus
IR	Intermediate result
ISO 17025:2005	General requirements for the competence of testing and calibration laboratories
API	Annual parasite index
IVM	Integrated Vector Management
LAC	Latin America Caribbean
LAC/RSD	USAID Latin America and Caribbean Bureau, Office of Regional Sustainable Development (LAC/RSD)
MoH	Ministry of Health
MSH	Management Sciences for Health
MSH/RPM	Management Sciences for Health/Rational Pharmaceutical Management
NMCP	National Malaria Control Program
OTCA	Organization of the Amazon Cooperation Treaty
PAHO	Pan American Health Organization
PAMAFRO	Global Fund financed project for malaria control in the cross border areas of 4 countries (Colombia, Ecuador, Peru and Venezuela) of the Andean Region.
PMI	Presidential Initiative to Combat Malaria
PMP	Performance Management Plan
QC	Quality control
QA	Quality assurance
RAVREDA	Amazon Network for the Surveillance of Antimalarial Drug Resistance
RBM	Roll Back Malaria
RDT	Rapid diagnostic tests
SARI	South America Regional Infectious Diseases Program
SAIDI	South American Infectious Diseases Initiative
SMS	Short message services
SPAMA	PAHO Strategy and Plan of Action for Malaria in the Americas
SOW	Statement of work
SPR	Slide positivity rate
TA	Technical assistance
TB	Tuberculosis
UN	United Nations
US	United States
USAID	United States Agency for International Development
USP	United States Pharmacopeia
USP/DQI	United States Pharmacopeia / Drug Quality and Information
WHO	World Health Organization

EXECUTIVE SUMMARY

PROJECT BACKGROUND

The Amazon Malaria Initiative (AMI) was launched by the United States Agency for International Development (USAID) in 2001 to improve the control and treatment of malaria by the National Malaria Control Programs (NMCP) of the Ministries of Health in the countries located in the Amazon basin. Currently there are 11 member countries of the Amazon Network for the Surveillance of Antimalarial Drug Resistance (RAVREDA) -six in the Amazon basin: Brazil, Colombia, Ecuador, Guyana, Peru and Suriname, five in Central America: Belize, Guatemala, Honduras, Nicaragua and Panama.

Participating countries collaborate with each other by exchanging information, experiences and expertise regarding malaria prevention and control. AMI's initial emphasis was on providing support to participating countries to revise antimalarial drug treatment policies based on scientific evidence obtained through efficacy trials. As progress was made towards that purpose, a more comprehensive approach to drug efficacy was implemented, including issues of drug quality assurance, adherence to treatment, supply chain management, and others.

Using a common conceptual framework to select and coordinate activities in priority countries, the initiative is intended to improve malaria control at the sub regional level and help decrease national morbidity and mortality. The objective of AMI is that malaria control programs substantially incorporate selected best practices. The anticipated results are:

1. Reliable and standardized surveillance information on malaria drug resistance and vector control used to monitor trends and more effectively target disease control efforts.
2. Laboratory diagnosis of malaria improved.
3. Tools and approaches developed, adapted, tested in local settings, and disseminated.

EVALUATION QUESTIONS

The purpose of the performance evaluation of AMI is to assess the progress made to date in achieving the specific objectives of the results framework and review the programmatic, technical and managerial strengths and weaknesses of all AMI components.

The performance evaluation is based on evaluation questions about relevance, effectiveness, efficiency, sustainability and use of technical cooperation of AMI. The main evaluation questions are:

- Was the design and evolution of AMI effective in achieving its expected results while responding to country and regional needs?
- Was AMI effective in implementing activities?
- Did AMI contribute to countries adequately implementing malaria prevention and control interventions?
- Did AMI contribute to the sustainability of RAVREDA and of malaria prevention and control activities in the countries?
- Was AMI efficient?
- What strategic directions should AMI take if extended beyond 2015?

Around each evaluation question a set of more specific questions (sub evaluation questions) has been defined.

EVALUATION METHODS AND LIMITATIONS

The performance evaluation of AMI requires the use of quantitative and qualitative methods. By using multiple data sources and methods of analysis, the evaluators attempt to obtain more rigorous and robust information. The performance evaluation used triangulation strategies to validate the information.

The performance evaluation includes:

- I. Case Studies (Performed in Brazil, Colombia, Nicaragua and Peru)
 - a. Data collection: i) in-depth interviews; ii) key informant sampling; iii) purposive sampling (Selected participants); iv) snowball sampling (referred participants); vi) instruments – predefined set of questions; vii) interview summary sheet – checklist; viii) follow-up interviews; and ix) information processing (recorded and transcribed)
 - b. Review of AMI documents and other published data
2. Analysis of malaria in AMI countries
3. Analysis of AMI working lines and national malaria control programs in AMI countries
4. Documents review and telephone interviews of key informants of Panama, Honduras, Belize, and partner organizations: Pan American Health Organization (PAHO), United States Pharmacopeia (USP), Management Sciences for Health (MSH), Centers for Disease Control and Prevention (CDC) and Presidential Initiative to Combat Malaria (PMI)
5. Interviews and data collection in self-administrative questionnaires about the advance in work lines of AMI and the situational analysis of RAVREDA
6. Analysis of network communications in RAVREDA
7. Analysis of the use of evidence produced by AMI

FINDINGS

AMI is associated with the decline of the Morbidity from malaria in Latin America and Caribbean

The timeline of AMI activities shows that changing the treatment schedule, monitoring resistance to anti-malarial drugs and improving the quality of diagnosis are related to the declining trends of the malaria morbidity. Between 1990 and 2001 the incidence of malaria changed from 3.76 to 3.02 per thousand, while in the period (2002-2012) corresponding to the implementation of AMI, a significant decline is witnessed, from 2.75 to 1.19 per thousand.

Key informants from the countries recognized the contribution of AMI to establish South-South cooperation in the external evaluation of the performance of microscopists, vector control and management of drugs (including regional joint procurement and antimalarial donation when there were stock outs in any of the countries). Respondents stated that without the support of AMI they would not had been able to implement these activities or it would have taken longer. Currently those actions that have proven effective are being expanded and achievements are being obtained in less time as in the case of the Central American countries.

The reduction of malaria cases in the Americas leads to less widely targeted areas and populations with particular characteristics, requires technical cooperation to strengthen integrated vector management, surveillance and specialized management services at the local level

The findings of this evaluation show that the continuous reduction of malaria cases has generated a focused scenario, and that it affects marginalized populations living in remote border areas, extractive and mining activities, and indigenous populations. The prevention, control and elimination of malaria in this scenario requires a stratified surveillance system, integrated vector management, development of operational research, provide interventions in the workplace, community-based actions and develop strategies to expand health services. AMI should strengthen the actions performed by PAHO and the countries in the areas of epidemiological surveillance and vector control, and develop a course of action to expand health services within the community.

Although the risk of malaria transmission persists, due to the reduction of malaria cases in several Latin American countries, it is not a priority and the allocation of resources for prevention and control of malaria could reduce.

The control of malaria requires regional action and PAHO oversight

This evaluation contends that AMI strengthens regional governance of countries, guidance and multilateral action is necessary, and the USAID cooperation model is more efficient and sustainable with technical support and stewardship of PAHO and implementation through RAVREDA. AMI supports the implementation of common strategies and joint technical cooperation, and because the interventions performed under AMI are sustainable, they have been implemented with regular procedures and resources of member countries and PAHO.

The findings show that AMI's strategy, methodologies, tools and processes are operating with tangible achievements at the regional level, which strengthens regional and national governance for malaria control.

The decentralization of public health functions and health sector reforms affect malaria control and demand specialized technical assistance to improve management control programs

The decentralization and health reforms affect governance and program resources for malaria control, and this in turn seriously affects the expansion, implementation and sustainability of best practices developed by AMI in the prevention, diagnosis, treatment and surveillance of malaria. This effect is greater in more remote areas with limited access to services and fewer resources.

Technical assistance is necessary for the improvement of governance and management programs for malaria control in decentralized systems. AMI does not have a line of cooperation to provide technical assistance to support program management of malaria control in decentralized scenarios.

RAVREDA is the main mechanism for AMI management and is valued as a good practice for the articulation of international technical cooperation between partners and countries, and has helped to reduce malaria in the Amazon Region

RAVREDA is a network for learning, sharing experiences, strengthening capacity; promotes partnership between countries and allows joint international cooperation, and has had significant achievements in

controlling malaria. These actions strengthen a lot of the work done in PAHO countries.

Currently, the network is not the means to implement PAHO's Strategy and Action Plan for Malaria in the Americas. The network is not a binding space, nor does it follow an explicit procedure or agreements in order to prioritize actions to implement malaria control at the regional level.

AMI does not manage for results and requires improvements in planning and monitoring

AMI does not manage for results or indicators that measure their performance and effectiveness and AMI planning process needs improvement. AMI does not have a change theory with results framework, products and process. The AMI planning process takes too long. Planning has no performance indicators for regional goals, and planning of the partners revolves around the activities done in the countries. AMI receives funding from PMI/USAID, however there is no explicit alignment with the objectives of the Presidential Initiative; this fact would have limited the increased allocation of resources to AMI.

RECOMMENDATIONS

AMI must align itself with PAHO's Strategy and Action Plan against Malaria in the Americas 2016-2020

AMI could promote the institutionalization of the strategies, methodologies, and tools in PAHO's Strategy and Action Plan against Malaria 2016-2020. Before 2016, AMI should perform a feasibility and constraints analysis to determine which AMI activities still require the support of USAID and what actions should AMI perform to make the program sustainable and the expansion of its working lines in other countries of the Americas. Also, AMI must identify new activities which are needed to eliminate malaria, strengthen malaria control programs in decentralized health systems, management and control of malaria in border areas, people living in areas of difficult geographic access with very limited access to health services, and migrant and indigenous populations.

USAID/AMI and PAHO should develop a financial and technical proposal for the 2016-2020 period to consolidate the achievements of the projects and incorporate the new working lines, strategies, methodologies and instruments. To this end it is important to align AMI with PMI for allocating more resources, especially to develop activities towards the achievement of their common goals.

It is recommended that AMI changes its name and scope to a strategy of technical cooperation to strengthen regional and national governance in the fight against Malaria.

RAVREDA should be institutionalized as a part of PAHO

USAID/AMI should fund the institutionalization of RAVREDA during the 2016-2020 period. Institutionalize RAVREDA in PAHO as an evidence management network, expanding access to more people and the use of information technology to implement the Strategy and Action Plan for Malaria in the Americas, coordinate international technical and South-South cooperation and increased use of evidence. It is recommended to incorporate countries like Haiti, Dominican Republic, Venezuela, Ecuador, Bolivia and Mexico within RAVREDA.

AMI should continue to support the strengthening of regional action for the control and elimination of malaria and develop strategies with PAHO to commit all countries to maintain the prevention and control activities on a sustained basis, including countries with low transmission or in elimination phase.

Develop a technical assistance plan to implement the recommendations of the World Health Organization (WHO) and PAHO, and develop innovative interventions for malaria control in areas with limited access to health services, difficult geographical access, migrants, border areas, indigenous populations, and groups involved in mining and quarrying. AMI should consider developing Geographical Information Systems (GIS) for these key cross-border areas. The technical assistance should have a roadmap for technical assistance in these areas (e. g., study of knowledge, attitudes and practices with a methodological guide, constraints analysis using standardized instruments, solutions development, design evaluation and operational research to test the solution, system monitoring of the solution's implementation, the solution settings and considerations for technical, social and economic viability of the expansion of the solution, and a plan for transfer and scale).

It is imperative to strengthen the AMI technical cooperation activities on health systems

AMI technical assistance should be directed to review and define, where appropriate, roles and functions, the control of information, control of administrative systems, and finally the financing and organization of health services to establish critical processes and responsibility for its implementation at national level and subnational levels. AMI must develop a methodology for technical assistance to help countries improve the management of control programs in decentralized systems.

Implement a performance management monitoring and AMI evaluation

AMI must develop a results framework with performance indicators based on a theory of change for each line of action. This results framework must be articulated with PAHO's Strategy and Action Plan for Malaria in the Americas and the lines of action of the PMI. AMI must develop a performance monitoring plan (PMP) with results indicators, products, and principal activities. Indicators should have a descriptive data sheet, sources of information and a baseline. The PMP should have an information system that allows the recording, analysis and reporting of monitoring indicators. We recommend a procedure to reduce planning time.

RESUMEN EJECUTIVO

ANTECEDENTES

La Iniciativa Amazónica contra la Malaria (AMI) fue lanzada por la Agencia de los Estados Unidos de América para el Desarrollo Internacional (USAID) en el año 2001, para mejorar el control y tratamiento de la malaria por los programas nacionales de control de malaria (NMCP) de los Ministerios de Salud en los países ubicados en la cuenca amazónica. En la actualidad hay 11 países miembros de la Red Amazónica para la Vigilancia de la Resistencia a las Drogas Antimaláricas (RAVREDA) -seis en la cuenca amazónica: Brasil, Colombia, Ecuador, Guyana, Perú y Surinam, cinco en Centroamérica: Belice, Guatemala, Honduras, Nicaragua y Panamá.

Los países participantes colaboran entre ellos intercambiando información, experiencias y capacidades acerca del control y prevención de la malaria. El énfasis inicial de AMI fue dar soporte a los países participantes para revisar políticas de medicamentos para el tratamiento de la malaria, basado en la evidencia científica obtenida a través de pruebas de eficacia. A medida que se fue progresando en este propósito, se implementó un enfoque más exhaustivo hacia la eficacia de los medicamentos, incluyendo temas de aseguramiento de la calidad, adherencia al tratamiento, gestión de la cadena de suministro, y otros.

Utilizando un marco conceptual común para seleccionar y coordinar actividades en países prioritarios, la Iniciativa pretende mejorar el control de la malaria a nivel subregional y ayudar a reducir la morbilidad y mortalidad nacional. El objetivo de AMI es que “los programas de control de la malaria en la subregión de la cuenca amazónica sustancialmente incorporen las mejores prácticas seleccionadas.” Los resultados anticipados son:

1. Información estandarizada para la vigilancia de la resistencia de la malaria a los medicamentos es usada para monitorear tendencias y enfocar esfuerzos de controlar la enfermedad más efectivamente;
2. Laboratorios de diagnóstico de malaria mejorados;
3. Herramientas y procedimientos desarrollados, adaptados y probados en escenarios locales, diseminados.

PROPÓSITO Y PREGUNTAS DE LA EVALUACIÓN

El propósito de la evaluación de desempeño de AMI es analizar el progreso hecho a la fecha hacia el logro de los objetivos específicos del marco de resultados, y revisar las fortalezas y debilidades programáticas, técnicas y gerenciales de todos los componentes del programa. La evaluación de desempeño se basa en preguntas sobre relevancia, efectividad, eficiencia, sostenibilidad y uso de la cooperación técnica de AMI. Las principales preguntas de la evaluación son:

- ¿Fue el diseño y evolución de AMI efectivo en lograr los resultados esperados, respondiendo a su vez a las necesidades nacionales y regionales?
- ¿Fue AMI efectiva en implementar actividades?
- ¿Contribuyó AMI a los países adecuadamente, implementando intervenciones de control y prevención de la malaria?
- ¿Contribuyó AMI a la sostenibilidad de RAVREDA y de las actividades de control y prevención de la malaria en los países?

- ¿Fue AMI eficiente?
- ¿Qué dirección estratégica debería tomar AMI si se extendiera más allá del 2015?

Alrededor de cada pregunta de evaluación se ha definido un grupo de preguntas más específicas (sub-preguntas de evaluación).

MÉTODOS

La evaluación de desempeño de AMI requiere del uso de métodos cuantitativos y cualitativos. A través del uso de múltiples fuentes de datos y métodos de análisis, los evaluadores intentan obtener información más rigurosa y robusta. La evaluación de desempeño usó estrategias de triangulación para validar la información.

La evaluación de desempeño incluye:

1. Estudio de casos (Llevados a cabo en Brasil, Colombia, Nicaragua y Perú)
 - a. Recolección de Datos: i) entrevistas a profundidad; ii) muestreo de informantes clave; iii) muestreo intencional (participantes seleccionados); iv) muestreo de “bola de nieve” (participantes referidos); vi) instrumentos – set de preguntas pre-definidas; vii) hoja resumen de entrevista – lista de verificación; viii) entrevistas de seguimiento; y ix) procesamiento de información (grabada y transcrita para su)
 - b. Revisión de documentos de AMI y otros datos publicados
2. Análisis de la malaria en países AMI
3. Análisis de las líneas de trabajo de AMI y programas nacionales de control de la malaria en países AMI
4. Revisión de documentos y entrevistas telefónicas a informantes clave de Panamá, Honduras, Belice, y socios como OPS, USP, MSH, CDC y PMI.
5. Entrevistas y recolección de datos en cuestionarios auto-administrados acerca del avance en líneas de trabajo de AMI y el análisis situacional de RAVREDA.
6. Análisis de la red comunicaciones en RAVREDA
7. Análisis del uso de la evidencia producida por AMI.

HALLAZGOS

Los logros de AMI están asociados a la reducción de la morbilidad por malaria en América Latina y el Caribe.

La línea de tiempo de las actividades de AMI muestra que los cambios en las dosis de tratamiento, el monitoreo de la resistencia a medicamentos animalarios y la mejora de la calidad del diagnóstico están relacionados a las tendencias descendentes de la morbilidad por malaria. Entre 1990 y 2001, la incidencia de la malaria cambió de 3.76 a 3.02 por mil, mientras que en el período 2002-2012 correspondiente a la implementación de AMI, se evidenció un declive significativo, de 2.75 a 1.19 por mil.

Los informantes clave de los países reconocieron la contribución de AMI para establecer cooperación Sur-Sur en la evaluación externa del desempeño de microscopistas, control vectorial y gestión de la logística de medicamentos (incluyendo compras conjuntas regionales, y donaciones cuando hubo falta de stock en alguno de los países). Los entrevistados manifestaron que sin el soporte de AMI no hubieran

podido implementar dichas actividades o les hubiera tomado más tiempo. Actualmente aquellas acciones que han demostrado ser efectivas están siendo expandidas y se está obteniendo logros en menor tiempo, como es el caso de los países centroamericanos.

La reducción de los casos de malaria en las Américas, y su presencia en áreas menos extensas y grupos poblacionales con características particulares, requiere de cooperación técnica para fortalecer la gestión integrada de vectores, vigilancia y servicios de manejo especializado al nivel local

Los hallazgos de esta evaluación muestran que la reducción continua de casos de malaria ha generado un escenario focalizado, ya que ésta afecta a poblaciones marginadas que viven en áreas limítrofes remotas, actividades extractivas y mineras, y poblaciones indígenas. La prevención, el control y la eliminación de la malaria en este escenario requieren de un sistema de vigilancia estratificado, gestión integrada de vectores, desarrollo de investigación operativa, intervenciones en lugares de trabajo, acciones comunitarias y estrategias para expandir el acceso a servicios de salud. AMI deberá fortalecer las acciones que desarrolla PAHO en los países en las áreas de control vectorial y vigilancia epidemiológica, y desarrollar un curso de acción para expandir servicios de salud en estas comunidades.

Aunque el riesgo de transmisión de la malaria persiste, ésta ya no es una prioridad debido a la reducción de casos en muchos países de Latinoamérica, y podría resultar en una menor asignación de recursos para prevención y control de la malaria.

El control de la malaria requiere de una acción regional y de la supervisión de OPS

Esta evaluación sostiene que AMI fortalece la gobernanza regional de los países, que son necesarias la dirección y acción multilateral, y que el modelo de cooperación de USAID es más eficiente y sostenible con el soporte técnico y la rectoría de PAHO y la implementación a través de RAVREDA. AMI da soporte a la implementación de estrategias comunes y cooperación técnica conjunta, y debido a que las intervenciones hechas bajo AMI son sostenibles, éstas han sido implementadas con recursos y procedimientos regulares de los países miembros y PAHO.

Los hallazgos muestran que la estrategia, metodologías, herramientas y procesos de AMI están operando con logros tangibles al nivel regional, lo cual fortalece la gobernanza regional y nacional para el control de la malaria.

La descentralización de las funciones de salud pública y las reformas del sector salud afectan el control de la malaria y demandan una asistencia técnica especializada para mejorar los programas de control de gestión.

Los procesos de descentralización y reforma afectan la gobernanza y los recursos del programa para control de la malaria, y ello a su vez afecta seriamente la expansión, implementación y sostenibilidad de las mejores prácticas desarrolladas por AMI en la prevención, diagnóstico, tratamiento y vigilancia de la malaria; dicho efecto es mayor en las áreas más remotas con acceso limitado a servicios y con menos recursos.

La asistencia técnica es necesaria para el mejoramiento de los programas de gobernanza y gestión para el control de la malaria en sistemas descentralizados. AMI no tiene una línea de cooperación para brindar asistencia técnica en apoyo a la gestión de programas de control de malaria en escenarios descentralizados.

RAVREDA es el principal mecanismo para la gestión de AMI y es valorado como una buena práctica para la articulación de la cooperación técnica internacional entre socios y países, y ha ayudado a reducir la malaria en la Región Amazónica

RAVREDA es una red para aprender, compartir experiencias, fortalecer capacidades; promueve la colaboración entre países y permite cooperación internacional conjunta, y ha tenido logros significativos en controlar la malaria. Estas acciones fortalecen gran parte del trabajo hecho en países de la región.

Actualmente, la red no es el medio para implementar la Estrategia y Plan de Acción para la Malaria en las Américas de PAHO. La red no es un espacio vinculante, no actúa según un procedimiento o acuerdo explícito a fin de priorizar acciones para implementar el control de la malaria al nivel regional.

AMI no hace gestión por resultados y requiere mejoras en planeamiento y monitoreo

AMI no opera según resultados o indicadores que midan su desempeño y efectividad, y necesita mejorar su proceso de planeamiento. AMI no está basada en una teoría de cambio, con un marco de resultados, productos y procesos. El planeamiento de AMI gira alrededor de las actividades realizadas en los países. AMI recibe financiamiento de la Iniciativa Presidencial para Combatir la Malaria (PMI), sin embargo no hay una alineación explícita con los objetivos de la Iniciativa. Este hecho pudo haber limitado la asignación de recursos a AMI.

RECOMENDACIONES

AMI debe alinearse con la Estrategia y Plan de Acción de PAHO contra la Malaria en las Américas, 2016-2020

AMI podría promover la institucionalización de sus estrategias, metodologías y herramientas en la Estrategia y Plan de Acción de PAHO contra la Malaria. Antes del 2016, AMI debería conducir un análisis de factibilidad y restricciones para determinar qué actividades aún requieren el apoyo de USAID, y qué acciones debe realizar AMI para que el programa sea sostenible y expanda sus líneas de trabajo en otros países de las Américas. También, AMI debe identificar nuevas actividades que se necesiten para eliminar la malaria, fortalecer los programas de control de la malaria en sistemas de salud descentralizados, manejo y control de la malaria en áreas fronterizas, poblaciones que viven en áreas de difícil acceso geográfico, con acceso muy limitado a servicios de salud, y poblaciones indígenas e inmigrantes.

USAID/AMI y OPS deberían desarrollar una propuesta financiera y técnica para el periodo 2016-2020 a fin de consolidar los logros del proyecto e incorporar las nuevas líneas de trabajo, estrategias, metodologías e instrumentos. Para este fin es importante alinear AMI con PMI para lograr mayores recursos, especialmente para desarrollar actividades en las metas comunes.

Se recomienda que AMI cambie su nombre y alcance a una estrategia de cooperación técnica para fortalecer la gobernanza regional y nacional en la lucha contra la malaria.

RAVREDA debería ser institucionalizada como parte de OPS

USAID/AMI debería financiar la institucionalización de RAVREDA durante el periodo 2016-2020. Institucionalizar RAVREDA en PAHO como una red de manejo de evidencias, expandiendo el acceso a más gente y el uso de tecnología de información para implementar la Estrategia y Plan de Acción contra la Malaria en las Américas 2016-2020, coordinar cooperación técnica internacional y Sur-Sur y un mayor

uso de evidencias. Se recomienda incorporar a países como Haití, República Dominicana, Venezuela, Ecuador, Bolivia y México dentro de RAVREDA.

AMI debería continuar ayudando al fortalecimiento de la acción regional para el control y eliminación de la malaria y desarrollar estrategias con PAHO para comprometer a todos los países a que mantengan las actividades de prevención y control en forma sostenible, incluyendo a países en fase de baja transmisión o eliminación.

Desarrollar un plan de asistencia técnica para implementar las recomendaciones de la Organización Mundial de la Salud y PAHO, y desarrollar intervenciones innovadoras para el control de la malaria en áreas con acceso limitado a servicios de salud, de difícil acceso geográfico, migrantes, zonas fronterizas, poblaciones indígenas, y que trabajan en minería. El programa debería considerar el desarrollo de sistemas de información geográfica (GIS) para estas áreas transfronterizas. La asistencia técnica debería tener una hoja de ruta para dichas áreas (por ejemplo estudio de conocimientos, actitudes y prácticas con una guía metodológica, análisis de limitaciones usando instrumentos estandarizados, desarrollo de soluciones, evaluación de diseño e investigación operativa para testear la solución, monitoreo de sistemas de la implementación de la solución, configuraciones y consideraciones de la solución para la viabilidad técnica, social y económica, y un plan para transferencia y escalamiento).

Es imperativo fortalecer las actividades de cooperación técnica de AMI en el área de sistemas de salud

La asistencia técnica de AMI debería orientarse a revisar y definir, donde sea apropiado, roles y funciones, el control de información, control de los sistemas administrativos y finalmente el financiamiento y organización de los servicios de salud, para establecer procesos críticos y responsabilidades en su implementación a nivel nacional y niveles sub-nacionales. AMI debe desarrollar una metodología de asistencia técnica para ayudar a que los países mejoren en el manejo de programas de control en contextos descentralizados.

Implementar un monitoreo de gestión de desempeño y evaluación AMI

AMI debe desarrollar un marco de resultados con indicadores de desempeño basados en una teoría de cambio para cada línea de acción. El marco de resultados debe ser articulado con la Estrategia y Plan de Acción de PAHO contra la Malaria y las líneas de acción de PMI. AMI debe desarrollar un plan de monitoreo del desempeño (PMP) con indicadores de resultados, productos y actividades principales. Los indicadores deberían tener una hoja descriptiva, fuentes de información y valores de referencia. El PMP debería tener un sistema de información que permita el registro, análisis y reporte de indicadores de monitoreo. Recomendamos un procedimiento para reducir el tiempo para la planificación.

EVALUATION PURPOSE & QUESTIONS

EVALUATION PURPOSE

The purpose of the performance evaluation of AMI will be to assess the progress made to date in achieving the specific objectives of the results framework in the agreements and review the programmatic, technical and managerial strength and weaknesses of all AMI components.

The evaluation will verify that activities planned and implemented under AMI: respond to expected results and lines of work, collect information on improvements achieved in each of these areas by the countries, and assess progress achieved in each line of work.

Based on the findings, the evaluation will present results achieved to date, document lessons learned and present recommendations that guide the management and implementation of AMI, as well as guidelines for strategic direction if AMI should extend beyond 2015.

Regarding AMI, the results of the evaluation will be used to:

- Assess the effectiveness of the approach used in the design and evolution of AMI in achieving its expected results while responding to country and regional needs.
- Assess the progress of AMI toward achieving its expected results.
- Guide AMI management and implementation.

EVALUATION QUESTIONS

The performance evaluation is based on evaluation questions about relevance, effectiveness, efficiency, sustainability and use of technical cooperation of AMI. The main evaluation questions are the following:

- Was the design and evolution of AMI effective in achieving its expected results while responding to country and regional needs?
- Was AMI effective in implementing activities?
- Did AMI contribute to countries adequately implementing malaria prevention and control interventions?
- Did AMI contribute to the sustainability of RAVREDA and of malaria prevention and control activities in the countries?
- Was AMI efficient?
- What strategic directions should AMI take if extended beyond 2015?

Around each evaluation question a set of more specific questions (sub evaluation questions) has been defined. See Methodological Annex II (Evaluation Questions Matrix).

PROJECT BACKGROUND

The Amazon Malaria Initiative (AMI) was launched by the United States Agency for International Development (USAID) in 2001 to improve the control and treatment of malaria by the Ministries of Health and National Malaria Control Programs in the countries located in the Amazon Basin sub region, including Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela. Participating countries had collaborated with each other by exchanging information, experiences and expertise regarding malaria prevention and control.

AMI began as a collaborative effort by PAHO and USAID to complement the Roll Back Malaria Partnership. AMI's initial emphasis was on providing support to participating countries to revise antimalarial drug treatment policies based on scientific evidence obtained through efficacy trials. As progress was made towards that purpose, a more comprehensive approach to drug efficacy was implemented, including issues of drug quality assurance, adherence to treatment, supply chain management, and others. Also, activities related to evidence based integrated vector management were undertaken.

USAID manages AMI from the Mission in Peru (with support from a Health Officer in USAID/W) to provide technical assistance, training, research and limited equipment and supplies to NMCP through agreements with PAHO, three USAID/W partners: Management Science for Health (MSH); the Centers for Disease Control and Prevention (CDC); US Pharmacopeia; and a contract with Links Media.

Currently, AMI works in Brazil, Colombia, Guyana, Peru and Suriname (Amazon Basin since 2002) and in Belize, Honduras, Guatemala, Nicaragua and Panama (Central America since 2008). Three countries participating in AMI, voluntarily withdrew due to bilateral policies with the United States. Venezuela withdrew in 2007, Bolivia in 2008 and Ecuador in 2014.

EXPECTED IMPACT

The Amazon Malaria Initiative (AMI) strategic objective and results are:

Strategic Objective: Malaria control programs substantially incorporate selected best practices.

IR 1 - Evidence-base increased

IR 2 - Evidence-base communicated and used

IR 3 - More inclusive and better informed policy process promoted

Expected results are:

- Reliable and standardized surveillance information on malaria drug resistance and vector control used to monitor trends and more effectively target disease control efforts;
- Laboratory diagnosis of malaria improved;
- Tools and approaches developed, adapted, tested in local settings, and disseminated

AMI aims to have countries effectively and efficiently addressing malaria through: evidence based programs; adopting and sharing best practices; and collaborating through a regional network.

AMI contributes through high value technical assistance in the following priority areas for malaria prevention and control in the region:

- I. Consolidate and take further progress achieved during AMI's first 10 years of work, with two top priorities:
 - a. Containment of the emergence or spread of resistance to Artemisinin based combination therapy (ACT), and
 - b. Preparedness for re-emergence and re-introduction of malaria.

In addition, further attention will be given to malaria in populations under special circumstances (e.g. gold miners, remote and scattered populations) as important elements contributing to the persistence of malaria transmission in the region; and to vivax malaria.

2. Increase sustainability of RAVREDA activities.
3. Strengthen the regional approach to malaria prevention and control.
4. Have effective and efficient National Malaria Control Programs (NMCPs) in the context of decentralized health sectors adequately implementing all malaria control strategies they adopt in varied epidemiological settings (i.e., areas with low or moderate malaria transmission, or with no transmission but at risk of it).
5. Successfully implement the Strategy and Plan of Action for Malaria in the Americas for 2011-2015.

The performance of AMI was evaluated in the years 2007¹ and 2011².

The evaluation of the period 2002 to 2007 concluded that the quantity, variety, quality of activities and products were very impressive. The initiative had made contributions to partner countries in the areas of malaria treatment, diagnosis, drug management and quality, and entomology. The leading AMI contribution had been the creation of a culture of information-based decision-making that permitted a change to more rational and effective science-based treatment regimens. A further important result is that it created an effective and widely accepted mechanism that cemented a sub-regional approach to using standardized protocols and procedures for solving common problems.

The evaluation of the period 2008 to 2011 concluded that the Initiative had continued to make significant contributions to partner countries in the areas of malaria treatment, diagnosis, drug management and quality, and entomology. The 2011 Evaluation concluded that the success of the Initiative has resulted from modest investments; and that USAID's investment in AMI had been both effective and efficient in general terms. AMI achieved its expected results in the countries of the Amazon basin: it has documented the extent of parasite resistance to antimalarial drugs; proposed and achieved modifications of malaria treatment guidelines and policies; and established a system for monitoring future developments and guiding change.

¹ Terrell S, Brenner P. (2007). External evaluation of the Amazon Malaria Initiative and South America Infectious Disease Initiative. Washington: The QED Group, LLC, CAMRIS International and Social & Scientific Systems, Inc. to the United States Agency for International Development under USAID Contract No. GHS-I-00-05-00005-00.

² Najera J, Zimmerman R, Schmunis G. (2012). External Evaluation of the Amazon Malaria Initiative (AMI) and the Amazon Network for the Surveillance of Resistance to Antimalarial Drugs (RAVREDA). Washington DC: of USAID/Peru, under the terms of Award No. 527-A-00-08-00026-00. Grant between USAID and PAHO/WHO Amazon Malaria Initiative (AMI) and South American Initiative for Infectious Diseases (SAIDI).

AMI MANAGEMENT

USAID/Peru manages the Amazon Malaria Initiative as part of its regional portfolio and with USAID/Global Health accesses activities through a field support mechanism (as of October 2013 there is an agreement with the Pan American Health Organization and a contract with a communications organization, Links Media). The field support mechanism is guided by priority needs in the region and availability of corresponding expertise. AMI has a Steering Committee to ensure coordination and collaboration, which has successfully contributed to improved efficiency and effectiveness in supporting malaria efforts in the region. Figure 1 lists the roles of each AMI partner.



Figure 1. Roles of AMI USAID, CDC, MSH, USP, Links Media, PAHO, and NMCP in Amazon Malaria Initiative

Using as reference a multi-year planning framework, all AMI partners prepare annual work plans that are reviewed by the steering committee before they are submitted to USAID for approval. Work plans are organized under the following lines:

- Improving/sustaining monitoring of efficacy of and resistance to antimalarials and prevent or limit emergence of resistance to antimalarials.
- Improving access to quality diagnosis and treatment.
- Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control.
- Improving vector surveillance and integrated vector management.
- Improving epidemiological surveillance.
- Improving networking and systems strengthening.

Allocation of funds and technical assistance are guided by AMI priorities and countries' capacity to implement activities.

PAHO has a key role as an AMI partner: it serves as a channel for AMI support to individual countries; and provides guidance and support not solely to RAVREDA members, but to all countries in the Americas regarding malaria prevention and control. In fulfilling the latter role, PAHO finalized a Strategy and Action Plan for Malaria in the Americas for 2011-2015 with input from a number of stakeholders, including USAID. The strategy and action plan were presented to and approved by all countries of the Americas in the 51st Meeting of the Directing Council of the Organization ([CD51/11](#)).

BACKGROUND

In October 2001 the USAID Latin America and Caribbean Bureau, Office of Regional Sustainable Development (LAC/RSD) launched AMI. Using a common conceptual framework to select and coordinate activities in priority countries, the initiative is intended to improve malaria control at the sub regional level and help decrease national morbidity and mortality.

The objective of AMI is that “malaria control programs in the Amazon Basin sub region substantially incorporate selected best practices.” The anticipated results are:

1. Reliable and standardized surveillance information on malaria drug resistance and vector control used to monitor trends and more effectively target disease control efforts.
2. Laboratory diagnosis of malaria improved.
3. Tools and approaches developed, adapted, tested in local settings, and disseminated.

USAID launched AMI as the mechanism for focusing its financial and technical resources in support of the RBM partnership in Latin America and to promote coordination of efforts among all partners in the region through RAVREDA. An initial technical group met in Santa Cruz, Bolivia, in March 2002 that included representatives from RAVREDA (Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela), CDC, PAHO, USAID, and the WHO Headquarters in Geneva. Later the same year AMI incorporated two USAID partners, the MSH/RPM Plus program and the USP/DQI program, into the initiative.

In September 2002 partners began to implement their work plans within a common set of objectives and strategies. The initial aim of the project was to support participating countries in revising antimalarial drug treatment policies based on scientific evidence obtained through drug efficacy trials. In collaboration with project partners, countries also undertook activities on drug quality assurance, adherence to treatment, and supply chain management. The AMI objectives were modified in 2004 when the activity was extended to incorporate entomology with the aim of promoting integrated vector management³.

Following is a summary of the background about AMI from 2008 to 2011 that was reported in the evaluation of Najera et al. (2011)⁴.

Since 2008, AMI has been managed by USAID/Peru as part of its South America Regional Infectious Diseases Program (SARI). The rationale for AMI was the need to invest in targeted activities to improve malaria control in countries in the Amazon Basin from where 88% of reported malaria cases in LAC originated – as reported by PAHO, and, since malaria transmission does not respect political borders, to complement country specific activities with a regional approach to ensure best practices were institutionalized within the health systems⁵.

³ Terrell S, Brenner P. (2007). External evaluation of the Amazon Malaria Initiative and South America Infectious Disease Initiative. Washington: The QED Group, LLC, CAMRIS International and Social & Scientific Systems, Inc. to the United States Agency for International Development under USAID Contract No. GHS-I-00-05-00005-00.

⁴ Najera J, Zimmerman R, Schmunis G. (2012). External Evaluation of the Amazon Malaria Initiative (AMI) and the Amazon Network for the Surveillance of Resistance to Antimalarial Drugs (RAVREDA). Washington DC: of USAID/Peru, under the terms of Award No. 527-A-00-08-00026-00. Grant between USAID and PAHO/WHO Amazon Malaria Initiative (AMI) and South American Initiative for Infectious Diseases (SAIDI).

⁵ Najera J, Zimmerman R, Schmunis G. (2012). External Evaluation of the Amazon Malaria Initiative (AMI) and the Amazon Network for the Surveillance of Resistance to Antimalarial Drugs (RAVREDA). Washington DC: of USAID/Peru, under the terms of Award No. 527-A-00-08-00026-00. Grant between USAID and PAHO/WHO Amazon Malaria Initiative (AMI) and South American Initiative for Infectious Diseases (SAIDI).

With AMI, USAID developed and implemented a novel approach that combines complementary sources of technical assistance organized in, and coordinated by, a steering committee. This approach proved more effective and efficient than the more conventional paths to program management.

The AMI strategy of working within a network of national malaria control programs coordinated by PAHO addresses actual issues of common interest, as opposed to an externally imposed agenda. Collaboration is essentially provided through technical assistance, with a very low proportion of resources going to commodities. AMI has been essential to the development of the most functional existing network of national malaria control programs worldwide. In addition to consistent and continuous participation of all Amazon member countries since 2002 (except for Venezuela and Bolivia, which have not participated for reasons external to AMI), the network also includes 5 Central American countries (Belize, Guatemala, Honduras, Nicaragua and Panama).

On the technical side, AMI has had a comprehensive vision of an approach to malaria prevention and control. Nonetheless, its initial purpose was to support countries to evaluate the efficacy of and resistance to the antimalarials in use, then to obtain evidence to support the introduction of Artemisinin-based combination therapy (ACT) for falciparum malaria in all Amazon basin countries, and to improve the access to malaria diagnosis and its quality.

AMI/RAVREDA has also provided support for training of microscopy technicians of several AMI countries, whose performance improved following training. AMI also led the development of guidelines and recommendations for improving diagnostic QC/QA systems in the AMI countries. To facilitate the implementation of these guidelines, AMI engaged in technical collaboration and provided funding for a number of activities in partner countries including training, efforts to introduce proficiency testing as a component of diagnostic QC/QA systems, and efforts to improve the efficiency of diagnostic performance monitoring.

Until 2011, AMI supported monitoring of efficacy of ACTs in the region found no evidence of resistance to ACT. During 2012, as a result of AMI supported monitoring of the efficacy of antimalarials, Suriname and Guyana reported an increase (to above 10%) in parasitemia in day three after treatment, an early sign of emerging resistance to ACT. AMI promptly responded by convening experts from WHO, PAHO, CDC, and USAID to an informal consultation meeting to examine the situation; and co-organizing with PAHO a workshop with the participation of representatives for Guyana Shield countries and Brazil, to outline the response strategy and immediate actions plan. They recommended a set of rigorous follow-up studies to be conducted to clarify the situation. In addition to supporting the new confirmatory studies in Guyana and Suriname, PAHO/WHO, USAID, and AMI/RAVREDA partners continue to collaborate closely with ministries of health in all malaria-affected countries to scale up efforts to control and eliminate the disease, including increasing the deployment of vector control tools, expanding access to quality-assured diagnostic testing and antimalarial treatment, and stepping up disease surveillance.

AMI has also helped to strengthen malaria diagnosis, covering both microscopy diagnosis and rapid diagnostic tests (RDTs). Noteworthy achievements include the rational introduction of RDTs, the establishment of a networked system for external evaluation of performance in microscopy diagnosis (for which the Peruvian and the Honduran national laboratories serve as reference nodes, one for the Amazon countries and the other for Central American countries), and the assessment of the frequency of HRP-2 deletion in *P. falciparum* strains circulating in the countries (found to be of up to 40% in some countries) which has given place to recommendations on the selection of RDTs and on initiating the monitoring of HRP-2 deletion in the Region.

Regarding vector surveillance and control, AMI promotes integrated vector management. Within this framework, AMI has helped improve vector surveillance systems, introduced the bottle method for assessing vector susceptibility to insecticides, as well as different types of tests for evaluating the efficacy and durability of long lasting insecticide treated nets.

The region has areas with moderate-low or low malaria transmission, and areas with no transmission but remaining at risk. AMI responds to these changes by supporting countries to have strategies for appropriately addressing each of these epidemiological profiles. Toward this end, AMI prepared strategic orientation documents to promote the use of available tools for malaria prevention, control, and elimination according with the different transmission levels.

AMI is supportive of other stakeholders investing in malaria prevention and control in the Americas, either via RAVREDA or at least taking RAVREDA as a reference. This seeks to support the implementation of the Strategy and Plan of Action for Malaria in the Americas for 2011-2015 prepared by PAHO (presented in June 2011), as well as programs and activities developed by countries, and decrease the probability of duplication of efforts and of projects and activities diverting from such goals.

EVALUATION METHODS & LIMITATIONS

The performance evaluation of AMI was made based on the analysis framework that is shown in Figure 2. The evaluation was directed to determine the suitability and ownership of AMI initiatives and their relevance, effectiveness, efficiency, and sustainability. The evaluation measured the level of achievement of the objectives and expected AMI results as well as to how this model of USAID cooperation contributes to the status of control programs and the situation regarding malaria.

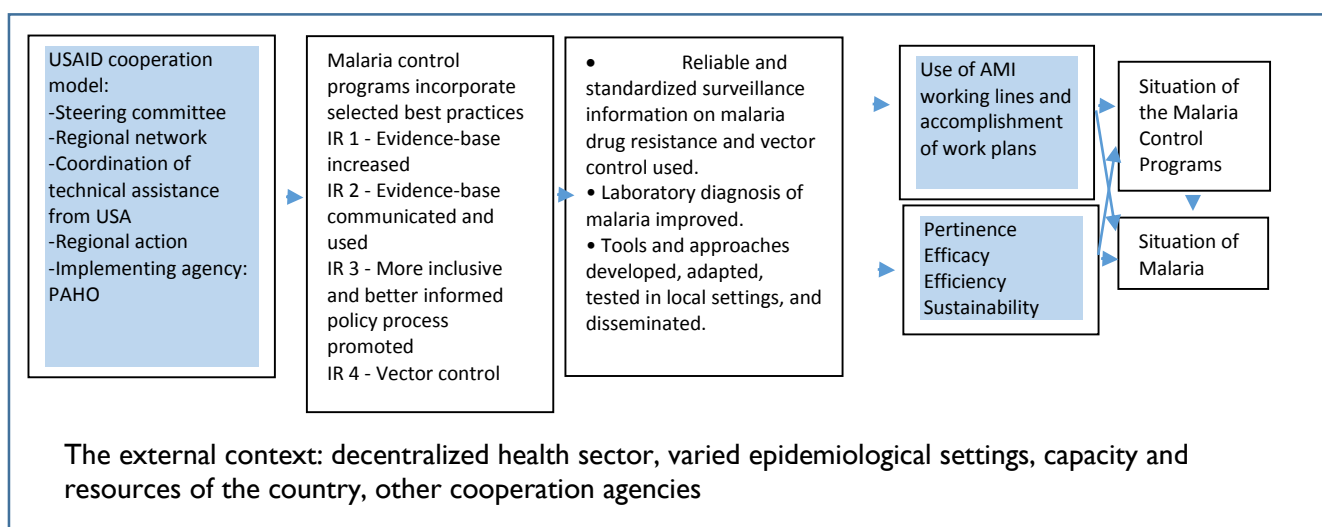


Figure 2 Analysis framework of the AMI's performance evaluation

The AMI performance evaluation uses a mixed-method evaluation with quantitative and qualitative techniques (See Methodological Annex I: Statement of Work). By using multiple data sources and methods of analysis the evaluators attempt to obtain more rigorous and robust information. The performance evaluation included triangulation strategies to validate the information.

The analysis took into account the external context of AMI, such as decentralization of the health sector, capacity and resources of the countries and the cooperation of other agencies.

The performance evaluation included:

1. Case Studies (Performed in Brazil, Colombia, Nicaragua and Peru)
 - a. Data collection: i) in-depth interviews, ii) key informant sampling, iii) purposive sampling (Selected participants), iv) snowball sampling (referred participants), vi) instruments – predefined set of questions, vii) interview summary sheet – checklist, viii) follow-up interviews, ix) information processing (recorded and transcribed to be reviewed by team)
 - b. Review of AMI documents and other published data
2. Analysis of malaria in AMI countries
3. Analysis of AMI working lines and national malaria control programs in AMI countries.

4. Document review and telephone interviews of key informants of Panama, Honduras, Belize, PAHO, USP, MSH, Links Media, CDC and PMI USAID
5. Interviews and data collection in self-administrated questionnaires about the progress in work lines of AMI and the situational analysis of RAVREDA.
6. Analysis of network communications in RAVREDA.
7. Analysis of use of the evidence produced by AMI.

FINDINGS, CONCLUSIONS & RECOMMENDATIONS

FINDINGS

F1: The AMI activities and objectives are closely related to, but not explicitly aligned with the PAHO / WHO Strategy and Action Plan for Malaria in the Americas 2011-2015

Evaluations of the initiatives and global programs by the World Health Organization⁶ have concluded that it is not possible to obtain impacts or make them sustainable when governance and health systems are weak or overlapping programs. Lessons learned from the Global Fund projects indicate that the most important factor of success is the alignment of these funds with national priorities, because initiatives with a separate channel for funding and vertical programs can affect the beneficiary country's governance⁷. This situation suggests that they should make efforts to integrate these initiatives with sectoral strategies and capabilities, to address national needs and gaps and ensure the sustainability of the results. For this reason it is important that AMI is aligned to the governance of malaria control in the Americas.

AMI's objectives and lines of action have corresponded with the needs and priorities of the countries as long as the countries prioritize the actions in the framework of their national programs with the assistance of PAHO. We have verified coherency of AMI's objectives and lines of action with WHO's recommendations⁸ and the PAHO Strategy and Plan of Action for Malaria in the Americas, 2011⁹.

The background section of the Strategy and Action Plan against Malaria 2011-2015 (approved by the Health Ministries of the Americas in the 51st governing council) mentions the contribution of the Amazon Network for the Surveillance of Antimalarial Drug Resistance/Amazon Malaria Initiative (RAVREDA/AMI) in the reduction of malaria in Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru y Suriname from 2002 and in Central America since 2008. AMI with the technical help of USP, MSH, Links Media, and CDC, PAHO have implemented effective best practices in the surveillance of effectiveness and resistance to antimalarials, access to quality diagnostics, antimalarial availability and use, the quality of drugs, stratification and analysis of information, entomology, monitoring of insecticide resistance and the use of mosquito nets with insecticide.

The comparative analysis of the PAHO Strategy and Plan of Action for Malaria in the Americas, 2011-2015 with the AMI action plan (2012-2015) shows a high level of consistency (Table I). AMI has many activities that contribute to Goal 3 of PAHO's Strategy: "intensify efforts to achieve

⁶ WHO (2009). An assessment of inter-actions between global initiatives and country health systems. Grupo de Colaboración sobre Sinergias Positivas / Organización Mundial de la Salud. The Lancet 2009; 373: 2137-69

⁷ Global Program Funds at Country Level: What have we learned? The Global Programs and Partnership Group -Concessional Finance and Global Partnerships Vice Presidency -The World Bank, 2008.

⁸ Organización Mundial de la Salud. ODM 6: combatir el VIH/SIDA, el paludismo y otras enfermedades [Internet]. Ginebra: OMS; 2010.

⁹ PAHO (2011). Estrategia y Plan de Acción sobre la Malaria. 51 Consejo Directivo, 63ª. Sesión del Comité Regional. Washington, D.C., EUA, del 26 al 30 de septiembre del 2011

universal access to immediate, accurate and quality malaria diagnosis, followed by prompt treatment with effective antimalarial drugs". It should be noted that AMI does not show activities related to Goal 5 of the Plan: "Optimize efforts to strengthen health systems (including strategic planning, monitoring and evaluation, operations research, among other things) and the ability for countries to address their respective challenges regarding malaria as both relevant and appropriate", although AMI's Objective 6 indicates that they will improve the network and strengthen the systems.

Table 1. Relationship between the objectives of the PAHO Strategy and Plan of Action for Malaria in the Americas, 2011-2015 and the AMI objectives

PAHO Strategy and Plan of Action for Malaria in the Americas, 2011-2015	AMI 2012-2015
Goal 1: Intensify efforts directed toward malaria prevention, surveillance, early detection, and outbreak containment in various program contexts.	Objective 5: Improve epidemiological surveillance.
Goal 2: Promote, strengthen, and optimize mechanisms and tools for judicious and cost effective vector management.	Objective 4: Improving vector surveillance and integrated vector management.
Goal 3: Strengthen efforts to achieve universal access to prompt, accurate, and quality malaria diagnosis, followed by rapid treatment with effective antimalarial medicines.	Objective 1: Improving/sustaining monitoring of efficacy of and resistance to antimalarials, and prevent emergence of resistance to antimalarials. Objective 2: Improving access to quality diagnosis and treatment. Objective 3: Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control.
Goal 4: Foster an environment that promotes sustainability and supports collaborative efforts and best practices to combat the disease.	Objective 6: Improving networking and strengthening systems.
Goal 5: Optimize efforts to strengthen health systems (including strategic planning, monitoring and evaluation, operations research, among others) and the countries' capacity to address their respective malaria challenges both relevantly and adequately.	Objective 6: Improving networking and strengthening systems.

AMI activities that contribute most to the goal of epidemiological surveillance of the PAHO Strategy are those that provide technical assistance, improve information systems, and produce tools for epidemiological surveillance in different conditions and their integration or coordination with the surveillance and control of vectors (Annex 1A).

The AMI activities that have the greatest contribution in reference to PAHO's Strategy goal of vector control are those that give technical assistance and generate evidence for vector surveillance, susceptibility to insecticides, and integrated vector control (Annex 1B).

AMI activities that contribute to the universal access to quality diagnosis and treatment (PAHO Strategy Goal 3) are the technical assistance development, methodologies and tools to improve the quality of diagnostics, monitoring efficacy of antimalarials, management, and control of antimalarial quality (Annex 1C).

AMI has created and strengthened a network that links national programs for malaria control in 11 countries and partners which provide technical assistance with PAHO management contributing to Goal 4 of the PAHO Strategy to promote sustainability in collaboration with exchange of experiences and best practices (Annex 1D).

AMI contributes to South-South cooperation and the exchange of experiences, strengthening the capacity of national malaria control programs, facilitating synergies with other projects or initiatives and strategies against malaria, and financial strategies (Annex IE).

The AMI objectives do not indicate how they contribute to, not even in the AMI documents is it indicated how it aligns with, the PAHO Strategy and Plan of Action goals. Some activities and / or objectives of AMI do not express results of technical assistance or capacity building, and are written more as objectives of the PAHO Strategy and Action Plan, particularly those that begin with the word "ensure" (See list of objectives that should need to be reviewed in Annex IF).

The benefit of the alignment with the Strategy and Action Plan against Malaria of the Americas is that it reinforces the development of actions in prioritized lines to achieve its goals and objectives, and the implementation as the responsibility of the countries following standard procedures and using their own resources. It is necessary that within the operational plan, AMI's work areas are developed with specific goals and objectives of the Plan. Planning procedures, coordination of technical cooperation, and implementation of actions based on evidence from AMI/RAVREDA should be a part of PAHO Strategy and Plan of Action for Malaria in the Americas.

Since the PAHO Strategy and Plan of Action for Malaria in the Americas is an expression of the will of countries to fight this disease, then the alignment of AMI could be a good example of how to align international technical cooperation with a PAHO strategy, implementing the Paris Declaration and strengthening the governance of country health systems.

The implementation of AMI with PAHO and the NMCPs also facilitated cooperation with the design and planning of projects of the Global Fund to Fight HIV, TB and malaria ¹⁰, as much as for the evidence generated as well as for the AMI technical assistance. Also, the projects of the Global Fund for malaria in several countries were aligned with the AMI and PAHO strategy.

F2: AMI is associated with the decline of the Morbidity from malaria in Latin America and Caribbean

The evidence in this report supports the findings that the activities of AMI have played a major role in the decline of the incidence from malaria. The timeline of AMI activities (Figure 3) shows that changing the treatment scheme, monitoring efficacy and resistance to antimalarials, and improving the quality of diagnosis are related to the declining trends of this indicator. The reduction of malaria is attributed to the adoption of Artemisinin combination therapies (ACT) for the treatment of *Plasmodium falciparum*, where chloroquine was resistant. In some countries, it is also attributed to a decrease from 14 to 7 days of treatment with primaquine (PQ) for the combined treatment with chloroquine (CQ) regimen for *Plasmodium vivax*, to the introduction of bed nets impregnated with long-lasting insecticide (LLIN), to a more efficient management of national programs, and to actions targeting high-risk populations, among others¹¹.

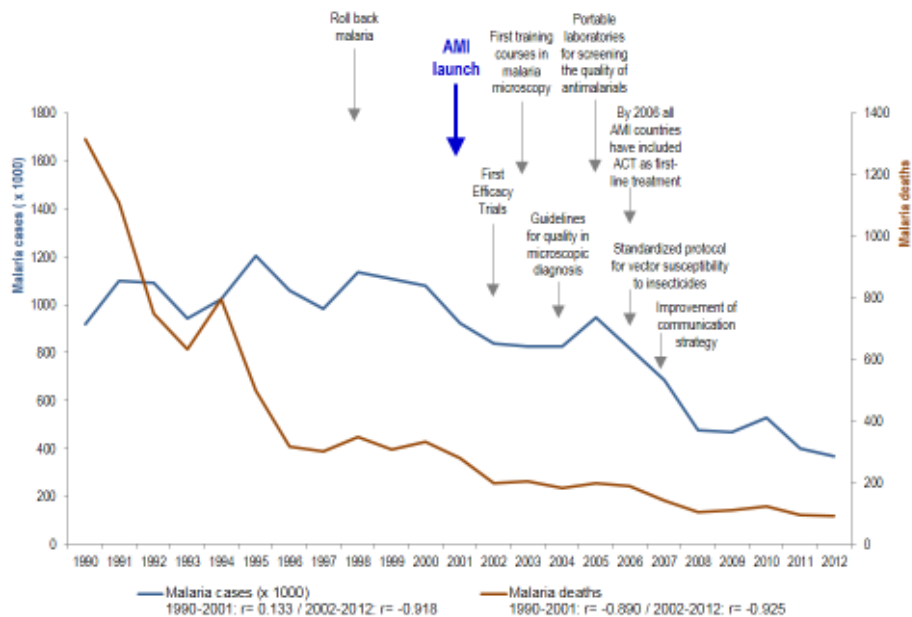
¹⁰ PAHO (2011). Estrategia y Plan de Acción sobre la Malaria. 51 Consejo Directivo, 63ª. Sesión del Comité Regional. Washington, D.C., EUA, del 26 al 30 de septiembre del 2011

¹¹ Barillas, E., Barojas, A, y V. Pribluda. 2011. Documento estratégico para la gestión del suministro y garantía de la calidad de los medicamentos e insumos para el diagnóstico y tratamiento de la malaria. Preparado por el Programa Strengthening Pharmaceutical Systems (SPS) de Management Sciences for Health (MSH), el Programa Promoting the Quality of Medicines Program (PQM) de la Farmacopea de Estados Unidos de América (USP, inglés) y Links Media, LLC. para la Agencia de los Estados Unidos para el Desarrollo Internacional (USAID) bajo la Iniciativa Amazónica Contra la Malaria. Gaithersburg, MD: Links Media, LLC.

Number of malaria cases

Between 1990 and 2012, the total cases of malaria (confirmed by microscopy) in AMI member countries declined from 847.065 to 366.089. When the analysis is disaggregated by period (1990-2001 and 2002-2012), between 1990 and 2001, the trend in the number of malaria cases was stationary (Spearman's $\rho = 0.077$, $p = 0.812$), whereas in the period corresponding to the implementation of AMI activities (2002 to 2012), the trend in the number of cases was strongly descending (Spearman's $\rho = -0.800$, $p = 0.003$).

Figure 3. Timeline of AMI activities related to the trend of malaria cases and deaths during 1990-2012



Source: prepared by C. Gutierrez for this evaluation. Data of malaria's morbidity and mortality: WHO (2013), World Malaria Report

Comparing AMI countries of the Amazon Basin to Central America, the total malaria cases between the years 2002 to 2012 were 6,554,615 vs 409,547, respectively. This marked difference is mainly due to the difference in population size between the two areas (Annex 2A). The trend in the number of malaria cases has not been uniform across countries, as shown in the Table 2. This relative difference has been greater in Central America compared to countries of the Amazon basin, averaging for the period 2002 to 2012 a decrease of -57.5% and -24.8%, respectively.

In addition to the absolute number of cases, it is important to analyze the relative changes in similar time periods. So we considered it was convenient to analyze the five-year percentage changes in the number of malaria cases. Thus, in the seven periods analyzed prior to AMI, only three periods demonstrated a relative reduction in malaria cases, while in the 11 periods of the implementation of AMI a decrease was observed in all periods (Annex 2B).

Table 2. Trend of malaria cases before and during the implementation of AMI by regions and countries

Region	Country	Trend of malaria cases	
		Before AMI	During AMI implementation
Amazon basin	Brazil	Mild descending, not significant (rho= -0.336; p= 0.286)	Moderate descending, significant (rho= -0.718, p= 0.013)
	Colombia	Mild ascending, not significant (rho= 0.266, p= 0.404)	Strong descending, significant (rho= -0.936, p< 0.001)
	Guyana	Mild descending, not significant (rho= -0.308, p= 0.331)	Stationary (rho= 0.082, p= 0.811)
	Peru	Moderate ascending, not significant (rho= 0.469, p= 0.124)	Strong descending, significant (rho= -0.982, p< 0.001)
	Suriname	Strong ascending, significant (rho= 0.839, p= 0.001)	Strong descending, significant (rho= -0.936, p< 0.001)
Central America	Belize	Moderate descending, not significant (rho= -0.566, p= 0.055)	Strong descending, significant (rho= -0.936, p< 0.001)
	Guatemala	Stationary (rho= -0.126, p= 0.697)	Strong descending, significant (rho= -0.900, p< 0.001)
	Honduras	Moderate descending, significant (rho= -0.587, p= 0.045)	Strong descending, significant (rho= -0.936, p< 0.001)
	Nicaragua	Mild descending, not significant (rho= -0.203, p= 0.527)	Strong descending, significant (rho= -0.836, p= 0.001)
	Panama	Mild ascending, not significant (rho= 0.399, p= 0.199)	Strong descending, significant (rho= -0.836, p= 0.001)
TOTAL AMI COUNTRIES		Stationary (rho= 0.077, p= 0.812)	Strong descending, significant (rho= -0.800, p= 0.003)
	Bolivia*	Mild ascending, not significant (rho= 0.336, p= 0.286)	Strong descending, significant (rho= -0.800, p= 0.003)
	Ecuador	Mild ascending, not significant (rho= 0.287, p= 0.366)	Strong descending, significant (rho= -1.0, p< 0.001)
	Venezuela*	Mild descending, not significant (rho= -0.245, p= 0.443)	Moderate ascending, not significant (rho= 0.582, p= 0.060)

* Currently not AMI member

Source: Data of malaria's morbidity: WHO (2013), World Malaria Report

Relationship of the AMI activities^{12 13 14 15} with the trend of malaria cases

The relationship of the AMI activities with the trend of malaria cases in the Amazon region countries is shown in Table 3. During the period in which AMI activities were implemented, there is a strong and significant trend in the reduction of malaria in these countries, and shows that the main AMI contributions are the activities of its four objectives: i) improving / maintaining and monitoring the effectiveness of and resistance to antimalarials, and preventing the emergence of resistance to antimalarials, ii) improving access to quality diagnosis and treatment; iii) improving the quality assurance and control of antimalarials and other supplies for malaria prevention and control; and iv) improving vector surveillance and integrated vector management. The relationship is less for the development of activities to improve epidemiological surveillance, and no country activities for AMI's objective 6 are reported: improving the network and systems strengthening.

¹² OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID"

¹³ PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI)

¹⁴ PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012

¹⁵ USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

The activities were classified into three categories: training (T), studies and / or technical assistance (S / TA), and interventions and / or technical regulations (I / TR). Most of the countries have implemented the three categories of activities to improve the management and quality control of antimalarials. The activities that may best explain the effect on the malaria situation are the interventions and the designed and implemented technical regulations. In this regard it has been verified that all countries have shown achievements in improving their monitoring of the efficiency of, and resistance to, antimalarials. And in most countries, in improving the management and quality control of antimalarials, as well as improving access to diagnosis and treatment. The study by Flores et al. (2011) ¹⁶ argues that the introduction of ACTs, by the AMI initiative, has contributed significantly in reducing malaria. Whereas the ACT control strategy has been introduced and implemented following a systematic approach and technical guidelines.

Malaria cases in Central America have also been sharply reduced during the period 2002-2012, however the implementation of AMI activities in these countries were not launched until 2008, therefore this reduction is not directly associated with AMI. Since the contributions of AMI significantly contribute to the implementation of most objectives of the PAHO Strategy and Plan of Action for Malaria in the Americas, lessons learned, evidence produced, tools and technical assistance strategies developed by AMI could have indirectly contributed to the malaria situation in Central America.

Table 4 presents AMI activities conducted in Central American countries, and shows that Honduras and Panama have quickly implemented activities in order to modify technical regulations and implement interventions to improve monitoring of antimalarial drug efficacy. They have also implemented activities to improve access to diagnosis and treatment, management and quality control of antimalarials, and for the surveillance and vector control. Furthermore, Honduras with Peru carry out external performance evaluations of microscopic diagnosis of malaria for other countries in the region. These achievements in a shorter period of time, suggest that the Central American countries have developed activities to improve these functions long before the direct AMI support, probably because AMI has strengthened the role of PAHO and provided strategies and tools that can be expanded to other countries that did not participate in AMI.

¹⁶ Flores W, Chang J, Barillas E. Rapid assessment of the performance of malaria control strategies implemented by countries in the Amazon sub region using adequacy criteria: case study. *Malaria Journal* 2011, 10:379

Table 3. AMI activities in the Amazon basin countries. AMI/PAHO report, period 2002-2012

Amazon basin countries	AMI activities											
	Efficacy and resistance monitoring			Diagnosis and treatment			Management and quality control of antimalarials			Surveillance and vector control		
	T	S/TA	I/TR	T	S/TA	I/TR	T	S/TA	I/TR	T	S/TA	I/TR
Brazil												
Colombia												
Ecuador												
Guyana												
Peru												
Suriname												

Key: T = trainings; S / TA = studies, technical assistance; I / TR = interventions, technical regulations. = more than 2 activities or results;

= 1 to 2 activities; = no activities. According to AMI/PAHO report.

Policies and standards have been implemented in all of the Amazon region countries and in most of the Central American countries that modified treatment regimens based on ACT and promote external performance evaluation of microscopists. In addition, most countries of the Amazon region have developed policies and procedures manuals to improve drug management and quality control of antimalarials. Annexes 2F-2R details the activities and products of each AMI objective for each country in relation to the trend of malaria cases shown.

Table 4. AMI activities in Central America. AMI/PAHO report, period 2002-2012

Central America countries	AMI activities											
	Efficacy and resistance monitoring			Diagnosis and treatment			Management and quality control of antimalarials			Surveillance and vector control		
	T	S/TA	I/TR	T	S/TA	I/TR	T	S/TA	I/TR	T	S/TA	I/TR
Belize												
Guatemala												
Honduras												
Nicaragua												
Panama												

Key: T = trainings; S / TA = studies, technical assistance; I / TR = interventions, technical regulations. = more than 2 activities or results;

= 1 to 2 activities; = no activities. According to AMI/PAHO report.

Incidence of malaria

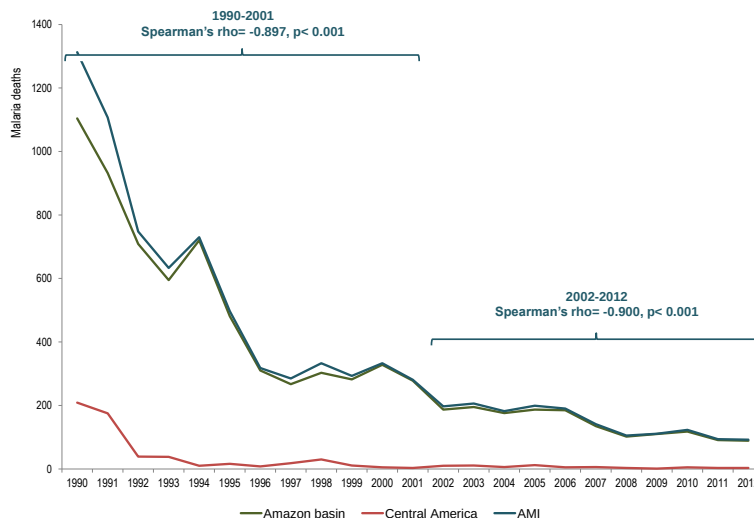
Between 1990 and 2001 the incidence of malaria in the Region of the Americas changed from 3.76 to 3.02 per thousand, with a moderate but not statistically significant downward trend (Spearman's $\rho = -0.406$, $p = 0.191$), while in the period corresponding to the implementation of AMI (2002-2012) the trend was strongly downward (Spearman's $\rho = -0.818$, $p = 0.002$), from 2.75 to 1.19 per thousand. This decrease in the incidence of malaria has been much more pronounced in both periods, for Central America (1990-2001: 6.70 to 2.79 per thousand; 2002-2012 2.41 to 0.43 per thousand) than the Amazon basin (1990 - 2001: from 3.47 to 3.04 per thousand; 2002-2012 2.78 to 1.28 per thousand). This trend in the decline in incidence has not been uniform across countries, as shown in the Annex 2D. Reducing the incidence is attributed to improved treatment.

Mortality and case fatality rate by malaria

The number of deaths from malaria has had a markedly downward trend from 1,313 deaths in 1990 to 92 deaths in 2012 in AMI participating countries, with the largest decline being during the period 1990-2001 (Figure 4).

However, since the number of malaria cases has also declined in this period, a better indicator to assess the development of the ability to produce fatal cases is case fatality rate. When trends for case fatality rates are represented, the decline observed in the case of the total number of deaths is not maintained. While prior to the implementation of AMI a downward statistically significant trend is seen (lethality went from 0.155% to 0.035%) for the period 2002-2012 the trend has been stable (0.026% 2002 0.025% was passed in 2012, with an average for the period of 0.024%). The tendency of case fatality rate has been uneven across countries, as shown in the Annex 2E.

Figure 4. Comparison of trends in malaria deaths between 1990-2001 and 2002-2012 in participating AMI country regions



Source: prepared by C. Gutierrez for this evaluation. Data of malaria's morbidity: WHO (2013), World Malaria Report

Factors associated with malaria death have been studied^{17,18} and show that delays in diagnostic and treatment of *P. falciparum* malaria are risk factors for severe malaria and mortality. The bit rate reduction in the mortality can be explained by the reduction of malaria cases in areas with access to health services which could improve the quality and timeliness of diagnosis and treatment, and now malaria cases predominantly occur in geographic areas with limited access to health services or problems with quality diagnosis and treatment.

F3: The main achievements of AMI are monitoring the effectiveness and resistance to antimalarials, drug management, and improving the quality of diagnosis and treatment

The progress and achievements of AMI were measured using several sources of information: i) interviews and surveys of PAHO officials, malaria control programs of the AMI participating countries, and AMI partners, ii) presentations, surveys and interviews of participants of the AMI / RAVREDA annual meeting in Nicaragua, iii) review of reports and publications of the activities and outcomes of AMI, and iv) case studies of AMI participating countries (Brazil, Colombia, Nicaragua and Peru). Annex 10 shows a detailed analysis of the implementation and availability of policies, methodologies and tools developed by AMI in each country.

This information shows that the regional approach, the generation of evidence, the development of strategies, methodologies and tools, highly skilled and coordinated technical assistance, and PAHO oversight and exchange of experiences in RAVREDA facilitated the implementation of WHO recommendations. It also facilitated the actions of the PAHO Strategy and Plan of Action for Malaria in the Americas, 2011-2015 to expand good practices by consolidating the actions, protocols and technical regulations to improve the management of malaria control. Currently those actions that have proven effective are being expanded and achievements are being obtained in less time as in the case of the Central American countries.

Surveys and interviews with 8 national malaria control program officials who are AMI members, PAHO reports (Tables 3 and 4), and case studies from Brazil, Colombia, Nicaragua and Peru (n = 41 respondents) show that the main achievements of AMI are: changing antimalarial treatment policies based on evidence, the momentum of innovative strategies, and implementing new strategies to ensure timely and appropriate treatment and improvement of the microscopic diagnosis of malaria (Table 5).

Key informants from the countries recognized the contribution of AMI to establish South-South cooperation in the external evaluation of the performance of microscopists, vector control and management of drugs (including antimalarials donation when there were stock outs in any of the countries). Respondents stated that without the support of AMI they would not had been able to implement these activities or would have taken longer. Also they stated that these strategies have contributed to the decline of malaria in the region. Highlighted in the interviews was the AMI cooperation model that coordinates the international cooperation of highly qualified institutions, PAHO actions and the NCMPs.

¹⁷ Velásquez A, Valencia P, Roel P, Lama A, Orozco V. Factores de riesgo de la malaria grave en el Perú. Lima: Ministerio de Salud; 2001.

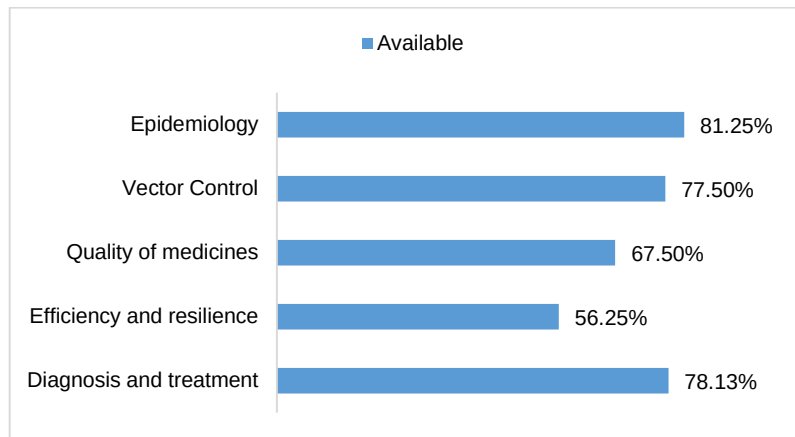
¹⁸ Sarkar J, Murhekar MV, Shah NK, van Hutin Y. Risk factors for malaria deaths in Jalpaiguri district, West Bengal, India: evidence for further action. *Malar J.* 2009; 8:133.

Table 5. AMI achievements and Challenges

AMI Objectives	Achievements	Challenges
Objective 1: Improving/sustaining monitoring of efficacy of and resistance to antimalarials, and prevent emergence of resistance to antimalarials.	- Change antimalarial drug policy	- Maintain resistance surveillance of efficacy and resistance to antimalarials in sentinel sites, due to low number of malaria cases reported - Expand surveillance in Central America
Objective 2: Improving access to quality diagnosis and treatment	- Change the treatment schemes - External Quality Assurance Program (EQAP) for malaria microscopy	- Maintain external evaluation of regional performance and expand all malarial areas - Expand services for diagnosis and treatment in areas of difficult access and lack of health services - Provide TA to develop community-based interventions
Objective 3: Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control.	- Accreditation of national laboratories in Honduras and Peru - Drug management	- Implement actions for the management of medicines in low prevalence scenarios and elimination areas - Extend the accreditation of more drug quality control laboratories - Increase the joint purchase of antimalarials
Objective 4: Improving vector surveillance and integrated vector management	- Design policies for integrated vector management - Studies of insecticide resistance	- Increase the number of countries that have policies of integrated vector management - Increase surveillance of insecticide resistance
Objective 5: Improve epidemiological surveillance	- Epidemiological surveillance system integrated with vector surveillance - Development of protocols and reporting tools for malaria and outbreaks	- Increase the number of countries with integrated surveillance system - Availability of a geographic information system to population centers
Objective 6: Improving networking and strengthening systems	- RAVREDA	- Institutionalize RAVREDA within PAHO - Develop TA to improve the management of NMCP in decentralized health systems and in areas of difficult geographic access, mobile populations, and lack of services

National malaria control program officials of 8 AMI participating countries responded to a survey on the level of implementation of AMI activities and achievements on 5 AMI objectives. For each objective, activities and products were identified that were expected to be completed or be implemented (Annex 3A), and each respondent answered how many of these activities or products were performed by the national control programs (Figure 5). The results of the survey show that the activities and products of Annex 3A were implemented more in the areas of epidemiology, diagnosis and treatment, and vector control.

Figure 5. Percentage of activities and products of malaria control programs that were implemented in 8 countries and percentage of those which were directly supported by AMI in 2014



Source: surveys of officials from NCMP: Belize, Guatemala, Honduras, Nicaragua, Brazil, Colombia, Ecuador and Peru, 2014

Respondents appreciated the contribution of AMI in the design and implementation of policies and strategies to monitor the effectiveness and resistance to antimalarials, and in providing evidences of the studies, training and technical assistance that have been performed in the countries.

AMI contributions in improving the efficiency of monitoring and prevention of antimalarial drug resistance

The WHO recommends that malaria endemic countries should routinely monitor the efficacy of anti-malarial drugs to detect changes in their therapeutic efficacy and guide the policy of national treatment. In this sense, tracking and regular monitoring are essential for the identification of new foci of antimalarial resistance and quickly guide prevention and containment activities¹⁹.

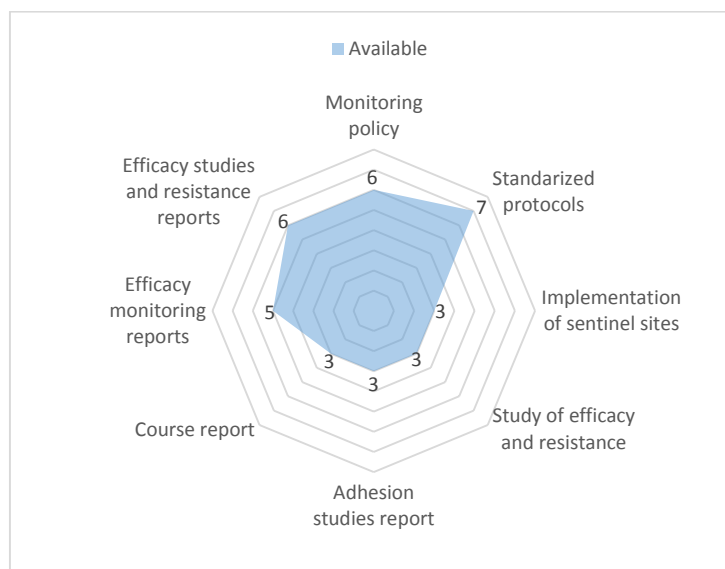
To this end, AMI designed a strategy, methodologies and tools to perform this monitoring²⁰. Products and activities scheduled by AMI include the design and implementation of policies, protocols, studies, and the establishment of sentinel sites. Results of this monitoring have revealed a suspected decreased effectiveness on the third day of treatment with Artemether/lumefantrine in Suriname and Guyana (Annex 3B). Since quality control problems were observed, confirmatory studies are underway in those countries.

The survey of 8 malaria control program officials from 8 countries shows that: 7 countries have standardized protocols for monitoring antimalarial resistance; and six countries have a policy of monitoring the effectiveness and resistance antimalarial and perform surveillance reports of efficacy (Figure 6). Annex 4A shows activities and products developed by AMI that were implemented in each country.

¹⁹ WHO (2010). Global plan for Artemisinin resistance containment (GPARC). Geneva, World Health Organization.

²⁰ Organización Panamericana de la Salud. 2011. Documento estratégico para el monitoreo de la eficacia y resistencia de los antimaláricos en el contexto actual epidemiológico. Preparado por la Organización Panamericana de la Salud (OPS), en colaboración con los Centros para el Control y la Prevención de Enfermedades (CDC) y Links Media, LLC. para la Agencia de los Estados Unidos para el Desarrollo Internacional (USAID) bajo la Iniciativa Amazónica Contra la Malaria. Gaithersburg, MD: Links Media, LLC.

Figure 6. Number of countries of the 8 which participated in the survey that implemented AMI supported activities and products and that are necessary for monitoring the effectiveness and resistance to antimalarials



Source: surveys of officials from NCMP: Belize, Guatemala, Honduras, Nicaragua, Brazil, Colombia, Ecuador and Peru, 2014

AMI contributions in improving access to quality diagnosis and treatment

WHO (2012) is pushing the "Test Track Treat"²¹ strategy because early diagnosis and treatment as well as disease surveillance have proven most effective in controlling malaria. To this end, WHO has published technical guidelines for the diagnosis²², treatment and malaria surveillance²³. Following these recommendations AMI has the following activities and expected products: external evaluation of microscopic diagnosis^{24,25}, existence of laboratories that monitor the performance of microscopists, standardized training protocols for microscopists, treatment policies, management protocol of primaquine, follow-up protocol of supervised treatment, standardized protocols for treatment training and guide for the selection of RDT's.

Officials from 8 countries who were surveyed report that countries implemented 78% of these activities and products. It is noted that the national performance monitoring is done to microscopists in all countries that participated in the survey (Figure 7). The support of AMI was higher in the External Evaluation of Reference Laboratories countries by Laboratories Honduras and Peru (Box 1). Annex 4B detail the implementation of these actions in each country shown.

²¹ OMS (2012). Test, Treat, Track Ampliando el diagnóstico, tratamiento y vigilancia de la malaria. Ginebra:

²² OMS (2011). Manual Operativo para el Acceso Universal al Diagnóstico de Malaria

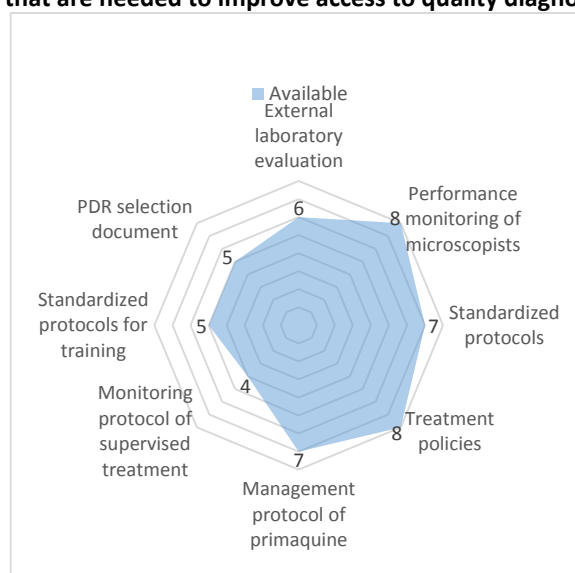
²³ OMS (2010). manuales para ayudar a los países endémicos a fortalecer su vigilancia para malaria

²⁴ Pan American Health Organization. 2006. *Guidelines for implementation of a quality management system in microscopic diagnosis of malaria: Standardization of procedures and tools for quality control and external performance evaluation in laboratory networks*. OPS/DPC/CD/M/393/06. Washington, DC: Pan American Health Organization. <http://www.paho.org/English/AD/DPC/CD/ravreda-quality-mgt.pdf> (accessed June 19, 2009).

²⁵ PAHO (2012). PAHO (2012). External Quality Assurance Program for Malaria Microscopy. Technical report. First slide panel 2011-2012. WDC: Pan-American Health Organization. Regional Malaria Program, Prevention and Control of Communicable Diseases. Health Surveillance and Disease Prevention and Control

. Technical report. First slide panel 2011-2012. WDC: Pan-American Health Organization. Regional Malaria Program Prevention and Control of Communicable Diseases. Health Surveillance and Disease Prevention and Control

Figure 7. Number of countries of the 8 which participated in the survey that implemented activities and products promoted by AMI that are needed to improve access to quality diagnosis and timely treatment



Source: surveys of officials from NCMP: Belize, Guatemala, Honduras, Nicaragua, Brazil, Colombia, Ecuador and Peru, 2014

Box 1. External Quality Assurance Program for Malaria Microscopy (EQAP) ²⁶

The objective is to evaluate of the performance of national reference laboratories in the countries of the Region in microscopic malaria diagnosis, with a view to maintaining an efficient system of quality control and strengthening the monitoring of malaria diagnosis in the Region of the Americas. This program will not only strengthen the diagnosis of malaria at referral centers, but it will allow the sharing of skills and resources to strengthen the country level through South-South cooperation²⁷.

This applies to the national reference laboratories of the countries of the Region that, voluntarily and in writing, have agreed to participate in the external evaluation of the quality of microscopic diagnosis of malaria, which will be carried out through the shipment of slide panels. The laboratories of the participating countries should extend this evaluation methodology using slide panels to the intermediate levels (major regional laboratories) of their countries to strengthen the national network for surveillance of malaria diagnosis²⁸.

The program uses the following methodology: evaluation of diagnostic concordance with slide panels. The panels have positive thick blood films (*P. vivax*, *P. falciparum*, mixed infections), negative films (malaria free person), and slides with low, medium and high parasite densities.

Results in the second round ²⁹ of the year 2013:

- Good performance in the recognition of malaria cases in general.
- Difficulties in diagnosing species occurs in more than half of laboratories evaluated, because of problems with the identification of mixed infections
- The countries evaluated better recognize *P. vivax* asexual stages than sexual, and some problems were observe to recognize sexual stages or gamitocytes in *P. falciparum*

²⁶ PAHO (2011). External quality assurance program for malaria microscopy diagnosis. WDC: Pan-American Health Organization, Regional Malaria Program Prevention and Control of Communicable Diseases. Health Surveillance and Disease Prevention and Control

²⁷ OPS (2010). Programa de Evaluación Externa del Desempeño (PEED). Organización Panamericana de la Salud.

²⁸ OPS (2012). Informe Técnico del Primer Panel. 2011-2012. Programa de Evaluación Externa del Desempeño (PEED). Organización Panamericana de la Salud

²⁹ Lecture by María Paz Adé - OPS WDC, XIII Annual Meeting of AMI/RAVREDA, Nicaragua March 11 – 14, 2014

- Difficulties in identifying cases, species discrimination, proper identification of stages are exacerbated in low parasitemia slides(<500 parasites /ul)
- No matching results were achieved in quantifying parasite densities in parasites per microliter of blood, even do almost all the participant laboratories reported increase percentage compare to the 1st round.

AMI contributions in improving quality assurance and quality control of antimalarial and other supplies for the prevention and control of malaria

AMI developed a strategy³⁰ for supply management and quality assurance of medicines and supplies for diagnosis and treatment of malaria, which consists of: i) periodic review of treatment schemes; ii) scheduling of the needs to consider in supplying areas of low incidence; iii) development of strategic information systems for supply management; iv) implementation of alternative mechanisms for drug procurement; v) integration of transport systems, storage and inventory management; vi) assurance and quality control of medicines; vii) strategies for acquisition; viii) strategies for distribution; and xi) adherence studies and impact assessment.

Table 6. Progress level of technical assistance interventions of MSH / SIAPS in countries that participate in AMI, 2014

Level of Progression	Value										
Planned	+										
Design and Initial Implementation	++										
Consolidation and Results/Impact Evaluation	+++										
Included in regular program operations	★										
MSH/SIAPS Technical Assistance Intervention	Brazil	Colombia	Ecuador	Guyana	Peru	Suriman	Guatemala	Belize	Honduras	Nicaragua	Panama
Supervision of Health Facilities	★	★		++							
Improving Storage Conditions and Practices			★		★				++		
Monitoring Antimalarial stocks	★	★	★		★				★	★	★
Requirement and Clearance Procedures		+++	★		+++				++		
Evaluation criteria control strategies "adequacy"	★	★	★	★	★			★	★	★	★
Monitoring criteria control strategies "adequacy"	++	+									
Introduction guides first level of care delivery	★	★			★		++				+
Introduction standards low incidence programming	★	+	★		★				++	★	
Regional results/impact study	++	+++	+++		++	+		+	+	+	
Access to medicine in neglected communities (Mines)	++					+					

Source: presentation of Edgar Barillas-MSH, XIII Annual Meeting of AMI / RAVREDA evaluation, Nicaragua March 11-14, 2014

³⁰ Barillas, E., Barojas, A, y V. Pribluda. 2011. Documento estratégico para la gestión del suministro y garantía de la calidad de los medicamentos e insumos para el diagnóstico y tratamiento de la malaria. Preparado por el Programa Strengthening Pharmaceutical Systems (SPS) de Management Sciences for Health (MSH), el Programa Promoting the Quality of Medicines Program (PQM) de la Farmacopea de Estados Unidos de América (USP, inglés) y Links Media, LLC. para la Agencia de los Estados Unidos para el Desarrollo Internacional (USAID) bajo la Iniciativa Amazónica Contra la Malaria. Gaithersburg, MD: Links Media, LLC.

To implement this strategy, AMI financed and coordinated the technical cooperation of MSH, USP and PAHO developing activities to enhance quality control of malaria and the basic components of supply chains. Likewise, it was possible that the tools are part of the routine work of several countries (Table 6). Brazil, Colombia, Ecuador and Peru are the ones who have institutionalized the monitoring activities, improvement of storage conditions and practices, evaluation of control strategies, the supply rails of the first level, and programming criteria in areas of low incidence.

AMI facilitated implementing a three level approach to strengthen capacities for quality assurance and control of antimalarials in the region and for South-South cooperation. Two countries institutionalized the three level approach of quality control of drugs including antimalarials, with normative regulatory support, coordinating institution and procedures manual, also achieved accreditation of laboratories with quality control system (ISO 17025), trained personnel and equipment and supplies with appropriate reference standards. Most countries have trained personnel and Minilab® equipment for rapid testing of antimalarial quality assessment. Also they have developed pilots and sampling of the quality of antimalarials in AMI countries (Table 7).

Table 7. Report of the advance of USP technical assistance for assurance and quality control of antimalarials in the AMI participating countries, 2014

Areas of Work	Requirements for the Effective implementation of The Area of Work		Brazil		Colombia		Ecuador		Guyana		Perú		Surinam		AC&C/ Guatemala	
			Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
N2: Rapid Analytical Tests	Minilab		X		X		X		X		X		X		X	
	Trained Personal			X	X			X	X		X		X		X	
N3: Registration Tests	Functional & dependable Lab	Adequate Infrastructure	X		X			X		X	X		X		X	
		Quality Management System (SGC)	?	?	X			X	X		X		X		X	
		Trained Personal	X		X			X	X		X		X		X/!	
Three-tiered Implementation approach	Support Regulatory / Normative			X	X		X/?		X		X		X		X/!	
	Coordinating Institution			X	X		X	X	X		X		X		X/!	
Recent Quality Monitoring (2012-2014)				X/?	X			X		X	X		X		X	

Source: presentation of Víctor Pribluda-USP, XIII Annual Meeting of AMI / RAVREDA evaluation, Nicaragua March 11-14, 2014

Box 2. AMI provides technical assistance to enhance the capabilities of official medicines control laboratories (OMCLs) in the region³¹

Case: International Accreditation of the National Quality Control Center of the National Health Institute of Peru^{32 33}

AMI provides assistance to improve the technical capacity of OMCLs in the region through the program Promotion of Quality of Medicines (PQM), which is implemented by the United States Pharmacopeia (USP) partner. This program selected personnel to train in OMCLs in OMCL of Peru, the qualified staff led OMCLs in the assessments of other OMCLs pursuing ISO / IEC 17025:2005 accreditation and WHO prequalification. The OMCLs participating in the scheme competent inter-laboratory testing.

The OMCL of Peru is called the National Quality Control Center (CNCC) which is a branch of the National Health Institute. After several years of care and demanding work, in March 2009 the CNCC received its accreditation to ISO / IEC 17025:2005 on 5 test methods. Peru was the first government laboratory in obtaining this distinction at the level of countries in the Americas. This accreditation was possible thanks to the technical assistance of AMI / USAID and the USP. For 2010, the accreditation was extended to 12 methods that cover about 90% of the trials conducted by the CNCC.

This accomplishment allowed the CNCC to apply for qualification to the World Health Organization Reference Laboratory for WHO Prequalification of Medicines Program, being accredited since 2010 as a WHO reference laboratory for testing finished products and active pharmaceutical ingredients.

In 2012, the CNCC after a demanding second reaccreditation audit achieved ISO 17025, demonstrating continued compliance with the requirements of the International Standard that meets personal expertise in their trials and Management Quality System. One of the innovations is a developed Integral Management System Laboratories (SIGEL) that has enabled the computerization of its processes.

These accreditations allow, among other things, the ability to raise the quality of service of the CNCC, and cooperate with other countries to improve the quality control of laboratories.

Technical cooperation by USP has systematized the experience and allows for expansion of the three-tiered approach implementation for quality control of drugs with South-South Cooperation in less time. This experience is being documented in published technical reports^{34, 35} and considers that the case of the Laboratory of Drug Quality Control of Peru is an example of good practice (Box 2).

³¹ Links Media and U.S. Pharmacopeia. 2010. A regional pledge for good quality medicines: Collaborations between official medicines control laboratories bring a sustainable approach to strengthen regional capabilities that ensure the quality of medicines. AMI Success Story. Washington, DC: U.S. Agency for International Development. (In English and Spanish)

³² <http://www.ins.gob.pe/portal/home-cncc/8>

³³ Medication quality in Peru and region strengthened with official laboratory's accreditation. USAID, USP Drug Quality and Information Program provided support to Peru's Centro Nacional de Control de Calidad. http://www.eurekalert.org/pub_releases/2009-05/up-mqi052109.php

³⁴ Pribluda V. et al. (2012). Implementation of basic quality control tests for malaria medicines in Amazon Basin countries: results for the 2005–2010 period. *Malaria Journal* 2012, 11:202; <http://www.malariajournal.com/content/11/1/202>

³⁵ Evans L. et al. (2012). Quality of anti-malarials collected in the private and informal sectors in Guyana and Suriname. *Malaria Journal* 2012, 11:203; <http://www.malariajournal.com/content/11/1/203>

F4: The reduction of malaria cases in the Americas leads to less widely targeted areas and populations with particular characteristics, requires technical cooperation to strengthen integrated vector management, surveillance and specialized management services at the local level

The transmission of malaria in the Americas is considered unstable and moderate to low risk of transmission³⁶ and focused in specific areas (Annex 6), and currently is located mainly in a small number of localities (paths, neighborhoods and small villages)³⁷. Many of these areas are characterized by difficult geographical access (most cases are found in districts of the Amazon basin and border areas), with very limited access to health services, migrant populations (artisanal mining, workers in logging activities, etc.), indigenous people living in situations of social exclusion and poverty.

The activities in malaria control are designed globally for the country, but there is weakness in the implementation of policies aimed at these transmission risk scenarios. In areas with little access to health services (limited availability of human resources, financial, and equipment and supplies, and high staff turnover) disorganization of communities limit the activities of malaria control and prevention, provide untimely poor coverage and determine the delay in diagnosis and treatment ^{38 39}.

The control and elimination in these areas is not possible without the participation and involvement of affected communities⁴⁰. The involvement of communities and their representatives may accelerate the elimination of malaria and help to sustain, especially in actions to prevent breeding of mosquito and support the malaria treatment ^{41 42}, such as⁴³: the mass malaria treatment administration (Mass Drug Administration), screening and treatment focused FSAT Administration (focal treatment Screening Administration), Screening and Management of highly targeted treatment HiFSAT (High focal treatment Screening Administration), IRS (indoor residual spraying); LLIN (long-lasting insecticidal net), MSAT (mass screening and treatment) and RDT (rapid diagnostic test).

Consequently, prevention, control and elimination of malaria in a focalized scenario requires a stratified surveillance system, integrated vector management, development of operational research, provide interventions in the workplace, community-based actions, and develop strategies to expand health services. The document review, interviews and survey results show that AMI is currently supporting these actions in a lesser extent. AMI should strengthen the actions performed by PAHO and the countries in the areas of epidemiological surveillance and vector control, and develop a course of action to expand health services within the community.

³⁶ Organización Panamericana de la Salud. Estrategia para la toma de decisiones en el marco del manejo integrado de vectores de malaria (ED MIVM). Washington, D.C.: OPS, 2013.

³⁷ WHO (2012). Diseases Surveillance for Malaria Control. World Health Organization.

³⁸ WHO (2012). Community-based reduction of malaria transmission. World Health Organization.

³⁹ WHO (2012). Diseases Surveillance for Malaria Control. World Health Organization.

⁴⁰ Feachem, R.G.A. and The Malaria Elimination Group (2009). Shrinking the Malaria Map: A Guide on Malaria Elimination for Policy Makers. San Francisco: The Global Health Group, Global Health Sciences, University of California, San Francisco

⁴¹ Rodríguez M, Betanzos-Reyes A (2011). Grupo de Trabajo de Malaria del Sistema Mesoamericano de Salud Pública. Plan de mejoramiento del control de la malaria hacia su eliminación en Mesoamérica. salud pública de México / vol. 53, suplemento 3 de 2011

⁴² WHO (2012). Community-based reduction of malaria transmission. World Health Organization.

⁴³ WHO (2011). Global Plan for Artemisinin Resistance Containment (GPARC)

AMI has contributed to the Strategy for Decision Making under the Integrated Vector Management for Malaria developed by PAHO⁴⁴, which provide the guidelines for the prevention and control of malaria in this new scenario.

AMI contributions in improving surveillance and integrated vector management

AMI promoted the consolidation of a subsystem for entomological surveillance in malaria and its use for decision-making since 2005, due to the variety of eco-epidemiological settings where malaria transmission occurs in the region of the Americas. There are differences in transmission dynamics that influence the effectiveness of vector control actions, and constitute a challenge for planning interventions. Based on this experience, in 2006, PAHO developed a strategy to streamline decision-making in the control of malaria vectors^{45 46}, which was published in 2013. This strategy has been developed under the Integrated Vector Management (IVM) for malaria (WHO, 2004, PAHO/WHO, 2008)^{47 48}, and Resolution 48/13 (2008) of the Directing Council of PAHO/WHO.

The strategy is based on the intelligent use of information systems and public health surveillance, under the International Health Regulations (IHR), to identify locations (priority focus of intervention), select interventions recognized as the most cost-effective, and to assess their effectiveness and impact. The strategies of vector control are concentrated in the use of long life insecticide treated mosquito nets; monitoring activities of resistance to insecticides are performed with the recommended method of the Bottle, developed by the CDC (CDC, 2010) in AMI⁴⁹.

In the survey of 8 countries, most countries developed vector map reports, reports of insecticide resistance, evaluation of ITNs and control vector policy (Figure 8). AMI's contributions are mainly: the design of integrated vector policies (Colombia, Ecuador, Guyana, Suriname, Honduras, Nicaragua and Panama), and studies of insecticide resistance. Annex 5A contains the responses of officials from each country on the activities and products that were developed.

⁴⁴ WHO. 2004. Global strategic framework for integrated vector management. Geneva, World Health Organization, 2004 (WHO/CDS/CPE/PVC/2004.10)

⁴⁵ Pan American Health Organization. 2007. Evidence-based selective vector control. HDM/CD/M/489-07

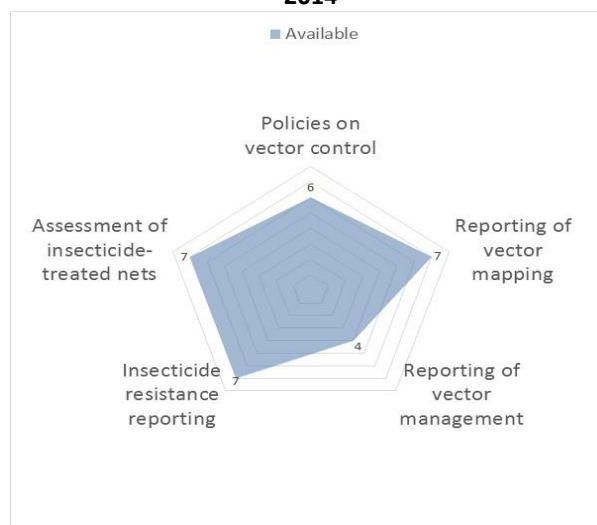
⁴⁶ Organización Panamericana de la Salud. Estrategia para la toma de decisiones en el marco del manejo integrado de vectores de malaria (ED MIVM). Washington, D.C.: OPS, 2013.

⁴⁷ WHO. 2004. Global strategic framework for integrated vector management. Geneva, World Health Organization, 2004 (WHO/CDS/CPE/PVC/2004.10)

⁴⁸ OPS/OMS. 2008. El manejo integrado de vectores: una respuesta integral a las enfermedades de transmisión vectorial, Resolución Consejo Directivo OPS/OMS, CD48.R8

⁴⁹ CDC. 2010. Guidelines for Evaluating Insecticide Resistance in Vectors Using the CDC Bottle Bioassay. First ed.

Figure 8. Number of countries of the 8 which participated in the survey that implemented activities and products promoted by AMI that are needed to improve surveillance and integrated vector management, 2014



Source: surveys of officials from NCMP: Belize, Guatemala, Honduras, Nicaragua, Brazil, Colombia, Ecuador and Peru, 2014

AMI contributions in epidemiological surveillance of malaria

Right now countries have important challenges to improve their surveillance systems and adapt to changes in the transmission of malaria. In this regard, WHO has developed a surveillance guide for malaria control⁵⁰ and another guide for surveillance in areas of malaria elimination⁵¹. Likewise, PAHO has published the “Guide for the reorientation of malaria control programs with a view to elimination of the disease”⁵².

In this framework, AMI promotes stratification and improving malaria information systems by individual databases, geographic information systems integrating case information interventions and behavior of parasites and vectors, systems of passive and active detection, and epidemiological intelligence and answer outbreak containment.

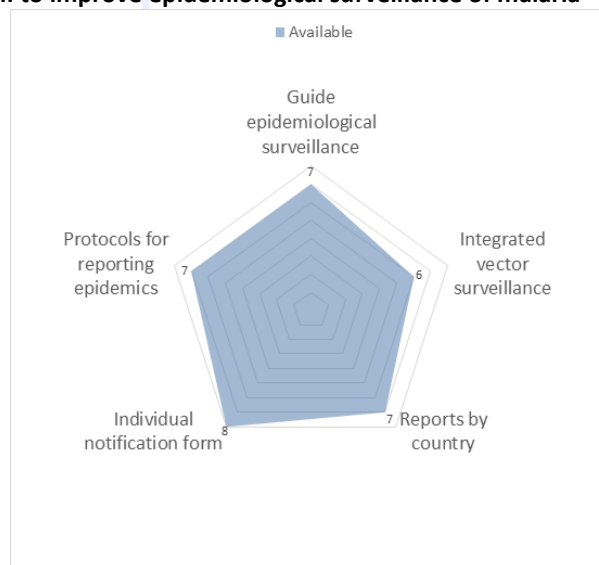
Figure 9 shows the results of the survey of 8 country officials from the AMI participating countries. Thus, all countries have an individual registration record of cases of malaria, most countries have protocols and tools for reporting outbreaks and epidemics and surveillance guidelines. The reports have malaria cases by socio-demographic variables. The major contribution of AMI (Annex 5B) was in the surveillance system for integrated vector and disease surveillance (Belize, Honduras and Colombia).

⁵⁰ WHO (2012). Diseases Surveillance for Malaria Control. World Health Organization.

⁵¹ WHO (2012). Diseases Surveillance for Malaria Elimination. World Health Organization

⁵² Guía para la Reorientación de los Programas de Control de la Malaria con Miras a la Eliminación. WDC: Pan-American Health Organization, Regional Malaria Program Prevention and Control of Communicable Diseases. Health Surveillance and Disease Prevention and Control. HSD/CD/M/002-11 ISBN: 978-92-75-33041-8

Figure 9. Number of countries of the 8 which participated in the survey that implemented activities and products supported by AMI to improve epidemiological surveillance of malaria



Source: surveys of officials from NCMP: Belize, Guatemala, Honduras, Nicaragua, Brazil, Colombia, Ecuador and Peru, 2014

F5: The control of malaria requires regional action and PAHO oversight

The countries view malaria elimination impossible without strong and effective collaboration of its neighboring countries, especially in border areas⁵³. Therefore, common, well-coordinated approaches of several countries with active border collaboration under the leadership of an international organization are necessary⁵⁴. There are experiences that show that elimination of malaria is easier to do together than individually^{55 56}.

All post-elimination countries face a continued presence of imported cases of malaria and should continue its efforts to ensure that malaria is not introduced and that no autochthonous cases and deaths occur. There are examples of countries that, having achieved or nearly achieved elimination, then have experienced a massive resurgence of malaria, in some cases, taking them back to the stage of pre-elimination. This is explained by the risk of occurrence of imported cases (vulnerability), and the risk of outbreaks (responsiveness)⁵⁷. In general, in areas where malaria was highly endemic, this natural level of risk of outbreaks is high.

Neighboring countries share epidemiological characteristics for the control of the disease, and therefore continued coordinated intervention strategies are necessary (Figure 10). It must be

⁵³ Guía para la Reorientación de los Programas de Control de la Malaria con Miras a la Eliminación. WDC: Pan-American Health Organization, Regional Malaria Program Prevention and Control of Communicable Diseases. Health Surveillance and Disease Prevention and Control. HSD/CD/M/002-11 ISBN: 978-92-75-33041-8

⁵⁴ Feachem, R.G.A. and The Malaria Elimination Group (2009). Shrinking the Malaria Map: A Guide on Malaria Elimination for Policy Makers. San Francisco: The Global Health Group, Global Health Sciences, University of California, San Francisco

⁵⁵ Southern African Development Community (2007). SADC Malaria Strategic Plan 2007-2015. Gaborone, Botswana: SADC.

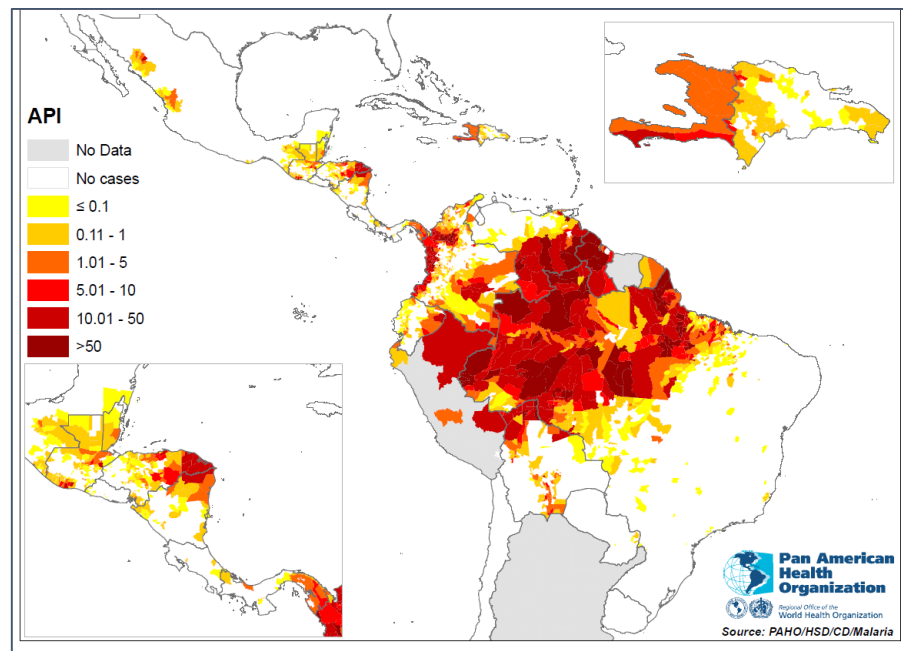
⁵⁶ African Union (2007). African Union Launch of the Africa Malaria Elimination Campaign: "Fight Malaria: Africa Goes from Control to Elimination by 2010." Johannesburg, Sudáfrica, Tercera Sesión de la Conferencia AU de los Ministros de Salud, 9-13 Abril 2007.

⁵⁷ Feachem, R.G.A. and The Malaria Elimination Group (2009). Shrinking the Malaria Map: A Guide on Malaria Elimination for Policy Makers. San Francisco: The Global Health Group, Global Health Sciences, University of California, San Francisco

remembered that although countries have borders, malaria shares ecological niches between different countries. So when the incidence of malaria is represented at sub-national level the extent of the disease can be seen across country borders.

All countries should have a system of continuing active surveillance to identify cases, and a health system with resources for diagnosis and treatment of malaria and vector control. Often this is not possible unilaterally, particularly for countries with weak health systems, limited resources, and because they prefer to focus on other priorities. Furthermore, the countries have mandates and resources to address malaria only within their jurisdiction. Any coordination with neighboring countries requires bureaucratic procedures to be followed every time there is a need to share resources with other governments or perform joint actions.

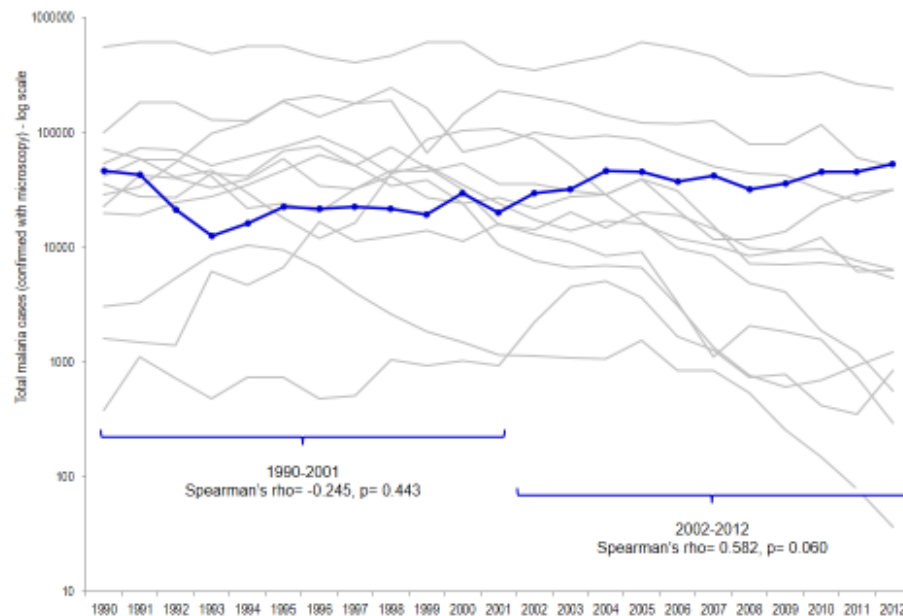
Figure 10. Malaria located in subnational spaces and borders in the Region of the Americas by Annual Parasite Index, 2011



An example of unilateral management of malaria is Venezuela, which by choice retired from AMI in 2007, and as it can see in Figure 11, the incidence of malaria has increased. Venezuela reported 76.621 malaria cases in 2013 (50% more than the previous year)⁵⁸. Venezuela is the only country in the Amazon region that exhibits this behavior.

⁵⁸ Ministerio del Poder Popular para la Salud (2013). Boletín Epidemiológico de la Semana Epidemiológica No. 52, 22 al 28 de Diciembre de 2013

Figure 11. Evolution of malaria cases in Venezuela and comparative analysis of trends between the periods 1990-2001 and 2002-2012



Source: prepared by C. Gutierrez for this evaluation. Data of malaria's morbidity: WHO (2013), World Malaria Report

For this reason, the leadership of a regional authority such as PAHO, is key to technically lead the planning, design regional strategies and binding agreements, implement the International Health Regulations, coordinate joint international technical and financial cooperation, and promote the institutional arrangements for the exchange of services for the control and elimination of malaria.

PAHO, a UN organization, is a regional authority and implements actions with the approval of the member countries that are binding agreements. With PAHO the needs and priorities of health policy are raised and discussed at the highest levels of government in the countries. PAHO has presence in all member countries with offices and qualified technical personnel, promoting awareness of the realities of the countries and generates fluid relationships and trust.

Lessons learned in the Andean Region regarding malaria control on borders with the Global Fund (PAMAFRO) Project⁵⁹ demonstrate the need for country ownership of strategies, methodologies and techniques for sustainable malaria control; and require supranational mandates and recognized and constituted procedures to implement multilateral actions. For example, PAMAFRO was managed and implemented independently from PAHO and of the national and sub-national health authorities. This situation resulted in scheduled actions different than those in the PAHO Strategy and the Plan of Action for Malaria and in spite of significant financial and technical resources, had difficulties convincing the countries to take ownership of strategies, methodologies, tools and processes of the project, affecting the sustainability and the achievement of its objectives. However, in places where PAMAFRO worked in coordination with the Ministry of Health (at all levels), AMI,

⁵⁹ Coordinación Regional del Proyecto PAMAFRO. Compartiendo Lecciones Aprendidas. Organismo Andino de Salud – Convenio Hipólito Unanue. 2010.

PAHO and other institutions involved in malaria control, the implementation and institutionalization of activities and strategies was facilitated.

The regional joint procurement of antimalarials and the exchange and donations between countries

AMI/RAVREDA recommended joint antimalarial purchase through the PAHO Strategic Fund⁶⁰, because of regulatory constraints in some countries for international procurement, lack of antimalarial drugs with sanitary registration in countries, problems of managing national drug supply systems, low purchase volumes, the reluctance of suppliers, delays in purchases, unfulfilled orders and shortages. This is more critical for the treatment of severe malaria, malaria in pregnancy, and resistance to first-line drugs. In 2010, the countries of the Amazon Basin reported shortages of antimalarials due to unfulfilled bids. At a RAVREDA meeting, support from PAHO Strategic Fund for the joint purchase of antimalarials was requested.

PAHO initiated actions for the countries to submit their antimalarial drug requirements in 2011, consolidated demand and developed international tenders. PAHO Strategic Fund officials⁶¹ indicated that problems persist in programming time of the acquisition in the countries, administrative delays for quotes and purchase orders. Not all countries have an interest in consolidated purchases and continue buying small volumes, with the need for special labeling and legends for each order.

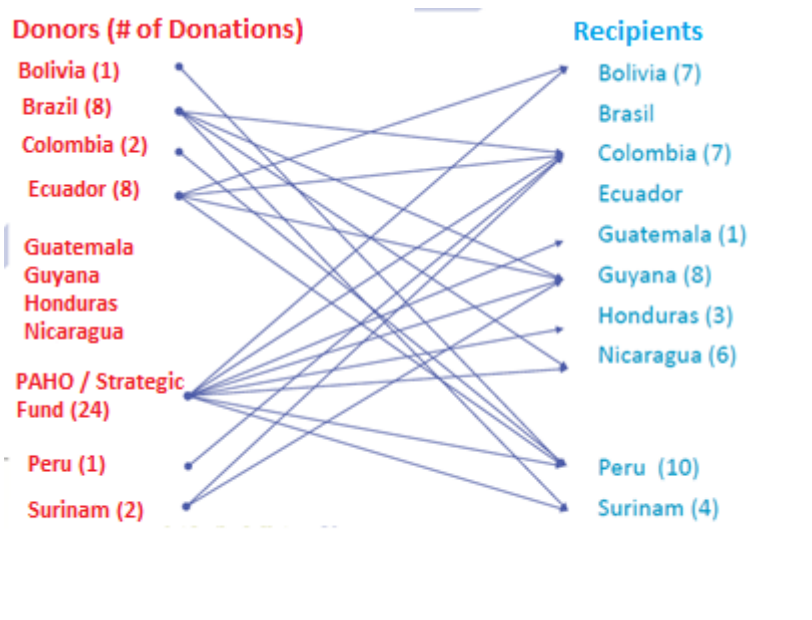
PAHO also supported the immediate purchase of medicines for the treatment of severe cases and facilitates exchanges and donations. Donations between countries (Figure 12) have become possible thanks to the information that AMI developed with MSH. PAHO is coordinating where the countries can identify who have over-stocks or those with shortages through a quarterly report shared with participant countries and partners, which is published in a community of practice called “antimalarial medicines” hosted in the PAHO’s Regional Platform on Access and Innovation for Health Technologies⁶².

⁶⁰ Barillas, E., Barojas, A, y V. Pribluda. 2011. Documento estratégico para la gestión del suministro y garantía de la calidad de los medicamentos e insumos para el diagnóstico y tratamiento de la malaria. Preparado por el Programa Strengthening Pharmaceutical Systems (SPS) de Management Sciences for Health (MSH), el Programa Promoting the Quality of Medicines Program (PQM) de la Farmacopea de Estados Unidos de América (USP, inglés) y Links Media, LLC. para la Agencia de los Estados Unidos para el Desarrollo Internacional (USAID) bajo la Iniciativa Amazónica Contra la Malaria. Gaithersburg, MD: Links Media, LLC.

⁶¹ XIII Reunión Anual de Evaluación AMI/RAVREDA, Nicaragua 11 al 14 de Marzo de 2014

⁶² PAHO Regional Platform on Access and Innovation for Health Technologies <http://prais.paho.org/rscpaho/#/home>

Figure 12. Donations of antimalarials among countries participating in AMI and PAHO Strategic Fund



Source: SIAPS – MSH Presentation at RAVREDA/AMI Meeting, Lima 2013.

F6: The decentralization of public health functions and health sector reforms affect malaria control and demand specialized technical assistance to improve management control programs

In Latin America, decentralization of the health sector has been developed with variants and different levels of development in each country. There are reports showing that decentralization affects the effectiveness and performance of public health programs, particularly when vertical programs for the control of contagious diseases become more horizontal and are integrated in decentralized health systems^{63 64 65}.

Often the central government and sub-national governments have different preferences regarding the combination of activities and expenditures to make, and respond to a different group of stakeholders and audiences. The sub-national institutions may then have incentives to evade the mandates set by the central government and thus concentrate on their own programs⁶⁶.

⁶³ Yadón ZE, Gürtler GE, Tobar F, Medicin AC (editores). Descentralización y gestión del control de las enfermedades transmisibles en América Latina. Buenos Aires: Organización Panamericana de la Salud; 2006

⁶⁴ Schmunis GA, Dias JC. La reforma del sector salud, descentralización, prevención y control de enfermedades transmitidas por vectores. Cad Saude Publica. 2000;16(Sup. 2):117-23

⁶⁵ Kalk A, Fleischer K. The decentralization of the health system in Colombia and Brazil and its impact on leprosy control. Lepr Rev. 2004;75:67-78

⁶⁶ Bossert T. La Descentralización de los Sistemas de Salud en Latinoamérica: Un Análisis Comparativo de Chile, Colombia y Bolivia. Harvard School of Public Health, Iniciativa de Reforma del Sector de la Salud de Latinoamérica y el Caribe, financiado por USAID, 2000

Decentralization and its implementation affected malaria programs circumstantially, on the changes in decision making on financial flows, changes in responsibility and operational staff, as well as information systems and surveillance^{67 68}. The main difficulties are the reduction of funding for field activities and human resources skills for planning, management and evaluation of control program ^{69 70 71}.

Currently, the program management of malaria control has difficulty maintaining resources and support for malaria control activities because cases of malaria have been reduced and because they are focused on areas that lack health services. Sub-national authorities prefer to use resources on other priorities or when outbreaks occur; there are also difficulties at the central level to exercise governance and implement control mechanisms⁷². Also, it is common that the local levels lack the capacity and ability to spend and implement logistical procedures that results in shortages of drugs and supplies and lack of trained human resources⁷³.

The disarticulation of institutions and different government levels to prevent and control malaria continues to persist. Generally the diagnosis, assessment of drug quality, logistics purchase of medicines and supplies, health promotion, vector control and management of the environment are handled by different institutions or offices.

Table 8 shows that in countries where there is decentralization with governance and program resources for malaria control implementation of AMI activities perform better and program performance and control is better. In contrast, in countries with decentralization without governance and without resources for the malaria control program, the implementation of the activities of AMI requires more effort. Annex 7 shows the situation of decentralization and control of malaria in Peru, Colombia, Brazil, Ecuador and Guyana.

AMI does not have a line of cooperation to provide technical assistance to support program management of malaria control in decentralized scenarios. AMI preferably strengthened capacity at the central level of the countries, with the assumption that trainees will share and disseminate knowledge gained to sub-national levels in the country through a cascade process, although in practice this occurs on a limited basis.

The challenges are to strengthen the governance of the national authorities to improve capacities for oversight and implementation of policies and technical regulations, which means more consulting and technical support to sub-national levels. Because many actors are involved in malaria control, it

⁶⁷ Martínez F, Knudson R, Mendoza O, Ordóñez O, Castro C. El Impacto de las reformas en salud de Colombia, Ecuador, Perú y Venezuela en la situación de la malaria. Lima: Organismo Andino de Salud/Convenio Hipólito Unanue, 2007

⁶⁸ Carrasquilla G. Descentralización, reforma sectorial y control de la malaria en Colombia. En: Yadón ZE, Gürtler RE, Tobar F, Medici AC. Descentralización y gestión del control de las enfermedades transmisibles en América Latina. Buenos Aires: Organización Panamericana de la Salud; 2006

⁶⁹ Brito JS. Análise da descentralização das ações de controle da malária no estado de Rondônia: Dois estudos de caso. [Tese de Mestre em Saúde Pública] Rio de Janeiro: Escola Nacional Da Saúde Pública; Fundação Oswaldo Cruz; 2003

⁷⁰ Ladislau JL, Leal MC, Tauil PL. Avaliação do plano de intensificação das ações de controle da malária na região da Amazônia legal, Brasil, no contexto da descentralização. Epidemiol Serv. Saúde. 2006; 15(2):9-20.

⁷¹ Tauil PL. Avaliação de uma nova estratégia de controle da malária na Amazônia brasileira. [Tese de Doutor em Medicina Tropical] Brasília: Universidade de Brasília; 2002

⁷² Organización Panamericana de la Salud/Organización Mundial de la Salud (OPS/OMS) Iniciativa contra la Malaria en la Amazonia. (2012) Informe preliminar de evaluación rápida de la gestión de la prevención y control de la malaria después de la descentralización del Sector Salud en el Perú.

⁷³ Harvey S (2009). Malaria Rapid Diagnostic Tests in the Peruvian Amazon: A Promising Start and an Uncertain Future. Case Study. Bethesda, MD: Center for Human Services

is necessary to articulate the roles of different institutions and offices. Also there is information of legal gaps and inconsistencies that prevent the central level intervention in case of the breach of public health functions by sub-national governments.

Table 8. Decentralization of public health and its relation to the progress and effectiveness of the AMI lines of work and malaria control programs

Degree of decentralization and governance	AMI Areas of Work	Malaria Control Program
Degree 1. Decentralization with Public Health governance, protected resources, management by results, penalties for non-compliance	Institutionalized, requiring highly specialized technical assistance	Effective and sustainable
Degree 2. Decentralization with resources and weak governance	Institutionalized over time with technical assistance	Partially effective
Degree 3. Decentralization without governance, without resources	Difficult institutionalization High dependence on technical cooperation	Not sustainable Reactive

An evaluation of the major global health initiatives (WHO, 2009)⁷⁴ indicates that the introduction of large numbers of disease-specific resources in weak health systems - that is, with limited human resources for health, inadequate funding and management system or deficient information systems or logistics - could not guarantee the expected results. Given this, it is recommended to achieve an appropriate balance between the opportunity to address specific health issues and strengthening national health systems, based on better interaction between these global alliances, governments, donor agencies and other stakeholders^{75 76}.

F7: RAVREDA is the main mechanism for AMI management and is valued as a good practice for the articulation of international technical cooperation between partners and countries, and has helped to reduce malaria in the Amazon Region

RAVREDA is a network of official representatives of national programs for malaria control, coordinated by PAHO. RAVREDA is a network that has consolidated in terms of the joint technical cooperation needs based on evidence and the personal and professional relationships developed since 2002. The achievements in monitoring antimalarial resistance may expand the agenda of cooperation to other lines of work. The network is a space to incorporate new themes, new member countries and cooperating partners. Countries gradually implement actions based on their own procedures and resources. In 2008, AMI began to expand into Central America.

⁷⁴ WHO (2009). An assessment of inter-actions between global initiatives and country health systems. Grupo de Colaboración sobre Sinergias Positivas / Organización Mundial de la Salud. The Lancet 2009; 373: 2137-69

⁷⁵ WHO (2009). An assessment of inter-actions between global initiatives and country health systems. Grupo de Colaboración sobre Sinergias Positivas / Organización Mundial de la Salud. The Lancet 2009; 373: 2137-69

⁷⁶ Frenk J. The Global Health System: Strengthening National Health Systems as the Next Step for Global Progress. PLoS Medicine 2010; 7(1): e1000089

PAHO and the countries of the Americas recognize RAVREDA and AMI as an effective example of the use of best practices for the control of malaria. Its collaborative work has been an important contribution to achieving the goals of reducing malaria in partner countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru and Suriname⁷⁷. This program is a partnership of 13 years of work, involving governments and institutions collaborating complementarily and synergistically to reduce the burden of malaria in the Amazon.

AMI and RAVREDA transform global, regional, and national malaria goals into realities that favorably impact communities and populations. It facilitated program alignment and harmonization in all levels of work and bridged gaps between policy and practice⁷⁸. RAVREDA is an effective mechanism to develop a technical cooperation agenda and South - South cooperation between countries of the Amazon region, cooperation agencies and specialized technical institutions⁷⁹. Networking has created an incentive for countries to observe the progress of others and has also allowed a joint prioritization of areas of work, cooperation between countries, and the unification of policies and strategies. In turn, the information generated by RAVREDA with support from AMI was used in the formulation of malaria proposals to the Global Fund to Fight HIV, TB and malaria. PAHO has an important coordinating role as AMI's and GF's actions are complementary.

The management model of AMI-RAVREDA is central to these achievements. A steering committee comprising representatives of partner organizations and countries meets twice yearly and defines project direction, coordination, and consensus on partnership related issues. An annual technical meeting is held in a different country each year, providing a forum where countries and partners present results of the previous year's activities. Technical discussions serve as the basis for successful programmatic decisions.

In RAVREDA, the creation and maintenance for several years of mechanisms to standardize procedures and share information has been relevant for surveillance-related issues. It allowed the comparison between countries' patterns of temporal and spatial behavior of resistance to drugs and insecticides or vectors⁸⁰. Networking has created an incentive for countries to observe the progress of others, and has also allowed a joint prioritization of areas of work, South - South cooperation, and unification of policies and strategies.

In this evaluation, the respondents highly value networking between countries and consider it AMI's biggest success. To evaluate the performance and achievements of RAVREDA, a survey was applied to members who participated in the XIII Annual Assessment Meeting AMI / RAVREDA held in Nicaragua in March 2014. The majority of respondents from 11 countries perceived RAVREDA as a space for new and innovative ideas, allowing mutual learning and strengthening of capacities. It has fostered reliable relationships that promote partnership between countries and it has made significant progress in controlling malaria. AMI is a USAID project that supports the strengthening of RAVREDA to carry out these functions (Figure 13).

⁷⁷ PAHO (2011). Estrategia y Plan de Acción sobre la Malaria. 51 Consejo Directivo, 63ª. Sesión del Comité Regional. Washington, D.C., EUA, del 26 al 30 de septiembre del 2011

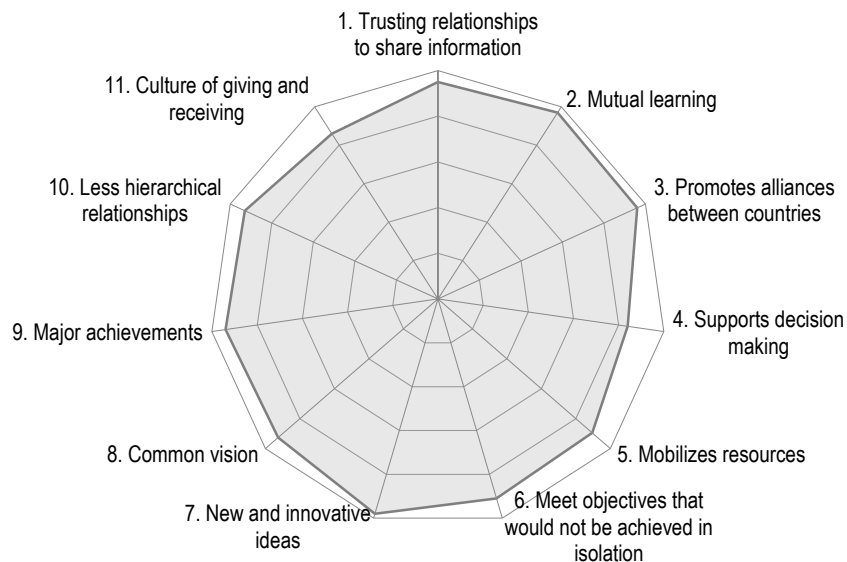
⁷⁸ Keith H. Carter, MD and Rainier P. Escalada, MD, MIPP. Communicable Disease Unit - Malaria, Pan-American Health Organization, 525 23rd Street, NW, Washington, DC 20037-2895, 202-9743532, escaladr@paho.org. Transcending politics and using evidence-based treatment policies and public health approaches in combating malaria: The Amazon Malaria Initiative (AMI) and the Amazon Network for the Surveillance of Anti-malarial Drug Resistance (RAVREDA) Partnership

⁷⁹ Organización Panamericana de la Salud. Gestión de Redes en la OPS/OMS Brasil: Conceptos, Prácticas y Lecciones Aprendidas. / Organización Panamericana de la Salud. – Brasilia, 2008. http://www.panalimentos.org/rilaa/documentos/Redes_es.pdf

⁸⁰ Organización Panamericana de la Salud. Gestión de Redes en la OPS/OMS Brasil: Conceptos, Prácticas y Lecciones Aprendidas. / Organización Panamericana de la Salud. – Brasilia, 2008. http://www.panalimentos.org/rilaa/documentos/Redes_es.pdf

More than half of respondents considered that the network can achieve goals that could be difficult to achieve in isolation due to its common vision, less hierarchical relationships with other organizations, independent work, and committed members.

Figure 13. RAVREDA characteristics in the opinion of the members who participated in the XIII Annual Meeting of AMI / RAVREDA in Nicaragua, March 2014



However, there is less agreement when it comes to member contribution in decision making and problem solving in each country, in their ability to mobilize new resources, and in having a direction that facilitates neutrally.

While it is true that respondents think that the regional action on malaria is important, there is no consensus on what that regional action should be. For some it is the standardization of protocols and procedures, for others it is the result of the sum of the parts. The documents reviewed and interviews conducted identified no particular strategy for malaria control at the borders with migrant populations.

There is a positive perception of the RAVREDA strategy to use knowledge and on the usefulness of the information produced. Most agree that there is an easy access to information, interactive and ongoing information, updated content, appropriate information for researchers, adequate information for control programs, and a timely response from experts. Fewer participants frequently use USAID AMI's website⁸¹, managed by Links Media. The website has information about AMI,

⁸¹ <http://www.usaidami.org/>

organizations and countries involved in both English and Spanish. It also has an extensive resource section (with its list of research links), but contains limited information in Spanish (Annex 8A).

An example of AMI's contribution in using evidence to make decisions in RAVREDA and for PAHO evaluations was conducted in Peru on RDT^{82 83}. These studies have shown that in some areas of South America and the Amazon region of Peru, PfHRP2-detecting RDTs have lower sensitivity or lesser ability to detect *P. falciparum* due to PfHRP2 gene deletions and because parasites infecting people in some areas of South America do not express HRP23, and in such populations, only tests in detecting pLDH in *P. falciparum* parasites will be effective in diagnosing falciparum malaria.

There is a favorable opinion of the AMI and PAHO facilitators of the network because the facilitators maintain updated information on the Web, update operating plans and progress reports on the network, perform periodic evaluations, effective meetings, arrangement and follow up commitments, and encourage the implementation of projects and collaboration (Annex 8B). Links Media believes that the USAID COTR has consistently empowered AMI partners to try new approaches and bring innovation. Partners found opportunities for shared collaboration, training, and capacity building that would strengthen the program, involved the entire team in the development process in an open and transparent manner. They also add that the COTR has consistently advocated for the inclusion of communication activities within the context of the project and has promoted the utilization of new and existing tools and communication channels.

Communication networks

Links Media has helped to improve the communication activities of AMI / RAVREDA, which is demonstrated in the reports and AMI website. Since 2011, progress was made in the communication and increased use of media to share information and keep partners informed on the progress and achievements AMI has made since 2011. Links Media systematized information, prepares reports and news on the progress of AMI, disseminates and publishes documents and creates social media profiles to moderate comments.

Annex 12 shows the responses of 38 participants from the XIII Annual Meeting of AMI / RAVREDA Evaluation in Nicaragua in regards to the number of communications made last year. The survey included three questions regarding communication between members of the network in the last year in order to observe the interaction in the exchange of technical information, news on malaria and logistical support and coordination as well as assistance requests. It displays two main actors: USAID and MSH because of their greater number of interactions with other actors (demonstrated by the size of the circle). Other actors are the PAHO regional offices and country offices. Another fluid interaction is seen between PAHO Brazil and the national malaria program. The majority of interactions are between the actors and USAID Peru (countries, PAHO offices, and partners) which demonstrates a high centrality in the interactions. It is important to highlight that this survey was not answered by all members of AMI / RAVREDA and there may be a recall bias, however it is a useful methodology to measure the activity and performance of the network. For example, if it is detected

⁸² Maltha J, Gamboa D, Bendezu J, Sanchez L, Cnops L, Gillet P, Jacobs J. Rapid Diagnostic Tests for Malaria Diagnosis in the Peruvian Amazon: Impact of pfhrp2 Gene Deletions and Cross-Reactions. PLOS ONE | www.plosone.org 1 August 2012 | Volume 7 | Issue 8 | e43094

⁸³ Gamboa D, Ho MF, Bendezu J, Torres K, Chiodini PL, Barnwell JW, Incardona S, Perkins M, Bell D, McCarthy J, Cheng Q. A large proportion of *P. falciparum* isolates in the Amazon region of Peru lack pfhrp2 and pfhrp3: implications for malaria rapid diagnostic tests. PLoS One. 2010 Jan 25;5(1):e8091. doi: 10.1371/journal.pone.0008091.

that there is little participation of some countries, it could be used to design strategies that promote their participation in the network.

In the same survey, the access to technical and research documents was requested. Respondents noted that access to research is limited for several reasons: a) most of the investigations are in English, which is a barrier to program officials of decentralized and local levels (It should be noted that PAHO makes the effort to translate locally summaries of the studies.); b) access to research is through PAHO email and very few have access to the AMI website; c) a dissemination of the studies is not made to the local level.

RAVREDA has its own page⁸⁴, hosted on the website of PAHO. It is where most of the information produced is uploaded, including meeting reports and presentations.

In addition, AMI has recently developed information networks through social media: An institutional Facebook page was created in June 2010, which is moderated by Links Media and has 525 “Likes.” An open Facebook group was created in October 2013, with the goal of improving two-way communication; it currently has 356 members. Twitter was created on June 25, 2010, with 952 tweets written and 545 followers. A LinkedIn group was created in November 2013 and has only 20 members. Finally, AMI has a public Flickr account where high-resolution images of the Initiative’s work are displayed.

RAVREDA is intended to have its own life and remain active when the USAID resources are not available⁸⁵. For this purpose AMI and PAHO have kept working lines aligned with the strategies and interventions that are internationally recommended for malaria. From the start the AMI project has maintained consistency with the strategies promoted by the WHO Global Malaria Program, trying to renew countries efforts already undertaken to guide the programs according to the elements of the Global Control Strategy.

F8: The USAID cooperation model that strengthens the PAHO regional cooperation is more efficient and sustainable due to being implemented with regular procedures and resources, however the operation of the RAVREDA network, regional action and cooperation of international experts require AMI funding

AMI has contributed to achievements in sustainable malaria control that were implemented following institutionalized procedures and using the counterpart resources of the countries and PAHO. PAHO's role is crucial for regional action and coordination of international technical cooperation, because PAHO leads the Strategy and Plan of Action for Malaria in the Americas, 2011-2015 and the countries recognize these roles as its legitimate functions.

The AMI management model was generally recognized by the respondents as effective and responsive in terms of the coordination through PAHO, the provision of technical assistance and the relevance of the thematic areas. Most respondents also thought they had some voice in AMI through their participation in RAVREDA and the development of country-specific plans. The model allows for participatory and continuous review based on evidence and lessons learned, relevance,

⁸⁴ English: http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1988&Itemid=2150&lang=en
Spanish:

http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1988&Itemid=2150&lang=es

⁸⁵ Organización Panamericana de la Salud. Gestión de Redes en la OPS/OMS Brasil: Conceptos, Prácticas y Lecciones Aprendidas. / Organización Panamericana de la Salud. – Brasília, 2008.

and effectiveness and sustainability of the strategies, methodologies and tools for malaria prevention and control. This flexibility allows for adjustments and changes in activities within the AMI project framework.

Several members of RAVREDA (Venezuela and Bolivia) are no longer eligible for USAID assistance which makes for a bit of a two-tiered participation in AMI threatening the logic and justification of the regional program as well as having potential implications for the well-being of the countries themselves. All information generated by AMI is in the public domain and should be available to all members of RAVREDA as well as the larger public health community. However, there were concerns expressed about AMI's information dissemination and the utility of the web page and these issues should be reexamined with a further strengthening of the information dissemination plan. Although many RAVREDA members have frequent email contact, the project should consider further strengthening specific virtual discussions and forums on hot issues using social media, e.g. closed/moderated discussion groups through Facebook and/or Google Groups. Links Media is contributing significantly in the systematization of AMI information, processing by newsletters, news, success stories, documentation of activities by country and broadcasting evidence and technical reports produced by partners and countries involved in AMI (<http://www.usaidami.org/>).

There are not a lot of examples of similar regional technical assistance and strengthening models. Most regional initiatives, such as the USAID/Central America HIV/AIDS program, managed out of the Mission in Guatemala, are largely implementation programs. It does have a policy dialogue component with specific targets and multi-sector participation which could be of interest to AMI (see www.pasca.org) and also strengthens the capacity for HIV care through the Capacity Project. The same is largely true of the USAID English-speaking Caribbean HIV program. Likewise, the PAMAFRO Global Fund project on the Andean countries frontier areas, was an implementation project which received technical inputs and guidance from RAVREDA and AMI (and before from the USAID/Vigia project). Although, PAMAFRO demonstrated the need to work jointly in border areas while the project funds lasted, the experience showed that it was not sustainable, and could not institutionalize a multi country program, due to the lack of an entity to exercise governance for these countries, leaving these interventions in the hands of the project staff and local border services. A recent Lower Mekong initiative (LMI) in Southeast Asia had a PMI/USAID-sponsored Control and Prevention of Malaria (CAP-M) component that attempted to address cross boundary issues; there could be some relevant lessons learned from that experience.

As long as AMI continues to employ a substantial amount of USAID partner technical assistance, the current model of managing it out of USAID/Lima appears to be efficient and an effective way for USAID to invest in malaria control in the region. It would not be necessary to have a USAID or AMI presence in each country (such as is the current case of Suriname, Panama and Belize). A question still to be determined is the transition process to more of a south-south technical cooperation model. However, while that process is going on and there is a continued need for highly specialized TA, USAID/Washington could still access the same technical partners through their existing contracting mechanisms.

The non-eligibility of Venezuela and Bolivia to receive direct support from AMI is a concern for the epidemiological issue that will certainly affect the Region and especially neighboring countries. The role of PAHO is critical in terms of the implementation and completion of health commitments, because the Ministers of Health of these countries are part of PAHO's Directing Council. In the 1980s PAHO managed a USAID Central American regional malaria project during the period when the Sandinista government in Nicaragua was not eligible for USAID support. PAHO was able to assure full Nicaraguan participation in the project with funds from other sources, thereby preserving

the regional integrity of the initiative. RAVREDA, with support from PAHO, needs to begin a strategy for leveraging funds from other sources for not only these countries, but as well for a transition period when USAID financial assistance for the region is likely to further wind down. There are also examples of regional institutions, e.g. The Institute of Nutrition of Central America and Panama (INCAP) that are partially funded through member countries dues.

The Global Fund has other regional malaria projects, such as in the Mekong Delta, but its projects are not known for research and innovation and its current funding model does not permit, as far as we know, donors to earmark contributions for specific projects. However, they would probably entertain a regional proposal with RAVREDA as the CCM and PAHO or a USAID partner agency as the Principal Recipient. The Global fund has recently authorized \$10 million for a ten country regional initiative spanning Mesoamerica and Hispaniola (EMMIE) to accelerate actions to reorient national programs towards malaria elimination. The countries (Belize, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Nicaragua and Panama) have set a regional goal to eliminate malaria by 2020. RAVREDA and AMI will need to determine how they will collaborate with this initiative.

The development of South-South cooperation promoted by AMI has a double benefit, first, the countries which improve their practices for accreditation significantly increase performance; secondly, cooperation with other countries reduces support costs and has the advantage of applying lessons learned from neighboring countries.

However, international aid with technical and financial resources remains critical for: research; technical assistance; designing new strategies, methodologies and tools; coordinating the work of aid workers and countries; and regional action. This situation is not only due to the lack of economic resources, but mainly because of the criteria for allocation of existing country resources primarily for the operation of control programs in the country. Furthermore, there are many regulatory restrictions in recruiting or hiring of international experts, accessing training outside the country, and supply constraints of national experts.

A test of sustainability will be the national implementation of strategies, policies, methodologies, tools and recommendations that were promoted by AMI with technical cooperation and following the procedures and resources of member countries. Resources for malaria control have increased dramatically over the last four years (Figure 14). There is a relationship between the reduction of malaria morbidity and mortality and increased government investment in the NMCP.

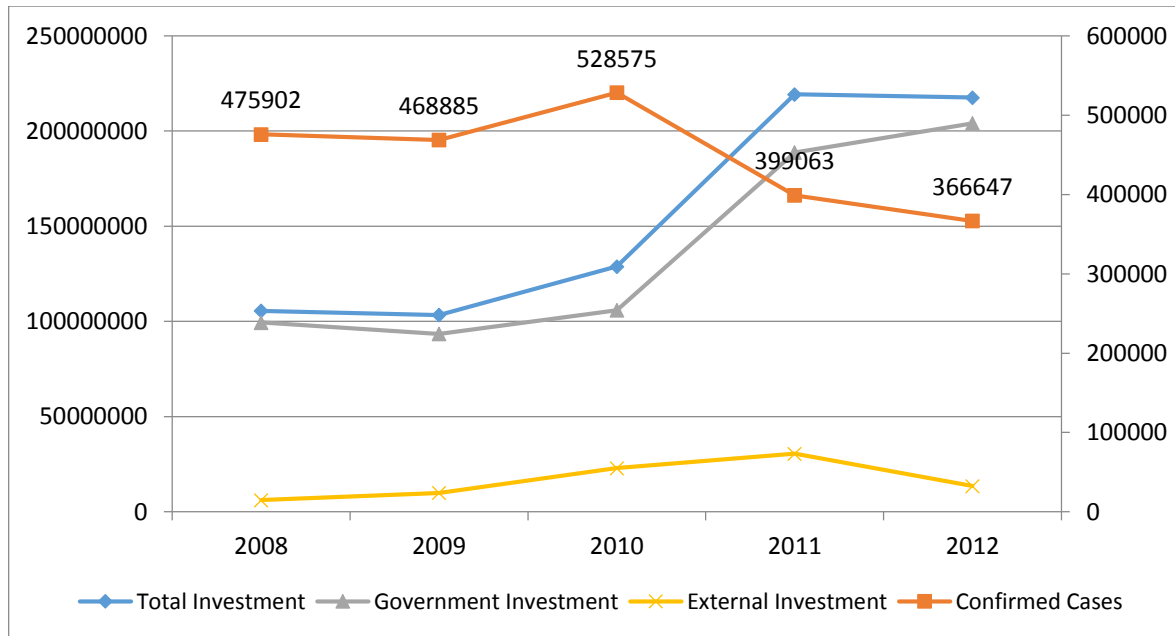
Consequently, the AMI decision to provide technical assistance to strengthen the work of PAHO and the countries is appropriate, first because the AMI strategy was to promote evidence-based policies to increase the interest of decision makers and develop commitments to implement the Strategy and Plan of Action for Malaria in the Americas. This strategy has resulted in the allocation of greater resources by countries to combat malaria. Secondly, once they have more resources, it is necessary to help countries to invest in cost-effective strategies to increase coverage of these interventions, such as diagnosis and effective treatments with quality in a timely manner.

Annex 9 shows the investment of governments from 2008 to 2012, per item and per donor, appreciate that Global Fund is a donor with great contribution, representing in some cases 10-20% of government investment and other countries such as Honduras, Nicaragua and Suriname it is a very important contribution. The financial contribution of AMI is minimal compared to other sources of financing; however the use of resources in specialized technical assistance has had

significant effects on the implementation of policies, procedures, methodologies and tools for the prevention and control of malaria.

Now the challenge is funding prevention, control, and elimination activities continuously to ensure that malaria is not reintroduced presents special challenges, particularly in low-income countries that may depend on external financial support. In the absence of the presence of malaria and other pressing health priorities, this could be difficult. Fatigue among key stakeholders, from local communities and implementers, to political and national donors, is one of the biggest threats to sustaining a program of malaria elimination.⁸⁶

Figure 14. Relationship between the country and external investments with the number of confirmed cases of Malaria in AMI countries.



Source: World Malaria Report 2013

Countries will have to be careful not to cut spending too fast and international donors could commit to continue funding if and when the transmission ceases to occur or possibly make international funding contingent upon country contributions. This is only possible to the extent that PAHO has resources to disseminate the evidence, and the countries generate commitment, designing policies that protect the funding of actions against malaria, secure high-level political support, demonstrate greater benefits for the health system investment in malaria elimination, creating and maintaining community participation and public awareness, focus on vulnerable populations, set expectations, promotes surveillance, and develop sound financial agreements. Advocacy campaigns with targeted and sustained communications tools will be essential⁸⁷.

⁸⁶ Feachem, R.G.A. and The Malaria Elimination Group (2009). Shrinking the Malaria Map: A Guide on Malaria Elimination for Policy Makers. San Francisco: The Global Health Group, Global Health Sciences, University of California, San Francisco

⁸⁷ Feachem, R.G.A. and The Malaria Elimination Group (2009). Shrinking the Malaria Map: A Guide on Malaria Elimination for Policy Makers. San Francisco: The Global Health Group, Global Health Sciences, University of California, San Francisco

F9: AMI does not manage for results and requires improvements in planning and monitoring

AMI has a results framework that establishes the lines of work and implements a plan of activities that do not set goals or performance indicators to measure the direct contribution of AMI, nor systematic reports documenting program progress. This is because AMI has a flexible design and participatory planning of technical cooperation for countries to implement the changes and improvements of policies and programs for prevention and control of malaria.

According to the interviewees, AMI planning activities take a long time and depend on the interest of officials of each country and the ability to involve the PAHO/WHO focal point.

Countries develop annual work plans in coordination with the AMI focal point in the local PAHO office. Planning for each country does not follow a uniform format and does *not* include indicators and targets (Annex 10A). There is a template in Excel with no instructions and each country makes special adaptations, in some cases requesting funding for activities that cannot be financed by AMI.

Planning takes into account several elements: national needs and priorities, priorities established by AMI Steering Committee, the budget allocated by USAID and the supply of technical assistance from partners. Proposals for each country are sent to PAHO Regional office to be reviewed. Then the PAHO Regional office sends the work plans to USAID and partners for review, and then PAHO consolidates all the comments and sent back to countries for corresponding modifications, once PAHO received the modified versions, those are sent to USAID for approval. During this last step, plans are revised or discarded and activities added. The reviews are conducted by email and the revised plans are approved and returned to each country. According to the respondents the duration of the approval process is very long (over 4 months) and reduces the time left to develop activities.

Interviewees mentioned ignorance of the criteria for acceptance or rejection of USAID activities since these changes do not come with explanations. Neither are the criteria for allocation of budget amounts known. Generally the activities not approved in the AMI work plan often remain unimplemented due to lack of national funding.

AMI does not have a Performance Monitoring Plan or operationalized performance indicators, or a system that allows for the collection of data on a regular basis to monitor work plans. AMI is required to develop its theory of change, outcome indicators and results with goals and technical specifications for each indicator according to USAID policy⁸⁸. It is necessary to document the benefit of the program, both for accountability and to request more resources if needed. The reports do not show progress against indicators (Annex 10B).

In the USAID and PAHO contract indicators for each objective are identified; however, they are not precise and measurable in order to allow for the observation of the achievement of objectives. The formulation of indicators in some cases contain three or more qualities purport to measure, for example: "Proportion of countries that adopt and implement strategies to ensure early access, malaria diagnosis and treatment quality, considering different epidemiological situations".

⁸⁸ <http://usaidprojectstarter.org/content/pmp-performance-management-plan>

The PAHO focal points of AMI in each country are the people who manage AMI's activities in close coordination with the National Malaria Programs. They constitute a dynamic element and coordinator of the activities undertaken by USAID AMI partners in the countries. The time devoted to the activities of AMI is shared with other malaria activities not funded by AMI and other vector-borne diseases.

USAID partners have their own plans of agreed upon activities with countries, although they sometimes develop activities without the knowledge of PAHO and the National Malaria Programs.

The scope of the work plans of the countries is at the national level, there are no activities planned for multilateral activities. Work plans of the partners respond to a purely national perspective.

AMI receives funding from the Presidential Malaria Initiative and is not fully aligned with their lines of action. PMI could support technical cooperation for the development of operational research and solutions to expand diagnostic services and treatment in areas with lack of services as it has a target to strengthen health systems and capacities of the countries that guarantee the sustainability actions. Findings are empirical facts based on data collected during the evaluation and should not rely only on opinion, even of experts.

CONCLUSIONS

The findings of the intermediate performance evaluation of Amazon Malaria Initiative (AMI) shows that AMI since 2001, has contributed in reducing cases of malaria in the Amazon region and since 2008 in Central America. AMI with technical support from USP, MSH, Links Media, CDC, and with the oversight of PAHO have implemented effective best practices in the surveillance of effectiveness and resistance to antimalarials, access to quality diagnostics, antimalarial availability and use, the quality of drugs, stratification and analysis of information, entomology, monitoring of insecticide resistance and the use of mosquito nets with insecticide. The main achievements of AMI are monitoring the effectiveness and resistance to antimalarials, drug management and improving the quality of diagnosis and treatment. The countries have institutionalized the actions promoted by AMI.

The current model of managing it out of USAID/Lima appears to be efficient and an effective way for USAID to invest in malaria control in the region. The AMI decision to provide technical assistance to strengthen the work of PAHO and the countries strengthens the regional governance of PAHO and the governance of the countries. Consequently, the interventions performed under AMI are sustainable because they have been implemented with regular procedures and resources of member countries and PAHO.

The international aid of technical and financial resources remains critical for research, technical assistance, designing new strategies, methodologies and tools, coordinating the work of aid workers and countries, and regional action.

RAVREDA, network of NMCP country officials and international cooperation, is the main mechanism for AMI management and is valued as a good practice for the articulation of international technical cooperation between partners and countries, and has helped to reduce malaria in the Amazon Region. This has allowed for an implementation with a regional approach, joint purchases and donations of antimalarials, and share evidences, strategies, methodologies and tools, South-South cooperation, and expand good practices to improve the management of malaria control.

The transmission of malaria in the Americas is located mainly in a small number of localities and many of these areas are characterized by difficult geographical access, with very limited access to health services, migrant populations, indigenous people living in situations of social exclusion and poverty. The control and elimination of malaria in these areas requires community-based actions and specialized technical assistance. However, the document review, interviews and survey results show that AMI is currently supporting these actions in a lesser extent.

Although the risk of malaria transmission persists, due to the reduction of malaria cases in several Latin American countries, it does not remain a priority and could reduce the allocation of resources for prevention and control of malaria. This is more probable for the decentralization of public health functions because the sub-national authorities prefer to use resources on other priorities or when outbreaks occur. There are also difficulties at the central level to exercise governance and implement control mechanisms. However, AMI does not have a line of cooperation to provide technical assistance to support program management of malaria control in decentralized scenarios.

AMI does not have a change theory and does not manage for results or indicators that measure their performance and effectiveness and AMI planning process needs improvement.

RECOMMENDATIONS

RI: AMI must align itself with PAHO Strategy and Plan of Action for Malaria in the Americas 2016-2020

Arguments:

- The findings 1, 5, 7 and 8 of this evaluation contend that AMI strengthens regional governance of countries, guidance is required and multilateral action, and USAID cooperation model is more efficient and sustainable with technical support and stewardship of PAHO and implementation through RAVREDA. AMI supported implementation of common strategies and joint technical cooperation, and because the interventions performed under AMI are sustainable, they have been implemented with regular procedures and resources of member countries and PAHO.
- The findings 2, 3, 4 and 8 show that AMI's strategy, methodologies, tools and processes are operating with tangible achievements at the regional level, which strengthens regional and national governance for malaria control.
- The region has a number of initiatives and projects funded by various cooperating agencies where PAHO's malaria control programs are directly involved. The Global fund has recently authorized resources to develop strategies away from control and towards pre-elimination and elimination of malaria in Mesoamerica and Hispaniola (EMMIE).
- There is evidence that shows that the concerted organized actions of the countries and

collaborating institutions contributed to the reduction of malaria in the region^{89 90 91 92 93}.

- The Strategy and Plan of Action for Malaria 2011-2015 (approved by the Health Ministries of the Americas in the 51st Directing Council), which establishes the regional priorities, expected results, and main interventions for the prevention and control of malaria in the Americas.
- AMI receives funding from PMI / USAID, however there is no explicit alignment with the objectives of PMI⁹⁴, this fact would have limited the increased allocation of resources to AMI.

We recommend the following actions:

- Align AMI planning with Strategy and Plan of Action for Malaria 2016-2020. This alignment should consider:
 - a. AMI could allocate resources to PAHO for the design of the Strategy and Plan of Action for Malaria 2016-2020.
 - b. AMI could promote the institutionalization of strategies, methodologies and tools in the Strategy and Plan of Action for Malaria 2016-2020, such as: i) the monitoring of antimalarial drug resistance in sentinel sites, in vitro and molecular surveillance monitoring; ii) efficacy studies of antimalarial drugs, iii) studies of adherence to antimalarials; iv) EQAP of microscopic diagnosis of malaria, v) supply management and quality assurance of medicines and supplies for diagnosis and treatment of malaria, vi) ISO 17025 accreditation of laboratories for quality control of drugs; vii) Three level approach of quality assurance of medicines and use of minilabs, viii) supervision of the supply and storage of medicines and supplies for malaria; ix) Regional Monitoring of Antimalarial Drug Availability; x) Managing supplies of antimalarials in low incidence areas; xi) joint purchase of antimalarials; xii) monitoring of insecticide resistance.

⁸⁹ Guía para la Reorientación de los Programas de Control de la Malaria con Miras a la Eliminación. WDC: Pan-American Health Organization, Regional Malaria Program Prevention and Control of Communicable Diseases. Health Surveillance and Disease Prevention and Control. HSD/CD/M/002-11 ISBN: 978-92-75-33041-8

⁹⁰ African Union (2007). African Union Launch of the Africa Malaria Elimination Campaign: "Fight Malaria: Africa Goes from Control to Elimination by 2010." Johannesburg, Sudáfrica, Tercera Sesión de la Conferencia AU de los Ministros de Salud, 9-13 Abril 2007.

⁹¹ Southern African Development Community (2007). SADC Malaria Strategic Plan 2007-2015. Gaborone, Botswana: SADC.

⁹² WHO (2009). An assessment of inter-actions between global initiatives and country health systems. Grupo de Colaboración sobre Sinergias Positivas / Organización Mundial de la Salud. The Lancet 2009; 373: 2137-69

⁹³ Global Program Funds at Country Level: What have we learned? The Global Programs and Partnership Group -Concessional Finance and Global Partnerships Vice Presidency -The World Bank, 2008.

⁹⁴ As part of the Global Health Initiative (GHI) Malaria Strategy United States Government (USG) for 2009-2014 proposes to expand efforts to control malaria supported by the U.S. government targeting approach:

- i. Achieving impact across Africa, halving the burden of malaria (morbidity and mortality) in 70 percent of the population at risk in sub-Saharan Africa (450 million), eliminating malaria as a public health problem and promoting economic growth and development throughout the region.
- ii. Limiting the spread of resistance to multiple antimalarials in Southeast Asia and the Americas.
- iii. Increased emphasis on strategic integration of prevention and treatment of malaria to maternal and child health, HIV / AIDS, neglected tropical diseases, and tuberculosis programs and multilateral collaboration to achieve the objectives internationally accepted.
- iv. Intensify current efforts to strengthen health systems and build the capacity of the labor force of the host country to ensure sustainability.
- v. To assist host countries to review and update their Malaria Control strategies and plans to reflect the decrease in the burden of malaria, and linking programming resources USG malaria control strategies to those recipient countries.

- c. Because AMI is currently involved in Central America and if it becomes a technical cooperation project to support the implementation of the Strategy and Plan of Action for Malaria in Americas, it is recommended that AMI changes its name and scope to a strategy of technical cooperation to Strengthen regional and national governance in the fight against Malaria (Example: America's Malaria Initiative-AMIplus).
- d. Before 2016, AMI should perform a feasibility and constraints analysis to determine which strategies, methodologies and tools developed by AMI still require the support of USAID, and what actions should AMI perform to make the program sustainable in the countries where they were implemented and the expansion of their lines of work in other countries in the Americas. Also, AMI should schedule technical assistance activities to overcome the restrictions of the health systems and the malarias areas that could limit the sustainability of their lines of work.
- e. Before 2016, AMI must identify new strategies, innovative interventions, tools, technical guides, designs and policies which are needed to eliminate malaria, strengthen malaria control programs in decentralized health systems, prevention program management and control of malaria in border areas, people living in areas of difficult geographic access, with very limited access to health services and migrant and indigenous populations. Also, AMI must identify potential new partners to provide technical assistance in these new lines of work.
- f. Having identified the necessary interventions, AMI should develop an AMI results framework, with indicators and targets to determine their specific contribution in the theory of change and the goals of the Strategy and Plan of Action for malaria in the Americas 2016 to 2020.
- g. Align AMI with PMI for allocating more resources to AMI, because the Strategy and Plan of Action for Malaria in the Americas has common goals with PMI, such as: "Intensify current efforts to strengthen health systems and strengthen the ability of the labor force of the host country to ensure sustainability; help host countries to review and update their Malaria Control strategies and plans to reflect the decrease in the burden of malaria, and linking programming resources USG malaria control strategies to those recipient countries."
- h. AMI / USAID and PAHO should develop a financial and technical proposal for the 2016-2020 period to consolidate the achievements of the projects and incorporate the new lines of work, strategies, methodologies and instruments. This plan should include a transition process towards more utilization of south-south cooperation and less dependence upon external TA which implies more strengthening of institutions and human resources for health systems including strengthening of training programs (in-service and pre-service). They must also include indicators for measuring and monitoring the transition. Likewise, they must maintain resources for activities that cannot be funded from regular PAHO or country resources, such as: international technical assistance, joint purchasing of malaria supplies and medicines, South-South cooperation to transfer the experiences from the Amazon region to Central America, research, pilot program development, RAVREDA meetings, design strategies, policies, methodologies, and management of evidence.

R2: RAVREDA should be institutionalized as a part of PAHO

Arguments:

- The F7 finding of this evaluation indicate that RAVREDA is a network for learning, sharing experiences, strengthening capacity, promotes partnership between countries and allows joint international cooperation, and has had significant achievements in controlling malaria.
- PNCM Network, now known as RAVREDA can further contribute to the control of malaria in the Region of the Americas if the functions are expanded and institutionalized in PAHO to explicitly implement the Strategy and Plan of Action for Malaria in the Americas.
- Currently, the network is not the means to implement the Strategy and Action Plan for Malaria in the Americas. The network is not a binding space, nor does it follow an explicit procedure or agreements in order to prioritize actions to implement malaria control at the regional level. RAVREDA is not considered by respondents as a space to make decisions or solve problems of malaria control program management.
- There is a resolution of the World Health Assembly in May 2005 by the World Health Organization that agrees that developing country actions "to establish mechanisms for knowledge transfer in support of the health care delivery systems, evidence-based public health, and evidence-based policies related to health." In response to this call, the World Health Organization (WHO) launched the Evidence-Informed Policy (EVIPNet) networks in 2005 (http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1476&Itemid=3650&lang=en). RAVREDA is a good example on how to implement this resolution and be strengthened by the experience of EVIPNet.

Following recommendations:

- Institutionalize network of Malaria Control Programs, from the experience of RAVREDA, in PAHO as an evidence management network, expanding access to more professionals and managers interested in malaria control and the use of information technology to implement the Strategy and Plan of Action for Malaria in the Americas, coordinate international technical and South-South cooperation and increased use of evidence. AMI/USAID should fund the institutionalization of this network during the 2016-2020 period. To institutionalize some actions are recommended:
 - a) Institutionalize a Latin American Network of experts, expert agencies and national programs of malaria control as a mechanism to implement the Strategy and Plan of Action for Malaria in the Americas (SPAMA). Consequently, in the SPAMA, it should be noted that the annual planning, monitoring the progress of SPAMA, and situational analysis of malaria and malaria control programs will take place in this network once or twice a year.
 - b) Implement management activities of the evidence in this network that includes connection with EvipNet of WHO / PAHO, develop proposals to receive further resources from the countries and cooperation, translate the evidence developed by academics and members of AMI into clear, timely and viable means of communication tools and techniques for managers and health personnel, and develop policy studies, technical, economic and social viability of the recommendations arising from the evidence. That is, how to implement the recommendations, what policy and institutional arrangements are needed, who should

implement, how much will its implementation cost, which conditions are necessary for its implementation and what aspects could prevent what is being implemented.

- c) Implement procedures using evidence such as improvement plans in the countries and technical assistance plans from PAHO, AMI partners and South-South cooperation. These include the development of methodologies for setting targets of diagnoses coverage, appropriate treatment of malaria, based on cost studies, economic evaluations of strategies to increase coverage in remote areas or with limited services, to overcome cost constraints, methodology and tools to budget to coverage increase.
- d) Implement procedures for monitoring, measurement, analysis and evaluation of the effect of the use of evidence in the malaria control programs in the countries and in the region of the Americas. Including organizing and systematizing the information produced by AMI (policies, standards, protocols, guidelines, research findings).
- e) Expand the resources of information technology to increase the use of evidence in network applications and virtual education. Currently, RAVREDA communication is via personal email, and could also be done by an electronic list of interest with an administrator who promotes participation in discussion forums or comments on new evidence or topics of interest. AMI recently launched the use of Facebook and Twitter, and has a Web page with important information. We recommend setting the purpose and target audience of these social networks and websites, and monitor their use, with page view counters. In turn, it is important to monitor the network in terms of participation of its members and partners to encourage more active and homogeneous participation. Post an option on the website to subscribe to the network. Keep AMI Web site updated and products in the three languages. Develop products for the broadcast and dissemination of research results.
- f) Create a portal on the PAHO website that integrates information from the AMI website with the RAVREDA web page and with links to information from the AMI website and other websites of interest. In order to make this form of communication sustainable, resources will need to be allocated in order to fund the administration of this website.
- g) Enlarge the network, not only to officers and partners involved in AMI, but with different categories of members. The network could benefit from the input of experts, academics, former malaria control officials and health personnel who are in countries where there is malaria.
- h) The annual AMI meetings, workshops and technical events should be placed online so that more of those who are interested can access these events. Should also increase their use of multimedia material for virtual training for the RAVREDA members.
- i) Strengthen use of IT for information dissemination including video and teleconferences, interactive web-based forums on specific topics, and distance training. Develop distance training modules that could add up to a diploma-level course in malaria control and elimination.
- j) Measure the performance of the network with the following indicators: number of communications made last year between the AMI partners and members of RAVREDA by type of communication (technical information / administrative information or coordination) which can be plotted using software for social networks such VisuaLyzer ® or Pajek ®. In

Annex 12 we show an example of its use with the responses of the participants of the XIII Annual Meeting of AMI / RAVREDA.

R3: AMI should continue to support the strengthening of regional action for the control and elimination of malaria and develop strategies with PAHO to commit all countries to maintain the prevention and control activities on a sustained basis, including countries with low transmission or in elimination phase.

Arguments:

- The F4 and F6 findings of this evaluation show that the continuous reduction of malaria cases has generated a focused scenario; and that it affects marginalized populations living in remote border areas, extractive and mining activities, and indigenous populations. There is also a weakness in the implementation of policies aimed at these transmission risk scenarios, due to the limited availability of human resources, financial resources, and equipment and supplies; and high staff turnover. In addition, it has been verified that there is no geo-referenced public access of the malaria situation in these areas. An information system is essential for the programming and analysis of eco-epidemiological risk factors.
- The prevention, control and elimination of malaria in a focalized scenario requires a stratified surveillance system, integrated vector management, development of operational research, provide interventions in the workplace, community-based actions and develop strategies to expand health services. The control and elimination in these areas is not possible without the participation and involvement of affected communities⁹⁵.
- The objectives of PAHO's Strategy and Plan of Action for Malaria in the Americas are: to further improve information systems; promote the surveillance data of malaria that are disaggregated by gender, ethnicity and other variables; and strengthen and improve the system of exchange of epidemiological information at all levels: regional, between countries with common borders and within the same country.
- Currently AMI is supporting to a lesser extent the areas of vector control and epidemiological surveillance, and there is no record of technical cooperation to expand health services with the community.
- The F5 Finding shows that the elimination of malaria in the Americas will be impossible without strong and effective collaboration of all countries, especially in border areas.
- AMI and RAVREDA could be running the risk of becoming victims of their own success. Malaria incidence and mortality in the Americas has been reduced to the point where the problem pales in comparison to some other regions. However, in spite of the obvious fact that there is a lot of bidirectional traffic between the American sub regions, the climate change issue is making the United States a more propitious environment for the introduction, or re-introduction, of vector-borne diseases such as has happened with West Nile virus and dengue. Furthermore, history is full of examples of diseases that had been "controlled", but then came back with a vengeance after resources were diverted to other programs.

⁹⁵ Feachem, R.G.A. and The Malaria Elimination Group (2009). Shrinking the Malaria Map: A Guide on Malaria Elimination for Policy Makers. San Francisco: The Global Health Group, Global Health Sciences, University of California, San Francisco

- Although the risk of malaria transmission persists, the reduction of malaria cases in several Latin American countries does not remain a priority and therefore could reduce the allocation of resources for prevention and control of malaria. For example, this assessment has identified that in the countries of the Amazon region there has been a decrease in the government budget between 2008 and 2012 (-4.70%) for actions to combat malaria.

We recommend the following actions:

- a) Develop a technical assistance plan to implement the recommendations of the WHO and PAHO and develop innovative interventions for malaria control in areas with limited access to health services, difficult geographical access, migrants, border areas, indigenous populations, and groups involved in mining and quarrying. The program should consider developing Geographical Information Systems (GIS) for these key cross-border areas.
- b) The technical assistance plan can include pilots and operational research validating strategies, methodologies, innovative solutions and procedures to expand services and provide interventions in the workplace. The technical assistance should have a roadmap for action in these areas (eg study of knowledge, attitudes and practices with a methodological guide, constraints analysis using standardized instruments, solutions development, design evaluation and operational research to test the solution, system monitoring of the solution's implementation, the solution settings and considerations for technical, social and economic viability of the expansion of the solution, and a plan for transfer and scale).
- c) Assess the relevance and financial viability of involving other PAHO offices and other partners to develop technical cooperation for the development of these solutions.
- d) Select pilots and operational research to be implemented each year and estimate the necessary budget that can be financed by AMI.
- e) AMI must intensify efforts to implement the Strategy for Decision Making under the Integrated Vector Management for Malaria developed by PAHO⁹⁶.
- f) AMI should support evidence-based strategies to ensure that all countries have a system of active and continuous surveillance and health system resources for diagnosis and treatment of malaria and vector control.
- g) AMI and PAHO need to develop an explicit and documented strategy for technical cooperation with regional focus on border areas, particularly on multilateral agreements to overcome bureaucratic barriers that will allow coordinated exchange of services, resources, inputs, outputs and monitoring. This action is only possible through the help of PAHO and its international cooperation procedures along with its ability to generate binding agreements with member countries.

⁹⁶ WHO. 2004. Global strategic framework for integrated vector management. Geneva, World Health Organization, 2004 (WHO/CDS/CPE/PVC/2004.10)

- h) Consider using GPS, cell phones and other indicators in the surveillance of malaria, such as standardized API⁹⁷.
- i) Conduct surveys of parasitemia for the proportion of asymptomatic patients with very low parasitemia in priority malaria areas.
- j) Boosting a new component of Community Participation in Malaria Control based on the recommendations of WHO (2012)⁹⁸ to ensure the ability of diagnosing malaria at all levels of the health system (including community level) and the availability of a health advocacy group strong enough to take control of diseases, including malaria activities is specific, proper supply chain (minimum shortages); supervision of health workers in the community.
- k) It is recommended to incorporate countries like Haiti, Dominican Republic, Venezuela, Ecuador, Bolivia and Mexico within RAVREDA.

R4: It is imperative to strengthen the AMI technical cooperation activities on health systems

Arguments:

- The finding 6 of this evaluation shows that decentralization and reform processes affect governance and program resources for malaria control, and this in turn seriously affects the expansion, implementation and sustainability of best practices developed by AMI in the prevention, diagnosis, treatment and surveillance of malaria. This effect is greater in more remote areas with limited access to services and fewer resources.
- Technical assistance is necessary for the improvement of governance and management programs for malaria control in decentralized systems, particularly if malaria is focused and in remote areas, to expand best practices for prevention and control, and service delivery of diagnosis and treatment, in order to maintain the reduction of malaria morbidity and mortality moving towards elimination and prevention of reintroduction. In these cases, a certain degree of verticality may be called for despite the trend towards decentralization and horizontal integration of services.
- The Strategy and Plan of Action for Malaria in the Americas 2011-2015 has the component: Health Systems Strengthening to optimize efforts towards strengthening health systems, strategic planning, operational research, and building capacities of nations to relevantly and adequately address their respective malaria challenges.
- Evaluations have shown that effective interventions to address health priorities do not reach all

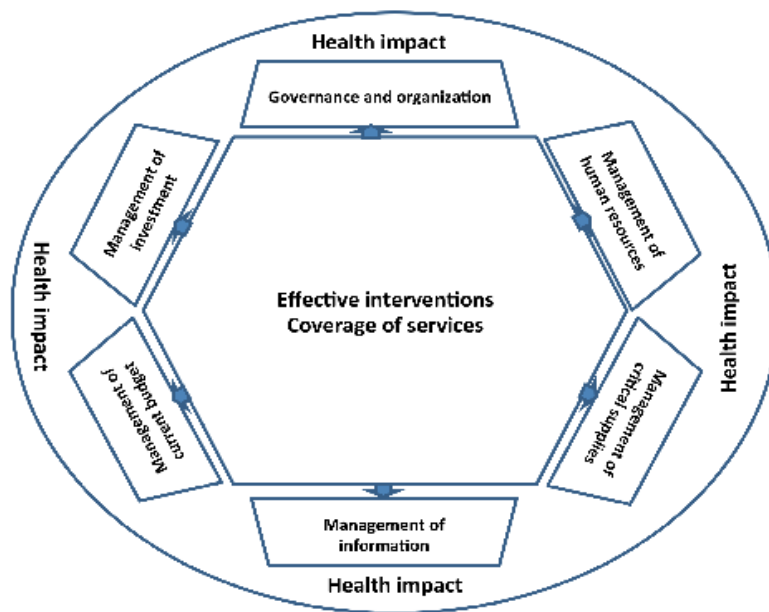
⁹⁷ Roberts DR, Laughlin LL, Hsueh P, Legters LJ. DDT, global strategies, and a malaria control crisis in South America. *Emerg Infect Dis.* 1997 Jul-Sep; 3(3): 295–302.

⁹⁸ WHO (2012). Community-based reduction of malaria transmission. World Health Organization

those in need, especially the poor^{99 100 101}. Victora and Co. (2004)¹⁰² concluded that this situation is partly explained by the limitations and deficiencies in health systems and that have received little attention to intersectoral implementation of these interventions, usually financial and technical resources are insufficient, and because the supply of services is almost nonexistent in the poorest areas.

- The decentralized management requires knowing what is the restriction and the extent to which this restriction may be eliminated or reduced¹⁰³ (Figure 15). The restrictions of a local and national government to implement an effective intervention or expand the coverage of services may be grouped into: i) management and organization; ii) management of human resources; iii) management of critical supplies; iv) management of information; v) management of current budget; vi) management of investment. The knowledge of the limitations faced by the local authorities, subnational or national, is essential to estimate the resources necessary to expand the coverage of effective interventions and strategic decision making about the forms of delivery, sequence of actions and level of expansion of the services. The decentralized management will require the strengthening of health care systems and the provision of more resources to the health sector, taking into account the restrictions typical of each territory.

Figure 15. Decentralized management model to implement effective interventions and expand coverage of services for health priorities



⁹⁹Bryce J, el Arifeen S, Pariyo G, et al, and the Multi-Country Evaluation of IMCI Study Group. Reducing child mortality: can public health deliver? *Lancet* 2003; 362: 159–64.

¹⁰⁰Claeson M, Gillespie D, Mshinda H, et al, The Bellagio Study Group on Child Survival. Knowledge into action for child survival. *Lancet* 2003; 362: 323–27.

¹⁰¹Victora CG, Wagstaff A, Schellenberg JA, Gwatkin D, Claeson M, Habicht JP. Applying an equity lens to child health and mortality: more of the same is not enough. *Lancet* 2003; 362: 233–41.

¹⁰²Victora C, Hanson K, Bryce J, Vaughan P. Achieving universal coverage with health interventions. *The Lancet* 2004; 364:1541-1548

¹⁰³Velasquez A. (2011). Report on the model of decentralized management for selected national health priorities, including activities performed and recommendations for their implementation. Lima: USAID | PERU | Políticas en Salud Project, financed by the United States Agency for International Development (USAID) under contract No. GHS-I-10-07-00003-00.

We recommend the following actions:

- a) Technical assistance should be directed to review and define, where appropriate, roles and functions, the control of information, control of administrative systems and finally the financing and organization of health services to establish critical processes and responsibility for its implementation at national level and subnational levels.
- b) Develop a methodology for technical assistance to help countries improve the management of control programs in decentralized systems to consider:
 - An analysis of restrictions (bottleneck) and the degree to which the restriction can be eliminated or reduced. This knowledge is critical for estimating the resources needed to expand the coverage of diagnosis and treatment and to make strategic decisions about the delivery methods, the sequence of actions and the level of service expansion.
 - Design and implementation of strategies for the recruitment, training and the retention of the appropriate staff members assigned to combat malaria in the health systems of the countries and within PAHO / WHO.
 - Identification of countries in position to provide technical assistance for the decentralized management of programs of malaria control for South-South cooperation
 - Design or formulate policies, technical standards and methodological tools for intersectoral and intergovernmental coordination in the planning and allocation of resources to combat malaria.
 - Design strategies to increase and ensure the availability and accessibility of health infrastructure to the most affected populations and strategies to provide services to highly endemic but remote areas where the health services don't reach. Explore the use of cellular SMS text methodology to improve the reporting of data and continuous dissemination of information from and to remote areas.
 - Development of strategies to strengthen the capacity of national and sub-national programs in the areas relating to the management, logistics, financing and resource mobilization.
 - Generate evidence in regards to best practices, best approaches, operating investigations and studies regarding bottlenecks or restrictions.
- c) Assess the relevance and financial viability of involving other PAHO offices and other partners to develop technical cooperation for the development of these solutions and actions.
- d) Select pilots and operational research to be implemented each year until 2015 and estimate the necessary budget that can be financed by AMI in 2016-2020.

R5: Implement a performance management monitoring and AMI evaluation

Arguments:

- According to the finding F9 of this evaluation, AMI does not manage for results or indicators that measure their performance and effectiveness and AMI planning process needs improvement. AMI does not have a Performance Management Plan (PMP) along the lines of USAID (<http://usaidprojectstarter.org/content/pmp-performance-management-plan>).

- The AMI planning process takes too long, no single format is used, the planning criteria are not explicit and plans of each country are not available. AMI monitoring is not done with indicators of rate of progress or implementation progress of the lines of work or performance indicators of the tasks in each country. Planning has no performance indicators for regional goals, and planning of the partners revolves around the activities done in the countries. AMI planning should be aligned to the lines of action of the Presidential Initiative to Combat Malaria (PMI).
- The AMI results framework clearly shows that performance is measured at the level of implementation of the interventions promoted by AMI and improvements in program management of malaria control in each country as well as in the production of tools, methodologies and strategies by partners and PAHO.
- These evaluation indicators will be operationalized so that they could measure the AMI results framework and it was found that it is possible with document review, reporting countries, surveys and interviews.

We recommend the following actions:

- a. Develop a results framework with performance indicators based on a change theory for each line of action of AMI. This results framework must be articulated with the PAHO Strategy and Plan of Action for Malaria in the Americas and the lines of action of PMI.
 - Example of performance indicators (Table 6): “Progress level of technical assistance interventions”, categories: planned, design and initial implementation, consolidation and results/impact evaluation, included in regular program operations.
- b. Develop an AMI Performance Monitoring Plan with results indicators, products and principal activities. Indicators should have a data sheet, sources of information and a baseline. AMI requires developing their PMP along the lines of USAID (See: <http://usaidprojectstarter.org/content/pmp-performance-management-plan>).
- c. The results framework and the PMP must be validated at an AMI Annual Meeting.
- d. Develop a planning format and web application for scheduling activities and monitoring of performance indicators, with a schedule of programming and monitoring reports.
- e. The PMP should have an information system that allows the recording, analysis and reporting of monitoring indicators.
 - The Web format may include: AMI lines of work, activities, activity description, goals, schedule, budget (AMI and counterparty), responsible for the activity schedule, malaria situation to population center.
 - Indicators and targets for each indicator
 - The list of activities will be categorized (eg, workshop, training, technical assistance, research, etc.).
 - Tracking PMP indicators can be done with Tableau® (example: <http://public.tableausoftware.com/profile/agamarra#!/vizhome/MalariaUNASUR2/Dashboard1>).

- f. The first year of planning and monitoring will require technical assistance.
- g. The following procedure is proposed to reduce planning time (reduced to less than 2 months).
 - The work plans start with the participation of national stakeholders according to their needs and institutional organization. The proposed plan of each country is developed within the constraints of PAHO focal point and is registered in the Web application. PAHO, AMI, and WDC make comments to each of the countries plans (estimated a month time).
 - At the AMI Annual Meeting, the PAHO WDC presents the consolidated plan, identifying those activities that require adjustments and passing it on to the Steering Committee (estimated one week time). The Steering Committee makes recommendations to the countries to make the adjustments if necessary within a period not exceeding 15 days. PAHO consolidates and sends AMI the Plan for approval.

ANNEXES

ANNEX I: CONSISTENCY BETWEEN PAHO'S GOALS AND AMI OBJECTIVES

Ia. Consistency between goal I of PAHO's Strategy and Plan of Action for malaria in the Americas 2011-2015 and AMI's objectives and activities for 2012 to 2015

PAHO Strategy and Plan of Action for Malaria in the Americas, 2011-2015	AMI 2012-2015
Goal 1: Intensify efforts directed toward malaria prevention, surveillance, early detection, and outbreak containment in various program contexts.	Objective 5: Improve epidemiological surveillance
1.1 Reinforce country capacity in malaria prevention through efforts that include health education and promotion, use of appropriate prophylactic measures, among others.	
1.2 Further improve information systems and advocate that malaria surveillance data be disaggregated by sex, ethnicity, and other variables that facilitate appropriate analysis of disparities and inequalities between populations.	Ensure that the countries report malaria based on individual records (data disaggregated by sex, age, ethnicity and other variables that facilitate appropriate analysis).
1.3 Strengthen and improve the epidemiological information exchange system at all levels - regional, between countries with common borders, and within the countries themselves.	
1.4 Strengthen the surveillance system for malaria morbidity and mortality by focusing on judicious detection and management of malaria outbreaks in conjunction with International Health Regulation (IHR) efforts.	Ensure that countries have strategies for malaria epidemiological surveillance that adequately address different epidemiological conditions and promptly and effectively detect and respond to changes in epidemiological conditions (e.g., out-breaks, reappearance of malaria transmission).
1.5 Standardize and implement appropriate methodologies for the investigation of malaria cases and deaths, coupled with active surveillance, especially in areas of low transmission or where the disease has been eliminated, with a view to preventing reintroduction.	
1.6 Further strengthen research capability and the development of technologies and tools that apply to malaria prevention, surveillance, early detection, and outbreak containment.	Produce or improve tools used in epidemiological surveillance, investigations and reporting. Support countries in the improvement of the malaria epidemiological surveillance system and its integration or articulation with vector surveillance and control and monitoring and evaluation of other malaria control activities in a sustained manner.

IB. Consistency between Goal 2 of PAHO's Strategy and Plan of Action for malaria in the Americas, 2011-2015 and AMI activities for 2012-2015

PAHO Strategy and Plan of Action for Malaria in the Americas, 2011-2015	AMI 2012-2015
Goal 2: Promote, strengthen, and optimize mechanisms and tools for judicious and cost effective vector management.	Objective 4: Improving vector surveillance and integrated vector management
2.1 Provide technical assistance to countries for development of their capacity to address specific vector management problems, including monitoring for insecticide resistance.	Ensure that countries adopt and implement strategies for entomological surveillance, including monitoring of susceptibility to insecticides, and integrated vector management considering different epidemiological situations. Produce or update the standardized protocols and other tools for vector surveillance and control interventions, including monitoring of vector susceptibility to insecticides (e.g. taxonomic key for anopheles, mobile applications for supporting malaria prevention and control).
2.2 Further develop, strengthen, and expand the coverage of existing networks that monitor insecticide resistance.	Strengthen networking within/among countries expressed through the timely availability of information for the region and country levels on vector susceptibility to insecticides, vector control activities implemented, etc.
2.3 Advocate the recruitment, training, and retention of health system personnel trained in vector management.	
2.4 Collaborate on maintaining entomologic surveillance and vector management capacity in countries that have eliminated local malaria transmission.	Produce and update an entomological map for the Amazon and Central American countries with information on presence and habits of actual and potential malaria vectors
2.5 Advocate research on integrated vector management and related areas of work.	Ensure that countries have policies for evidence-based selection of vector control interventions and adequately implement, monitor, and evaluate them.

IC. Consistency between Goal 3 of PAHO's Strategy and Plan of Action for malaria in the Americas and AMI's objectives and activities for 2012 to 2015

PAHO Strategy and Plan of Action for Malaria in the Americas, 2011-2015	AMI 2012-2015
Goal 3: Strengthen efforts to achieve universal access to prompt, accurate, and quality malaria diagnosis, followed by rapid treatment with effective antimalarial medicines.	Objective 1: Improving/sustaining monitoring of efficacy of and resistance to antimalarials, and prevent emergence of resistance to antimalarials. Objective 2: Improving access to quality diagnosis and treatment Objective 3: Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control.
3.1 Further develop, strengthen, and expand the coverage of existing networks in malaria diagnosis and surveillance to detect resistance to antimalarial medicines.	Ensure countries have logistic systems for antimalarial drugs and supplies that make quality drugs and supplies available at point of use, considering different epidemiological situations.
3.2 Strengthen and sustain capacity for the surveillance of resistance to antimalarial medicines, as well as quality assurance in malaria treatment and diagnosis, including external quality assurance programs (EQAP).	Ensure that countries adopt and implement updated strategies for rationale monitoring of the efficacy of and resistance to antimalarials that consider different epidemiological situations. Produce or update standardized protocols and other tools for training of health staff providing malaria treatment. Ensure that complementary capacities exist at regional, country, and local level to adequately carry out the monitoring of efficacy of and resistance to antimalarials. Ensure that each country's strategy for monitoring the efficacy of and resistance to antimalarials complement each other to build a regional strategy.
3.3 Advocate for increased access to coverage (particularly in the public health care system, and in the private system as deemed appropriate) that is equitable, efficient, and effective, with adherence to appropriate malaria diagnosis and treatment regimens, especially for pregnant women, children, persons living with HIV/AIDS, travelers, mobile populations, miners, loggers, banana and sugarcane plantation workers, indigenous groups, populations in areas of armed and/or social conflict, and people living in border areas or areas of common epidemiologic interest.	Ensure countries adopt and implement strategies to guarantee Access to early, quality malaria diagnosis and treatment, considering different epidemiological situations.
3.4 Strengthen advocacy for use of the treatment guidelines recommended by PAHO/WHO while discouraging presumptive treatment.	Ensure that countries adopt and implement malaria treatment policies and practices that contribute to preserve efficacy of antimalarial drugs Produce or update standardized protocols and other tools for training of health staff providing malaria treatment.
3.5 Enhance institutional, network, and country readiness to perform and manage appropriate and adequate malaria diagnosis and treatment in various program contexts.	Ensure countries adopt and implement strategies to guarantee Access to early, quality malaria diagnosis and treatment, considering different epidemiological situations. Ensure that countries implement timely evidence-based, updates policies for antimalarial treatment. Support sustained implementation by countries of antimalarial drug policies
3.6 Reinforce capacity for the clinical management of malaria, particularly severe and complicated cases, in the public sector and, as deemed appropriate, in the private sector.	Ensure countries adopt and implement strategies to maintain the capacities to adequately prescribe and dispense antimalarials, considering different epidemiological scenarios.
3.7 Further strengthen research capability and the development of technologies and tools that apply to malaria diagnosis and treatment.	Produce or improve tools for procuring, distributing, and monitoring the utilization of antimalarial drugs and supplies. Produce or update tools for prescription, dispensation, and consumption of antimalarials, and related pharmacological surveillance (of secondary effects). Systematize, and yearly publish and disseminate current, standardized information on activities performed to assess efficacy of and resistance to antimalarials (e.g., in vivo efficacy studies, assessments done using in vitro or molecular tools) at country level (Amazon and Central America countries).

ID. Consistency between Goal 4 of PAHO's Strategy and Plan of Action for malaria in the Americas and AMI's objectives and activities for 2012 to 2015

PAHO's Strategy and Plan of Action for malaria in the Americas	AMI 2012-2015
Goal 4: Foster an environment that promotes sustainability and supports collaborative efforts and best practices to combat the disease.	Objective 6: Improving networking and strengthening systems
4.1 Support the development and strengthening of existing networks, partnerships, and collaboration on malaria in the Region.	Strengthening networking among countries in the Amazon region and Central America for the Exchange, dissemination and/or discussion of information, experiences, etc. relevant to malaria surveillance, prevention and control at sub-regional and country levels, and for promoting and facilitating South-South cooperation. Consider expanding RAVREDA scope and geographic coverage to consolidate a network for supporting malaria prevention and control in the Amazon Region and Central America.
4.2 Optimize opportunities for synergy with other existing PAHO/WHO initiatives (e.g., integration of malaria efforts with maternal and child health in community and local health care programs; health promotion and education interventions; programs on neglected diseases; occupational health; among others) and policies (e.g., the San Salvador Protocol to the American Convention on Human Rights in the Area of Economic, Social, and Cultural Rights; the Convention on the Rights of the Child).	Strengthening networking among countries in the Amazon region and Central America for the Exchange, dissemination and/or discussion of information, experiences, etc. relevant to malaria surveillance, prevention and control at sub-regional and country levels, and for promoting and facilitating South-South cooperation.
4.3 Strengthen and support efforts to identify and replicate best practices, including models of successful integration of cross-cutting issues.	
4.4 Increase the participation and involvement of NGOs and the community, including women's groups, indigenous groups, and ethnic minorities.	Improve sustainability of RAVREDA expressed as sustained participation of member countries in network activities and increased reliance on funding of its operations from member countries (including funding of their participation in network activities).
4.5 Further strengthen research capability and the development of technologies and tools that apply to advocacy, communication, partnerships, and collaboration.	
4.6 Promote and enhance opportunities for ongoing coordination and knowledge sharing at all levels of activity (regional, sub-regional, and national).	Strengthen RAVREDA and individual countries networking with other major stakeholders in malaria control in the region (e.g., implementers of projects financed by the Global Fund to Fight AIDS, Tuberculosis and Malaria, Salud Mesoamerica 2015).

IE. Alignment between Goal 5 of PAHO's Strategy and Plan of Action for Malaria in the Americas, 2011-2015 and AMI's objectives and activities for 2012 to 2015.

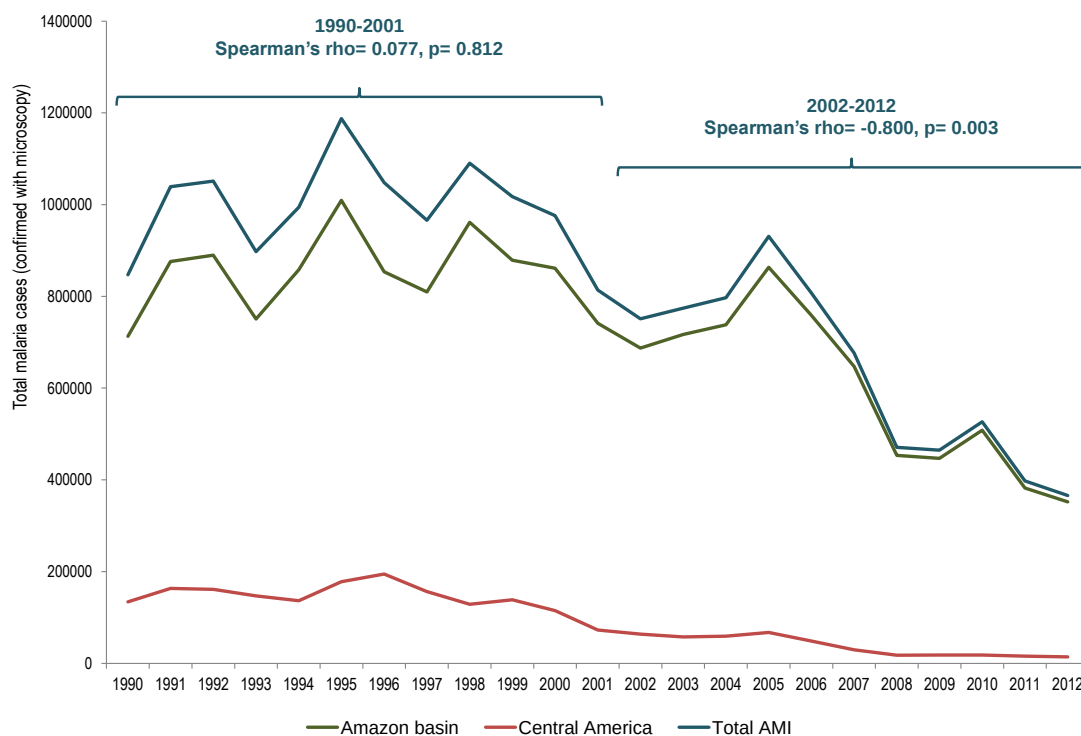
PAHO Strategy and Plan of Action for Malaria in the Americas, 2011-2015	AMI 2012-2015
Goal 5: Optimize efforts to strengthen health systems (including strategic planning, monitoring and evaluation, operations research, among others) and the countries' capacity to address their respective malaria challenges both relevantly and adequately.	Objective 6: Improving networking and strengthening systems
5.1 Ensure adequate recruitment, training, and retention of malaria-trained personnel in the country health systems and within PAHO/WHO to facilitate relevant technical cooperation in various levels of work (regional, inter-country, and in country) and program contexts (including malaria elimination).	
5.2 Advocate and facilitate inter-country (south-south) collaboration and exchange of experiences and best practices.	Strengthening networking among countries in the Amazon region and Central America for the Exchange, dissemination and/or discussion of information, experiences, etc. relevant to malaria surveillance, prevention and control at sub-regional and country levels, and for promoting and facilitating South-South cooperation.
5.3 Collaborate with countries and stakeholders on malaria policy development and strategic planning.	
5.4 Collaborate on monitoring and evaluation of programs.	
5.5 Collaborate to increase the availability and accessibility of health infrastructure for the most affected populations.	
5.6 Collaborate to strengthen the capacity of national programs in the areas of management, logistics, financing, and resource mobilization.	Develop and implement a sub-regional strategy to improve the organization of MNCPs to make them more effective and efficient in a decentralized health sector.
5.7 Assist in optimizing results and facilitating synergies in the implementation of externally funded malaria activities (e.g. Global Fund Projects) in the Region.	Strengthen RAVREDA and individual countries networking with other major stakeholders in malaria control in the region (e.g., implementers of projects financed by the Global Fund to Fight AIDS, Tuberculosis and Malaria, Salud Mesoamerica 2015).
5.8 Advocate the development of financial strategies to sustain malaria control and elimination efforts at different levels.	Promote the sustainability of malaria surveillance, prevention, and control at country level in the Amazon Region and Central America.
5.9 Promote and emphasize the benefits of operations research in program development and management.	

IF. AMI objectives that do not correspond with direct results of the AMI activities

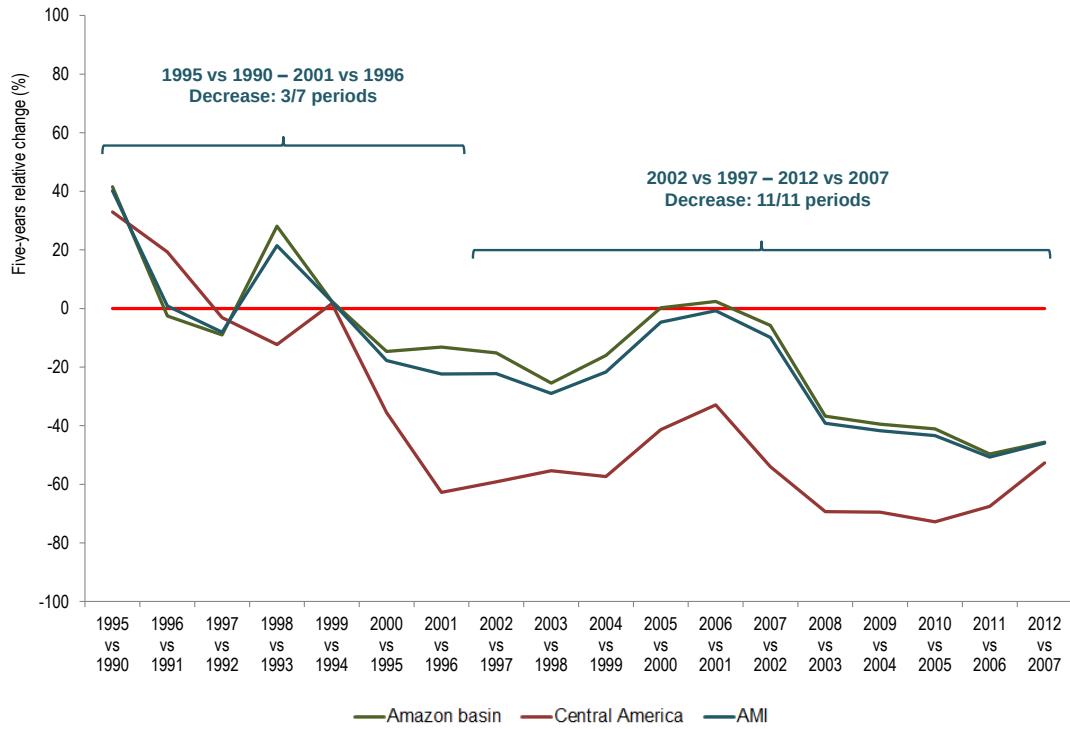
- Ensuring that countries report on malaria based on individual records.
- To ensure that countries have strategies for epidemiological surveillance appropriate to different epidemiological conditions that respond promptly and effectively to detect changes in malaria epidemiological conditions.
- Ensure that countries adopt and implement strategies for entomological surveillance, including monitoring of insecticide susceptibility, and integrated vector management taking into account the different epidemiological situations.
- Ensure that countries have policies for the selection of evidence-based vector control interventions implemented properly, monitoring and evaluation of them.
- Ensure that countries have logistics systems for antimalarial drugs and supplies that make quality drugs and supplies available at the point of use, taking into account different epidemiological situations.
- Ensure that countries adopt and implement updated control efficiency and resistance to antimalarial strategies, taking into account the different epidemiological situations.
- Ensure that there are complementary to regional, national and local capacities to carry out the monitoring of the effectiveness and resistance to antimalarials.
- Ensure and monitor the effectiveness of antimalarial resistance takes place in a regional strategy.
- Ensure that countries adopt and implement policies and practices of malaria treatment to preserve the efficacy of antimalarial drugs.
- Ensure that countries adopt and implement strategies to ensure access to the principles, the quality of malaria diagnosis and treatment, taking into account the different epidemiological situations.
- Ensure that countries implement evidence-based policies, timely updates to malaria treatments.
- Ensure that countries adopt and implement strategies to maintain the capabilities to properly prescribe and dispense antimalarial drugs, considering different epidemiological scenarios.

ANNEX 2: MALARIA STATISTICS PER REGION AND COUNTRY

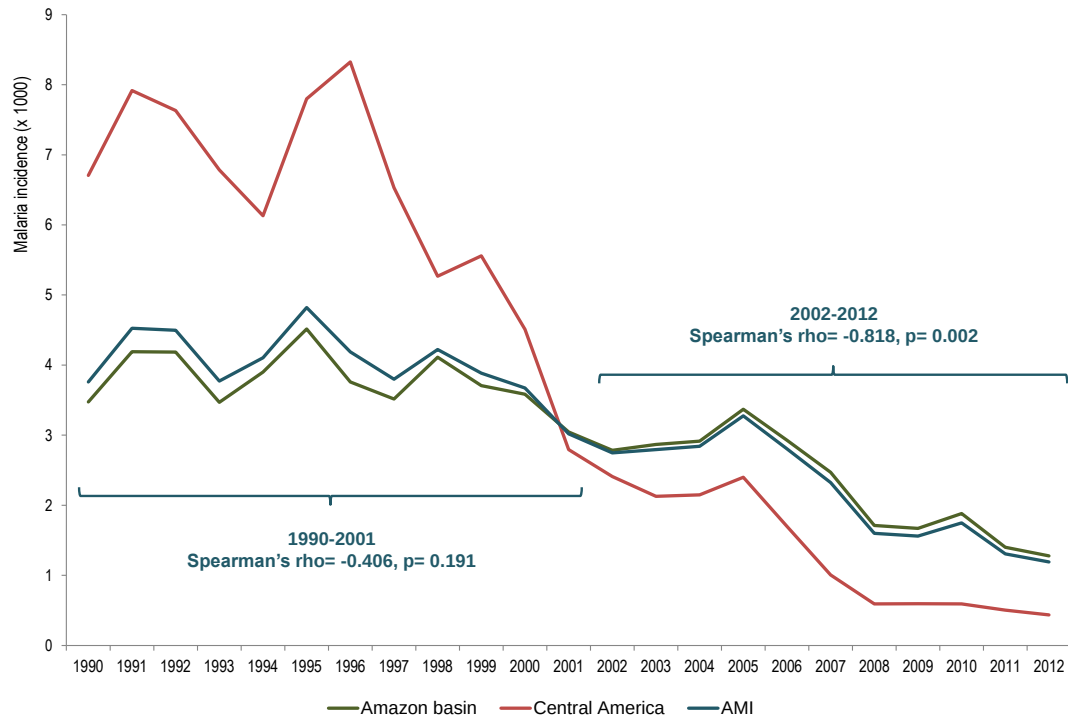
2A. Comparison Analysis of malaria cases trends between the periods 1990-2001 and 2002-2012 in the AMI participating countries



2B. Percentage of reduction of the malaria cases in five-year periods before and during the implementation of AMI by region



2C. Comparative analysis of incidence trends of malaria between the period 1990-2001 and 2002-2012 in regions of AMI participating countries



2D. Trend of malaria incidence before and after the AMI implementation by region and country

Region	Country	Trend of malaria incidence	
		Before AMI	During AMI implementation
Amazon basin	Brazil	Moderate descending, significant (rho= -0.635, p= 0.027)	Moderate descending, significant (rho= -0.659, p= 0.027)
	Colombia	Stationary (rho= -0.001, p= 0.998)	Strong descending, significant (rho= -0.924, p< 0.001)
	Guyana	Mild descending, not significant (rho= -0.274, p= 0.388)	Stationary (rho= -0.012, p= 0.971)
	Peru	Moderate ascending, not significant (rho= 0.469, p= 0.124)	Strong descending, significant (rho= -0.982, p< 0.001)
	Suriname	Strong ascending, significant (rho= 0.818, p= 0.001)	Strong descending, significant (rho= -0.936, p< 0.001)
Central America	Belize	Moderate descending, not significant (rho= -0.566, p= 0.055)	Strong descending, significant (rho= -0.945, p< 0.001)
	Guatemala	Mild descending, not significant (rho= -0.343, p= 0.276)	Strong descending, significant (rho= -0.918, p< 0.001)
	Honduras	Moderate descending, significant (rho= -0.636, p= 0.026)	Strong descending, significant (rho= -0.936, p< 0.001)
	Nicaragua	Mild descending, not significant (rho= -0.294, p= 0.354)	Strong descending, significant (rho= -0.836, p= 0.001)
	Panama	Mild ascending, not significant (rho= 0.337, p= 0.284)	Strong descending, significant (rho= -0.836, p= 0.001)
TOTAL AMI COUNTRIES		Moderate descending, not significant (rho= -0.406, p= 0.191)	Strong descending, significant (rho= -0.818, p= 0.002)
	Bolivia*	Mild ascending, not significant (rho= 0.259, p= 0.417)	Strong descending, significant (rho= -0.845, p= 0.001)
	Ecuador*	Mild ascending, not significant (rho= 0.245, p= 0.443)	Strong descending, significant (rho= -1.00, p< 0.001)
	Venezuela*	Mild descending, not significant (rho= -0.376, p= 0.229)	Stationary (rho= -0.067, p= 0.844)

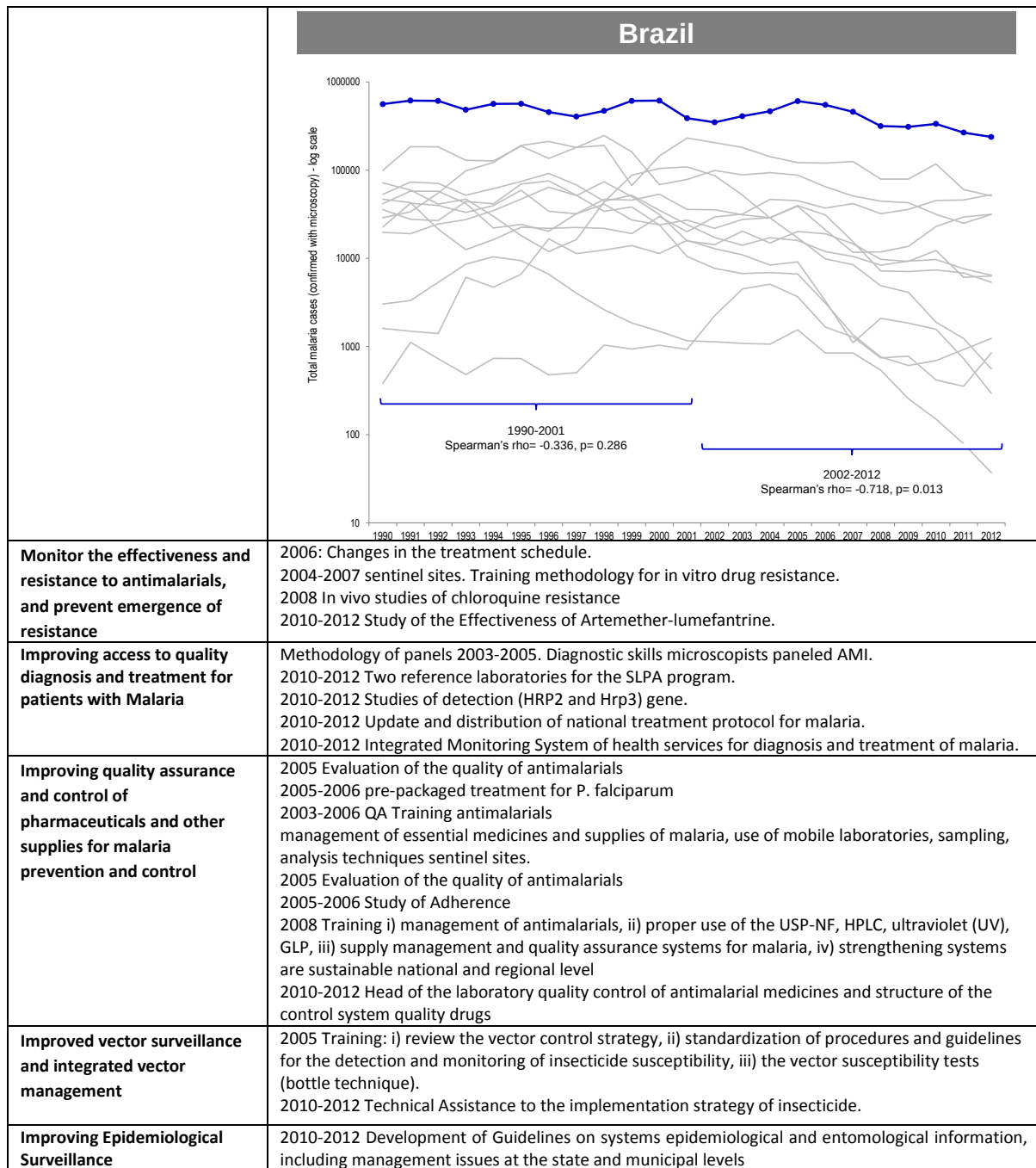
* Currently not AMI member

2E. Trend of case fatality rate for malaria before and during the implementation of AMI according to regions and countries

Region	Country	Trend of malaria case fatality rate	
		Before AMI	During AMI implementation
Amazon basin	Brazil	Strong descending, significant (rho= -0.916, p< 0.001)	Mild ascending, not significant (rho= 0.300, p= 0.370)
	Colombia	Strong descending, significant (rho= -0.762, p= 0.004)	Moderate ascending, not significant (rho= 0.455, p= 0.160)
	Guyana	Moderate ascending, not significant (rho= 0.600, p= 0.208)	Strong descending, significant (rho= -0.800, p= 0.003)
	Peru	Stationary (rho= 0.095, p= 0.823)	Moderate descending, significant (rho= -0.697, p= 0.017)
	Suriname	Mild descending, not significant (rho= -0.155, p= 0.650)	Moderate descending, not significant (rho= -0.450, p= 0.165)
Central America	Belize	Stationary (rho= 0.00, p= 1.00)	Moderate descending, not significant (rho= -0.415, p= 0.233)
	Guatemala	Strong descending, significant (rho= -0.808, p= 0.028)	Mild descending, not significant (Spearman's rho= -0.326, p= 0.327)
	Honduras	Stationary (rho= 0.00, p= 1.000)	Strong ascending, significant (rho= 0.805, p= 0.003)
	Nicaragua	Moderate descending, significant (rho= -0.692, p= 0.013)	Mild ascending, not significant (rho= 0.284, p= 0.397)
	Panama	Mild ascending, not significant (rho= -0.242, p= 0.449)	Mild descending, not significant (rho= -0.376, p= 0.254)
TOTAL AMI COUNTRIES		Strong descending, significant (rho= -0.804, p= 0.002)	Mild descending, not significant (rho= -0.219, p= 0.517)
	Bolivia*	Mild descending, not significant (rho= -0.283, p= 0.460)	Strong descending, significant (rho= -0.775, p= 0.005)
	Ecuador*	Stationary (rho= 0.073, p= 0.852)	Stationary (rho= 0.100, p= 0.770)
	Venezuela*	Stationary (rho= 0.091, p= 0.790)	Strong descending, significant (rho= -0.782, p= 0.004)

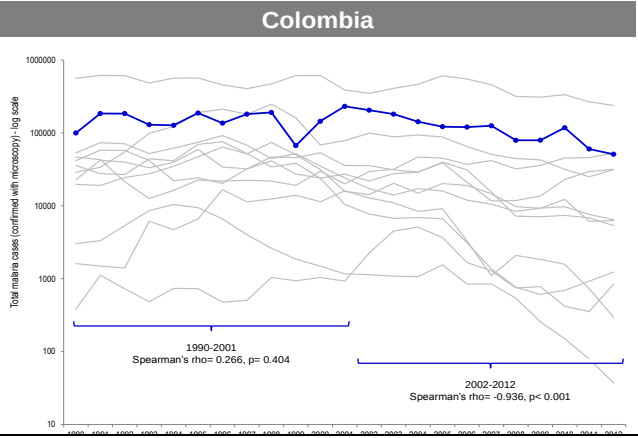
* Currently not AMI member

2F. Trend of malaria and AMI activities developed in Brazil



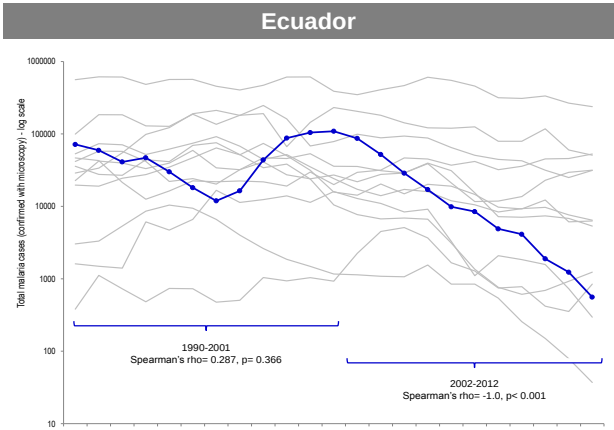
Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

2G. Trend of malaria and AMI activities developed in Colombia

	
Monitor the effectiveness and resistance to antimalarials, and prevent emergence of resistance	2006: Changes in the treatment schedule. 2003-2004 sentinel sites. 2005 Training in vitro method for drug resistance. 2010-2012 Study of efficacy for the treatment of falciparum malaria. 2010-2012 Efficacy Study of CQ + PQ for vivax malaria
Improving access to quality diagnosis and treatment for patients with Malaria	2003-2004 Changes in performance monitoring methodology. 2010-2012 Standards certification microscopists. Updating the 2010-2012 National Clinical Guidelines for Comprehensive malaria patients. 2010-2012 Training and RDT microscopists. Acquisition and distribution of RDTs. Guide to the agent network community. 2010-2012 Tailoring formats supervision / monitoring for the diagnosis of RDT. 2010-2012 National Institutes of Health participates in the SLPA program. 2010-2012 Guidelines for Comprehensive Care and Clinical Surveillance and Vector Control
Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control	2005 Manual for basic quality testing antimalarials. Drug logistics instrument. 2004-2009 Training : i) management of essential drugs and supplies , ii) use of portable laboratories , sampling, analysis techniques sentinel sites , iii) supply management and quality assurance systems , iv) Proper use of the USP -NF , HPLC, ultraviolet (UV) , GLP , v) sustainable systems of national and regional level , vi) Fellow at USP , vii) Implementation and monitoring of antimalarial management . 2005-2006 Study of adherence. 2010 pilot drug quality (disintegration of TLC) Study. 2010-2012 Performance evaluation of drug stores. * Analysis of the supply situation of malaria. 2010-2012 CAP Studio and institutionalization of the Periodic Monitoring Network Diagnostic and Treatment Centers. 2010-2012 Pilot information analysis tool. 2010-2012 Training 3LA technicians. Acquisition and minilabs donation. Training: Focus of the three levels
Improved vector surveillance and integrated vector management	2005-2012 Training : i) Standardization of procedures and guidelines for the detection and monitoring of insecticide susceptibility , ii) Evidence of vector susceptibility to insecticides (technical bottle) , iii) Identification of species and taxonomy iv) monitoring system to areas of low to moderate transmission, v) control strategy vector, vi) Management and maintenance of equipment for applying insecticides, vii) National Guidelines on entomology and vector surveillance viii) Geographic Information Systems (GIS). 2010-2012 Certification for vector control workers. 2010-2012 Implementation of: i) information on the insecticide resistance monitoring basal sentinel sites, ii) residual insecticide in the nets . 2010-2012 Monitoring insecticide resistance monitoring. Consolidation and Analysis of Regional Information Insecticide Resistance
Improving Epidemiological Surveillance	2010-2012 Training: i) Review of epidemiological information and impact of interventions. Regulation for the development of formats, databases and indicators Malaria program. Individual Listing notification

Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

Annex 2H. Trend of malaria and AMI activities developed in Ecuador

	
Monitor the effectiveness and resistance to antimalarials, and prevent emergence of resistance	2006: Changes in the treatment schedule. 2003 Processing of samples for molecular markers. 2003-2005 sentinel sites. 2010-2012 Studies of first-line therapy for vivax. 2010-2012 Study of second-line treatment in borders Ecuador, Colombia and Peru.
Improving access to quality diagnosis and treatment for patients with Malaria	2005-2006 Diagnosis * quality diagnostic Training. Rapid test, microscopists. 2005-2006 Guide treatment of P. vivax 2010-2012 Training of trainers in microscopic diagnosis. 2010-2012 quality control system diagnosis. 2010-2012 Proposed intervention for active case detection. 2010-2012 Pilot system for quality control of RDT. 2005 - 2008: New methodology for evaluating the performance of microscopists
Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control	2005-2006 Manual of basic tests of the quality of antimalarials. Methodology for forecasting drug needs. 2007-2009 Technical Guide logistics antimalarials. 2010-2012 Standard for the routine monitoring of access to antimalarials. 2003-2012 Training : i) quality control of antimalarial , ii) Changes in drug policy , iii) management of essential drugs and supplies , iv) standardization of analytical techniques v) use of portable laboratories , sampling techniques analysis of sentinel sites . vi) Proper use of the USP -NF , HPLC, ultraviolet (UV) , GLP . vii) Supply management and quality assurance systems for malaria , viii) Update on novel therapeutic treatments. 2005-2006 Study of Adherence 2007-2009 Evaluation of the quality of antimalarials 2010-2012 Standard Operating Procedures to improve drug management. Support for the management of medicines in areas of low malaria transmission or without. 2010-2012 Guide Development of case management for health personnel. 2010-2012 Monitoring the implementation of the strategy quality control . 2010-2012 Two drug procurement processes through the PAHO Strategic Fund.
Improved vector surveillance and integrated vector management	2005-2008 Training: i) Standardization of procedures and guidelines for the detection and monitoring of insecticide susceptibility, ii) susceptibility testing vector to insecticides (technical bottle), iii) entomology and vector control, iv) monitoring system to areas of low to moderate transmission, v) vector control strategy. Strategy Paper 2010-2012 for the elimination of P. falciparum. Document 2010-2012 local experiences on monitoring insecticide resistance. 2010-2012 Update Standard Operating Procedures for the use of mosquito nets.
Improving Epidemiological Surveillance	2010-2012 Review of malaria information system and upgrade to a new platform. 2010-2012 National Workshop for technical and statistical.

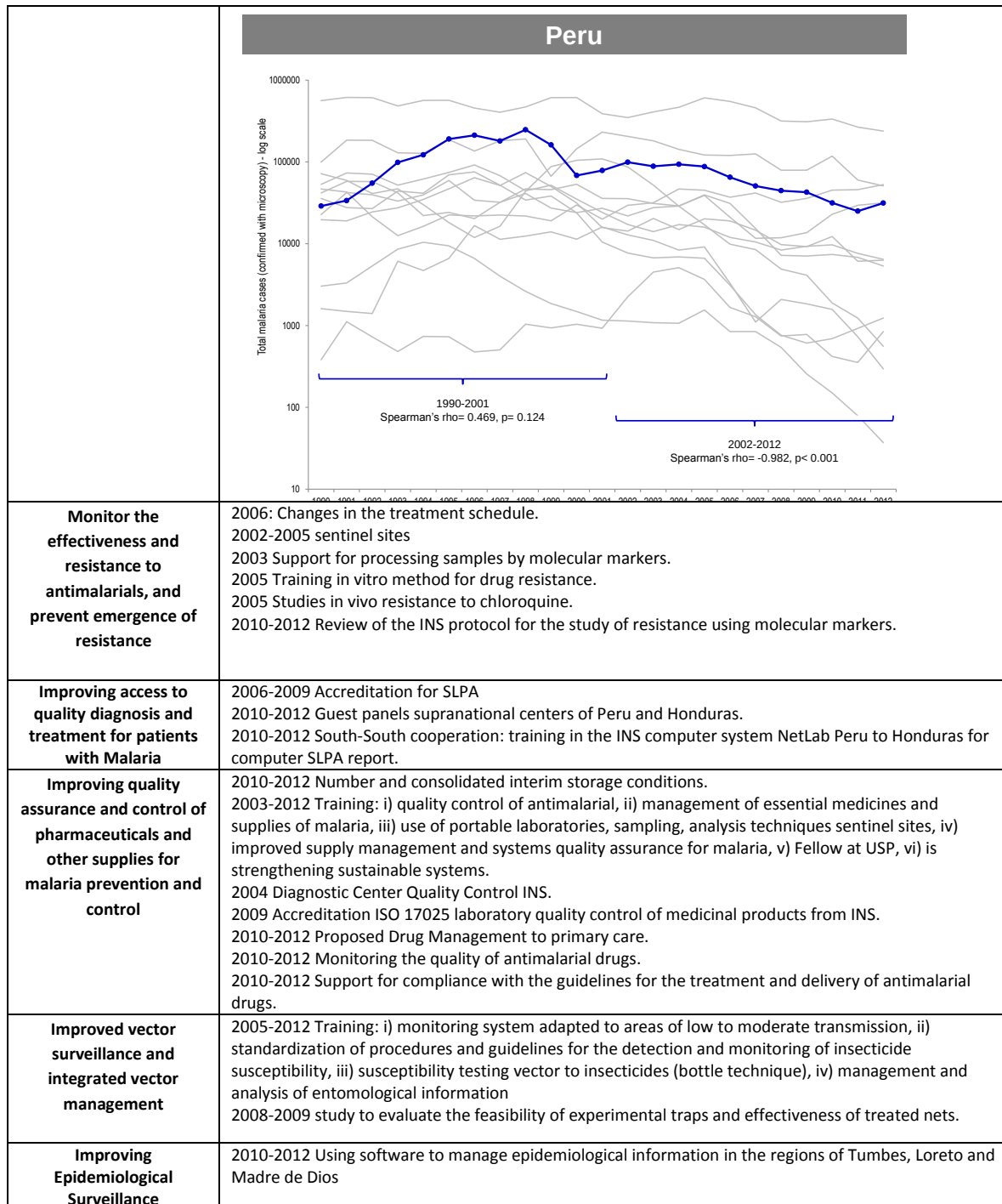
Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

2I. Trend of malaria and AMI activities developed in Guyana

	Guyana Total malaria cases (confirmed with microscopy) - log scale 1990-2001 Spearman's rho= -0.308, p= 0.331 2002-2012 Spearman's rho= 0.082, p= 0.811
Monitor the effectiveness and resistance to antimalarials, and prevent emergence of resistance	2006: Changes in the treatment schedule. Sentinel sites. Training methodology for in vitro drug resistance. Study of efficacy of first-line therapy for vivax malaria. Study the effectiveness of TCA for falciparum malaria.
Improving access to quality diagnosis and treatment for patients with Malaria	2005 - 2006 Design of new diagnostic policy. 2003-2006 Training of microscopists
Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control	2004-2006 Improvement of procurement, distribution and management of drugs. 2006 pre -packaged, blister primaquine purchase. Treatments 2003-2012 Training : i) quality control of antimalarial , ii) management of essential medicines and supplies of malaria , iii) use of portable laboratories , sampling, analysis techniques sentinel sites , iv) use of portable laboratories , sampling, analysis techniques sentinel sites . v) supply management and quality assurance systems for malaria , vi) Fellow at USP , vii) sustainable systems , viii) standardized prescribing and dispensing of antimalarials procedures. 2006 Study of antimalarials in mining areas. 2010 pilot drug quality (disintegration of TLC) Study . 2010-2012 Set of standardized prescribing and dispensing of antimalarials procedures. 2010-2012 Supervisory visits availability and compliance with basic requirements for case management of malaria.
Improved vector surveillance and integrated vector management	2006-2012 Training: i.) Standardization of procedures and guidelines for the detection and monitoring of insecticide susceptibility, ii) susceptibility testing vector to insecticides (technical bottle) iii) entomology and integrated vector management. 2010-2012 Evaluation Unit of Entomology and Vector Control. 2010-2012 Acquisition of equipment for the Entomology Unit. 2010-2012 Development of a protocol nets interventions.
Improving Epidemiological Surveillance	Training 2010-2012: epidemiological information system. Review the information system.

Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

2J. Trend of malaria and AMI activities developed in Peru



Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

2K. Trend of malaria and AMI activities developed in Suriname

	Suriname Total malaria cases (confirmed with microscopy) - log scale 1990-2001 Spearman's rho= 0.839, p= 0.001 2002-2012 Spearman's rho= -0.936, p< 0.001
Monitor the effectiveness and resistance to antimalarials, and prevent emergence of resistance	2002-2003 sentinel sites. 2010-2012 Study of Artemether-Lumefantrine effectiveness.
Improving access to quality diagnosis and treatment for patients with Malaria	2005-2006 Training of microscopists. 2010-2012 Guidelines for high performance standards in microscopy. 2005 - 2006 Protocol for diagnostic microscope.
Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control	2008 pre-packaged for simple cases of falciparum. Treatments 2003-2008 Training: i) quality control of antimalarial, ii) use of portable laboratories, sampling, analysis techniques sentinel sites, iii) use of portable laboratories, sampling, analysis techniques sentinel sites, iv) management supplies and quality assurance systems for malaria. 2010 pilot drug quality (disintegration of TLC) Study. 2010-2012 Evaluation of the quality assurance system.
Improved vector surveillance and integrated vector management	2005 - 2008 Training: i) entomology and vector control, ii) standardization of procedures and guidelines for the detection and monitoring of insecticide susceptibility, iii) evidence of vector susceptibility to insecticides (technical bottle). 2010-2012 Approval of entomological parameters in sentinel sites. 2010-2012 Baseline in insecticide resistance.
Improving Epidemiological Surveillance	2010-2012 Support for increasing coverage of national malaria information in areas of gold mining

Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

2L. Trend of malaria and AMI activities developed in Venezuela

	Venezuela Total malaria cases (confirmed with microscopy) - log scale 1990-2001 Spearman's rho = -0.245, p = 0.443 2002-2012 Spearman's rho = 0.582, p = 0.060
Monitor the effectiveness and resistance to antimalarials, and prevent emergence of resistance	2002-2005 sentinel sites.
Improving access to quality diagnosis and treatment for patients with Malaria	2004 Training in vitro method for drug resistance. 2004 Live studies of resistance to chloroquine.
Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control	2005-2006 Training of microscopists. 2005 Purchase of primaquine in blister packs to improve patient adherence to treatment.
Improved vector surveillance and integrated vector management	2003-2006 Training: i) vector control strategy, ii) standardization of procedures and guidelines for the detection and monitoring of insecticide susceptibility, iii) susceptibility testing vector to insecticides (technical bottle).
Improving Epidemiological Surveillance	No registered activities

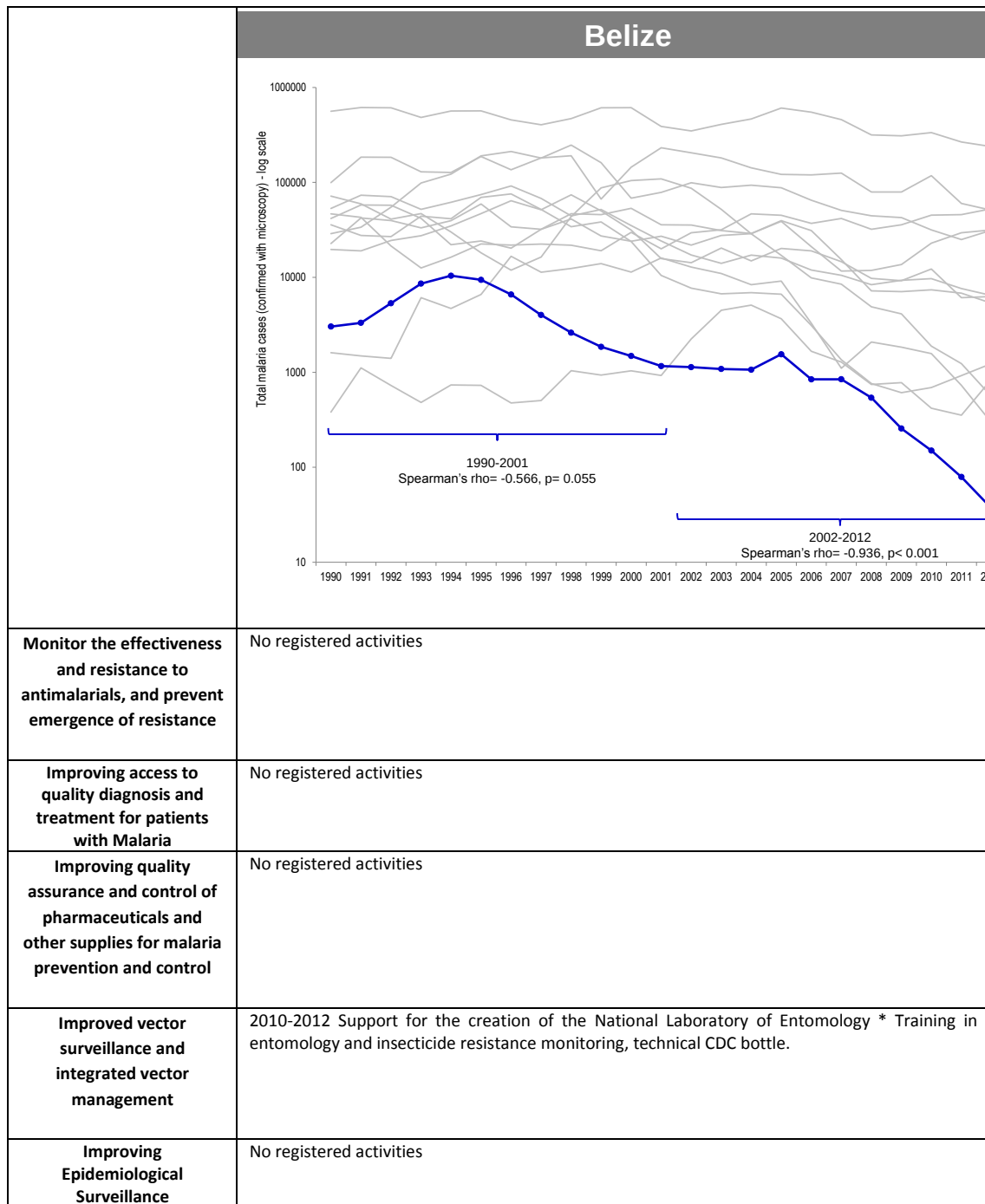
Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

2M. Trend of malaria and AMI activities developed in Bolivia

Monitor the effectiveness and resistance to antimalarials, and prevent emergence of resistance	2004-2007 Sentinel Posts 2010-2012 Live efficacy study of chloroquine for <i>P. vivax</i>
Improving access to quality diagnosis and treatment for patients with Malaria	2005 Training of microscopists. 2005 Update of malaria control manual with new management model based diagnostic guides AMI 2010-2012 Guide to malaria diagnosis and direct quality control (panel slides), national, regional and local. Training of microscopists.
Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control	2003-2005 Training control of antimalarial quality, management of essential drugs and supplies malaria, standardization in analytical techniques (La Paz) 2006-2007 Estudio de adherencia Development of the Strategic Management Plan antimalarials. Basic usage along the supply chain. Manual testing. Adherence study. 2008 Supply Management Training and quality assurance systems for malaria. 2010-2012 Implementation 3LA where there are minilabs.
Improved vector surveillance and integrated vector management	Training 2007 *: i) monitoring system adapted to areas of low to moderate transmission, ii) standardization of procedures and guidelines for monitoring insecticide susceptibility, iii) Technical bottle . 2010-2012 Surveillance of resistance to insecticides for malaria control in Santa Cruz. Pilot ITNs.
Improving Epidemiological Surveillance	Epidemiological surveillance in two municipalities with the technical cooperation of the Santa Cruz Laboratory. CENETROP 2010-2012 Development Guide systems epidemiological and entomological information, including management at the state and municipal levels. Review registration forms malaria.

Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

2N. Trend of malaria and AMI activities developed in Belize



Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative For Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

20. Trend of malaria and AMI activities developed in Guatemala

	Guatemala Total malaria cases (confirmed with microscopy) - log scale 1990-2001 Spearman's rho= -0.126, p= 0.697 2002-2012 Spearman's rho= -0.900, p< 0.001
Monitor the effectiveness and resistance to antimalarials, and prevent emergence of resistance	2010-2012 Adaptation of PAHO protocol for the study of effectiveness of CQ in patients with uncomplicated vivax malaria including molecular biological analysis.
Improving access to quality diagnosis and treatment for patients with Malaria	2010-2012 Training of microscopists and buy 3 microscopes to endemic areas.
Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control	2008-2009 Training: i) Proper use of the USP-NF, HPLC, ultraviolet (UV), GLP, ii) Fellow at USP, iii) sustainable systems. 2010-2012 Supply Management Guide.
Improved vector surveillance and integrated vector management	No registered activities
Improving Epidemiological Surveillance	No registered activities

Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

2P. Trend of malaria and AMI activities developed in Honduras

	Honduras Total malaria cases (confirmed with microscopy) - log scale 1990-2001 Spearman's rho= -0.587, p= 0.045 2002-2012 Spearman's rho= -0.936, p< 0.001
Monitor the effectiveness and resistance to antimalarials, and prevent emergence of resistance	2010-2012 Training transferred to parasitology laboratory and start processing samples of filter paper. 2010-2012 Integration of epidemiological and clinical findings in vivo in vitro study of chloroquine (CQ) 2010-2012 Adaptation of standardized method for evaluating the therapeutic efficacy of CQ in vivax malaria protocol. 2010-2012 Training CDC test with molecular markers. 2010-2012 Development of protocol for implementing monitoring molecular markers for <i>P. falciparum</i> malaria. 2010-2012 Study of HRP2 gene.
Improving access to quality diagnosis and treatment for patients with Malaria	2010-2012 National Policy on malaria South-South Cooperation 2010-2012: Accreditation by OPS for evaluating the performance of microscopists (SLPA) 2010-2012 Development of standard patterns of the panels for malaria microscopy of SLPA. 2010-2012 South-South Cooperation: Peru to Honduras to review and adapt the program (NetLab) for recording the results of assessments microscopists. 2011 National Standards for malaria to date.
Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control	2008 Training: i) Proper use of the USP-NF, HPLC, ultraviolet (UV), GLP, ii) National Standards. 2010-2012 Development of protocol to assess the availability and quality of antimalarial drugs.
Improved vector surveillance and integrated vector management	2010-2012 Intervention nets and epidemiological surveillance.
Improving Epidemiological Surveillance	2010-2012 Update the surveillance, monitoring and data logging process.

Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

2Q. Trend of malaria and AMI activities developed in Nicaragua

	Nicaragua Total malaria cases (confirmed with microscopy) - log scale 1990-2001 Spearman's rho= -0.203, p= 0.527 2002-2012 Spearman's rho= -0.836, p= 0.001
Monitor the effectiveness and resistance to antimalarials, and prevent emergence of resistance	2010-2012 sentinel sites. Evaluation of methodology for monitoring resistance to antimalarial drugs at sentinel sites. Development of a guide for evaluating the performance monitoring subsystem.
Improving access to quality diagnosis and treatment for patients with Malaria	2010-2012 Training laboratory technicians sentinel sites.
Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control	2010-2012 Training: management protocol to characterize, supply and availability of antimalarial drugs. Establishing criteria for scheduling drugs under layers of epidemiological transmission.
Improved vector surveillance and integrated vector management	2010-2012 Baseline for monitoring insecticide resistance by using the bottle technique. SSC: Peru assistance in entomology. Curricular Plan for the Diploma in Medical Entomology. Protocol on mosquito insecticide resistance. CDC provided basic equipment for the Laboratory of Entomology.
Improving Epidemiological Surveillance	2010-2012 South-South Cooperation: Support System Honduras nominal registration

Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

2R. Trend of malaria and AMI activities developed in Panama

	Panama Total malaria cases (confirmed with microscopy) - log scale 1990-2001 Spearman's rho= 0.399, p= 0.199 2002-2012 Spearman's rho= -0.836, p= 0.001
Monitor the effectiveness and resistance to antimalarials, and prevent emergence of resistance	2010-2012 Review and adjustment of protocols for efficacy studies. 2010-2012 study of the efficacy of chloroquine for the treatment of <i>P. vivax</i> malaria.
Improving access to quality diagnosis and treatment for patients with Malaria	2010 Training. Malaria diagnosis 2010-2012 Revision of national guidelines for the diagnosis of malaria by microscopy and RDT. 2010-2012 Amendment of Rules (Epidemiology, Clinical, Laboratory, Vectors, Drug, and promotion).
Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control	2010-2012 Development of guidelines for the use and quality control of diagnostic RDT 2008-2009 Training : i) Proper use of the USP-NF, HPLC, ultraviolet (UV), GLP (Guayaquil), ii) sustainable systems, 2010-2012 Amendment of Rules(Epidemiology, Clinical, Laboratory, Vectors, Drug, and promotion) 2010-2012 change in the treatment regimen of S + P to A + L for <i>P. falciparum</i> malaria 2010-2012 Training health personnel in the new national standards for the treatment of malaria.
Improved vector surveillance and integrated vector management	2006. Training: Surveillance system adapted to areas of low to moderate transmission 2010-2012 Development of geo-referenced maps and database areas with malaria. 2010-2012 Workshops for community leaders in the entomological and epidemiological surveillance, and environmental management. 2010-2012 Amendment of Rules (Epidemiology, Clinical, Laboratory, Vectors, Drug, and promotion).
Improving Epidemiological Surveillance	2010-2012 Training in epidemiological analysis of malaria. Modification of Standards (Epidemiology, Clinical, Laboratory, Vectors, Drug, and promotion)

Source: OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID; PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI); PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (AMI) South American Initiative for Infectious Diseases (SAIDI). Final Report. October 2008 – March 2012; USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

ANNEX 3: AMI ACTIVITIES AND PRODUCTS

3A. Activities and programmed products in AMI that were included in the questionnaire to malaria control program officials to identify which were implemented in the country

Area	AMI supported malaria control activities and products
Diagnosis and treatment	1. External Evaluation of Reference Laboratories of the countries by Laboratories Peru and Honduras 2. Performance Monitoring (indirect assessment) of microscopists in the country 3. Protocols for standardized training of microscopists 4. Policies malaria treatment 5. Primaquine Management Protocol in areas of low transmission in the treatment of P. vivax and P. falciparum 6. Protocol monitoring of supervised treatment 7. Standardized protocols for the training of health personnel to provide treatment against malaria. 8. PDR document selection based on the results of studies of HRP2 and Hrp3
Efficacy and resistance to antimalarials	1. Monitoring policy of antimalarial drug effectiveness and resistance considering the different epidemiological situations 2. Standardized protocols for monitoring antimalarial resistance 3. Implementation of sentinel sites for continuous monitoring of drug efficacy 4. Study of efficacy and resistance to antimalarials at country borders 5. Adherence studies of new therapeutic regimens for P. vivax 6. Reports of training courses locally in sentinel sites 7. Reports of monitoring the effectiveness conducted subnational 8. Reports and efficacy studies of antimalarial resistance.
Assurance and control of antimalarials and other pharmaceuticals	1. Supply management policy for the diagnosis and treatment of malaria 2. Procurement and logistics systems for malaria drugs and supplies used in the diagnosis 3. Supply reports / shortages of drugs 4. Guidelines for storage of medicines in places with high temperatures 5. Reports of drug analysis (disintegration, colorimetric reactions or thin layer chromatography (CCD))
Entomological surveillance, integrated vector control, insecticide resistance	1. Policies or standards on integrated vector control. 2. Aspect mapping vectors, considering their behavior, density, taxonomic classification, etc. 3. Vector management reports, considering the different epidemiological scenarios. 4. Report on the resistance of malaria vectors to insecticides with the bottle method 5. Evaluation of insecticide treated nets
Epidemiological surveillance	1. Epidemiological surveillance guide of malaria 2. Epidemiological surveillance system with integrated vector surveillance and / or interventions 3. Country malaria reports by (disaggregated by ethnicity, age, occupation, gender, geographic area, etc.). 4. Format reporting of malaria cases - individual notification form 5. Format report cases of malaria - collective notification form 6. Protocols and reporting tools for outbreaks of malaria

3B. Efficacy studies of Artemether-Lumefantrine in the treatment of *P. falciparum* malaria

Between 2011 and 2012 an increase in parasite clearance time was detected on the third day of patients in the studies conducted in some AMI/RAVREDA countries, specifically in Guayana and Suriname.

Characteristics	Surinam	Guyana
Study	Artemether-Lumefantrine Efficacy	Artemether-Lumefantrine Efficacy
Dates	April - October 2011	May 2011 - July 2012
# of enrolled patients	74 patients (M/F; no children)	92 patients total; 68 followed for 28 days
Evaluated Patients	Through Day 3: 52 cases Through Day 28: 11 cases	87 % adults 64 % minors 91% males
Results	ACPR: 11/11 (100%) Parasitemia D 3: 15/52(28.8%) (Compared 2005 - 2006: 2%)	Treatment Failure: 7/68 (10.3%) (day 7 - day 28) Parasitemia Day 3: 63/89 (70.8%)
External evaluation of slides	3 slides read positive that were initially negative 3 slides read negative that were initially positive Parasitemia Day 3 between <u>10.8 and 28.8%</u> <u>Very low parasitemia observed 1-2 parasites per 500 WBC (White blood cells)</u>	Follow up on slides from Day 3 7/82 (8.5%) 1-2 parasites/1000 WBC Follow up on slides for day 28 3 positive slides 1 recrudescence (PCR)
Challenges	Slides unprepared for long-term storage (external evaluation not planned) 27/48 Laminas Day 3 considered satisfactory for review. Parasitemia Day 3: 16.2%	

Source: Keith Carter Presentación de OPS – Reunión de AMI/RAVREDA de Managua. Marzo 2014.

ANNEX 4: ACTIVITIES SUPPORTED BY AMI

4A. Activities implemented by the countries and supported by AMI for monitoring the efficacy of and resistance to antimalarials

Country	Condition	Monitoring Policy	Standard Protocols	Implementation of Sentinel Sites	Study of Effectiveness and resistance	Adherence Studies Report	Performance Monitoring Reports	Reports of the Studies of Effectiveness and Resistance
Belize	Available							
Guatemala	Available							
Honduras	Available							
Nicaragua	Available							
Brazil	Available							
Colombia	Available							
Ecuador	Available							
Peru	Available							

Source: Interviews at PNCM

Yes	
No	

4B. Activities implemented by countries and those receiving support from AMI to improve access to diagnosis and treatment

Country	Condition	External Evaluation of Laboratories	Performance Monitoring of microscopists	Standardized protocols for training microscopists	Treatment Policies	Protocol for administration of primaquine	Protocol for monitoring supervised treatment	Standardized treatment protocols for training	Selection Document of PDR
Belice	Available								
Guatemala	Available								
Honduras	Available								
Nicaragua	Available								
Brazil	Available								
Colombia	Available								
Ecuador	Available								
Peru	Available								

Source: Interviews at PNCM

Yes	
No	

4C. Activities and products implemented by the countries and supported by AMI for the management and quality control monitoring of antimalarials

Country	Condition	Supply Management Policy	Procurement and logistics systems of medicines	Supply Reports / Shortages of drugs	Guides about storing medications	Information or analysis reports of medicines
Belice	Available					
Guatemala	Available					
Honduras	Available					
Nicaragua	Available					
Brazil	Available					
Colombia	Available					
Ecuador	Available					
Peru	Available					

Source: Interviews at PNCM

Yes	
No	

ANNEX 5: ACTIVITIES AND PRODUCTS SUPPORTED BY AMI

5A. Activities and products implemented by the countries and supported by AMI for monitoring and integrated vector management

Country	Condition	Vector Control Policies	Vector Map Reports	Vector Management Reports	Report on insecticide resistance	Evaluation of insecticide-treated nets
Belize	Available					
Guatemala	Available					
Honduras	Available					
Nicaragua	Available					
Brazil	Available					
Colombia	Available					
Ecuador	Available					
Peru	Available					

Source: Interviews at PNCM

Yes	
No	

5B. Activities and products implemented by the countries and supported by AMI for epidemiological surveillance of malaria

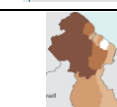
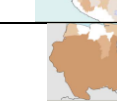
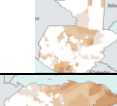
Country	Condition	Epidemiological surveillance guide	V. epidemiological system integrated into the vector surveillance	Malaria reports by country (disaggregated by ethnicity, age, occupation, gender, geographic area, etc.)	Individual report format	Collective report format	Protocols and reporting tools for outbreaks
Belice	Available						
Guatemala	Available						
Honduras	Available						
Nicaragua	Available						
Brazil	Available						
Colombia	Available						
Ecuador	Available						
Peru	Available						

Source: Interviews at PNCM

Yes	
No	

ANNEX 6. PERCENTAGE OF POPULATION AFFECTED BY MALARIA

Percentage of population affected by Malaria and geographical location in countries of the Amazon region and Central America

Region	Country	Population in areas of high transmission (>1 case/1000)	Plasmodium species	Vectors	Main endemic regions
Amazon basin	Brazil	2.3%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. darlingi</i> , <i>albitarsis</i> , <i>aquasalis</i>	States in the Amazon forest. 
	Colombia	14.8%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. darlingi</i> , <i>albimanus</i> , <i>nunezovari</i> , <i>neivai</i> , <i>punctimacula</i> , <i>pseudopunctipennis</i>	States of Antioquia, Choco, Cordoba and Narino, along the Pacific coast. 
	Ecuador	1%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. darlingi</i> , <i>albimanus</i>	Provinces of Guayasm Esmeralda and Cañasin the west of the country, and Amazon forest. 
	Guyana	35.0%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. darlingi</i> , <i>aquasalis</i>	Western and interior areas, especially with gold-mining activities. 
	Peru	4.5%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. darlingi</i> , <i>pseudopunctipennis</i> , <i>albimanus</i>	State of Loreto, in the Amazon forest region. 
	Suriname	15.7%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. darlingi</i>	Interior areas in the Amazon forest (indigenous populations and gold mining areas) 
Central America	Belize	0.0%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. albimanus</i> , <i>darlingi</i>	South-eastern districts of Stann Creek and Toledo. 
	Guatemala	16.1%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. darlingi</i>	South-western state of Escuintla. 
	Honduras	14.0%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. albimanus</i>	Eastern and north-eastern areas (the border with Nicaragua is a problem area for malaria control). 
	Nicaragua	1.3%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. albimanus</i> , <i>pseudopunctipennis</i>	North-eastern areas (along the border with Honduras). 
	Panama	4.4%	<i>P. falciparum</i> , <i>P. vivax</i>	<i>An. albimanus</i> , <i>pseudopunctipennis</i> , <i>punctimacula</i> , <i>aquasalis</i> , <i>darlingi</i>	State of Darien along the border with Colombia (areas with high proportion of indigenous populations) 

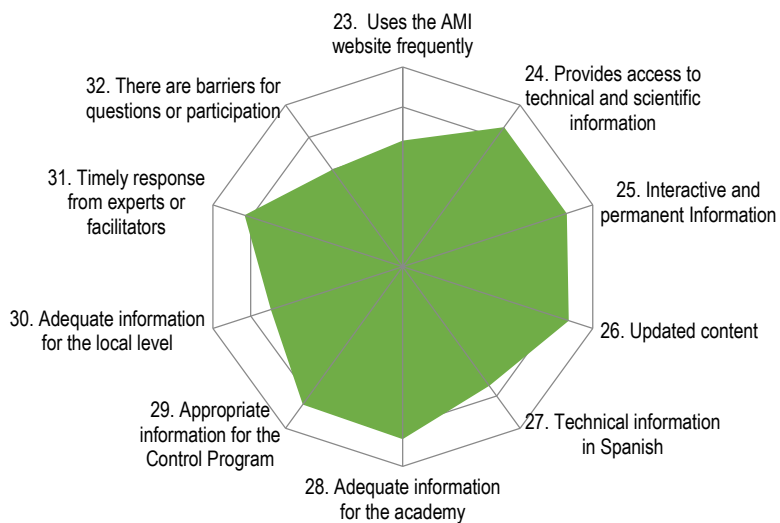
ANNEX 7: CASE STUDY RESULTS: DECENTRALIZATION AND MALARIA CONTROL PROGRAMS

Criteria	Peru	Brazil	Colombia	Ecuador	Guyana
Malaria Control Program Start Year	2006 - 2009 the transfer functions began in the health and education sectors	It began in 1992 Management and Implementation is a state or local responsibility (Federal Government is in charge of the procurement of drugs and insecticides)	It began in 1994 Two Benefit Plans: A Mandatory Health Plan (includes activities Dx and Tx of malaria) and a Basic Health Plan (to care for the entire population) 2011 General System of Social Security in Health	It began in 2008 Considering the new model of decentralization and the new structure of the Ministry of Public Health	1995 There is evidence of the issue of decentralization, through the Regional Authorities
Type of Decentralization	2nd Degree	1st Degree	2nd Degree	2nd Degree	3rd Degree
Central Governance	Poor governance because national standards are viewed as foreign, lack of clear standards and monitoring	Governance is strong because there is strong ongoing support and quality from multiple sectors	Governance is limited because there was no technical or administrative departmental support 2011 Integrated Management Strategy began.	The governance is exerted from the NMES where the control guidelines and procedures of prevention and control of malaria is exercised.	Poor governance and scarce specialized human resources
Qualified Human Resources	There are still deficiencies in qualified human resources at the local and regional level	The availability of quantity and quality of human resources has improved services to meet local demands	2006's strengthening of training and certification of ETV technicians through SENA. Hiring more staff but not for Malaria control	Constant shortage of human resources, there is a concentration of human resources in some areas, while others experience shortage due to lack of opportunities. There is high staff turnover and job instability.	There is a shortage of human resources at all levels
Financial Resources	There are funds transferred from the Ministry of Health to DIRESAS, but also from external donors such as PAMAFRO, UNICEF, PAHO, etc..	The funds are transferred directly from the Federal Government to the State or Municipal Fund quarterly	Transfers are made in proportion to the epidemiological situation funds allocated for salaries (increase recruitment) of the Department, also funds the annual vector control plan	No transfer of funds, these are distributed according to population criteria and health needs	High level of dependency on external financial cooperation AMI, PAHO, WHO, UNICEF, etc..

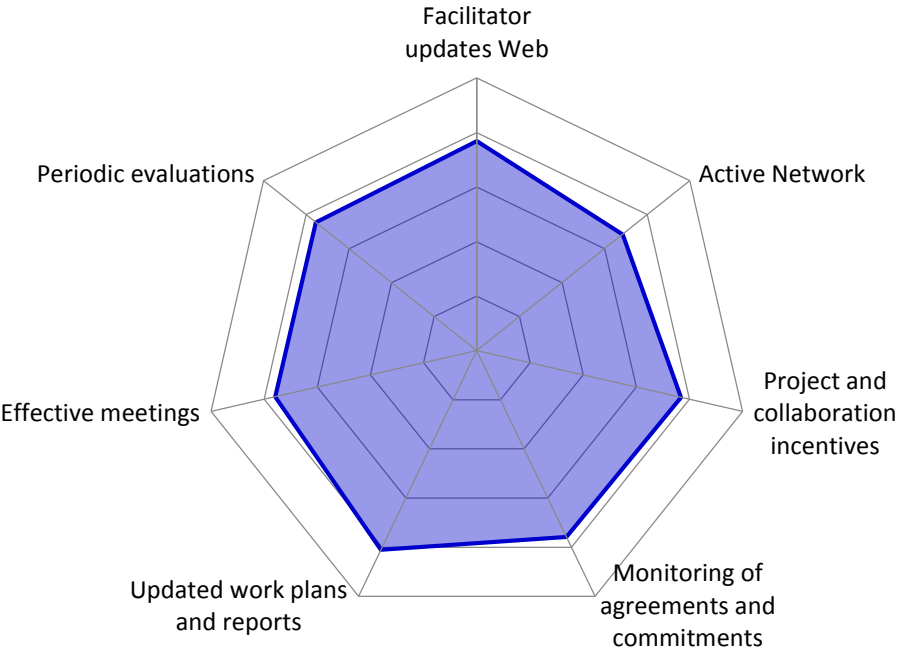
Source: OPS (2012). Documento de evaluación rápida de la gestión de la prevención y control de la malaria después de la descentralización del Sector Salud en el Perú 2012; and interviews in Colombia, Brazil, Peru (2014).

ANNEX 8: FEEDBACK AND OPINIONS FROM PARTICIPANTS TO ANNUAL MEETING

8A. Feedback of the RAVREDA strategy to use knowledge and information by members who participated in the XIII Annual Meeting of AMI / RAVREDA in Nicaragua, March 2014



8B. Opinions regarding RAVREDA facilitation of knowledge and information for use by members who participated in the AMI / RAVREDA XIII Annual Meeting in Nicaragua, March 2014



ANNEX 9. SUMMARY OF ECONOMIC CONTRIBUTIONS FOR MALARIA CONTROL IN AMI PARTICIPATING COUNTRIES

Country/Area	Year	Contributions reported by countries						European Union
		Government	Global Fund	PMI/USAID	Other bilateral	WHO	UNICEF	
Belize	2008	170,494	0	-	-	-	-	-
	2009	148,621	0	0	0	-	0	-
	2010	169,184	0	32,000	0	0	0	-
	2011	215,224	0	-	0	0	0	-
	2012	300,000	0	29,500	0	0	0	-
Brazil	2008	71,468,113	0	65,000	0	-	0	-
	2009	67,952,169	4,884,938	65,000	0	0	0	-
	2010	64,436,226	10,361,470	227,000	0	0	0	-
	2011	78,565,078	17,851,837	30,000	0	0	0	-
	2012	61,378,194	0	49,694	0	0	0	-
Colombia	2008	17,800,000	2,000,000	120,000	0	0	0	0
	2009	20,500,000	1,000,000	120,000	0	-	0	0
	2010	21,788,036	9,175,784	120,000	0	52,000	0	0
	2011	20,157,754	5,347,470	120,000	0	52,000	0	-
	2012	22,898,987	5,959,287	120,000	0	45,000	0	-
Ecuador	2008	3,941,711	220,000	82,000	100,000	-	-	-
	2009	2,428,604	400,000	-	0	80,000	0	-
	2010	2,327,187	531,945	-	-	-	-	-
	2011	3,314,143	327,863	0	0	0	0	-
	2012	1,957,708	150,820	-	-	-	-	-
Guyana	2008	320,840	337,620	119,000	0	25,000	0	14,000
	2009	341,775	-	140,000	34,000	10,000	0	-
	2010	661,500	-	110,000	10,000	10,000	0	-
	2011	62,840	-	120,000	4,000	14,000	0	-
	2012	1,075,952	799,527	150,000	0	20,000	0	-
Honduras	2008	576,434	316,567	82,383	0	19,522	0	-
	2009	649,579	1,100,908	55,000	0	22,522	0	-
	2010	939,438	1,158,468	90,964	0	29,670	0	-
	2011	990,876	842,438	80,278	0	11,856	0	-
	2012	295,570	970,940	58,936	0	14,546	0	-
Nicaragua	2008	457,751	600,000	-	-	-	-	-
	2009	-	2,015,344	-	-	-	16,173	-
	2010	429,381	731,600	33,674	-	35,000	-	-
	2011	320,053	2,032,089	43,163	-	5,433	-	-
	2012	439,258	1,747,908	41,663	-	6,001	0	-
Panama	2008	1,300,000	0	0	0	0	0	-
	2009	1,459,724	0	0	0	0	0	-
	2010	2,152,435	0	0	0	36,640	0	-
	2011	3,798,322	0	0	0	-	0	-
	2012	911,621	0	23,951	0	15,209	0	-
Peru	2008	-	-	125,000	-	-	-	-
	2010	13,000,000	0	200,000	0	-	0	-
	2011	70,768,247	0	-	0	-	0	-
	2012	109,318,163	0	-	0	-	0	-
Suriname	2008	-	-	100,000	-	-	-	-
	2009	-	-	-	-	-	-	-
	2010	-	-	-	0	-	0	-
	2011	-	-	-	0	-	0	-
Guatemala	2012	-	547,672	-	0	-	0	-
	2008	3,380,000	1,849,992	0	0	-	0	-
	2009	-	0	0	0	0	0	-
	2010	-	0	0	0	0	0	-
	2011	10,558,243	3,596,431	-	25,000	0	0	-
	2012	5,487,457	2,780,074	10,561	0	0	0	-

Fuente: World Malaria Report 2013

ANNEX 10: ANALYSIS OF AMI REPORTS

10A. Examples of lack of standardization of work plans

Characteristics	Examples
Different Formats	Revision of first 5 columns: - Honduras, Peru, Belize, Brazil Plans: Have AMI objective and activity, activity, baseline, milestone, activity and product - Panama and Colombia Plans: have principal activity, baseline, milestones, task and product. - Guatemala Plan: has principal activity, baseline, milestones, activity and product. - Guyana Plan: has principal activity, milestones, task and product. - Ecuador Plan: Has AMI objective and activity, activity, baseline, milestone, task and product - Nicaragua Plan: has baseline, milestone, task and product
Different understanding of content	- Baseline is defined as: the description of a situation, a justification, a code or described does not correspond to the activity. - Milestones: In some cases the activity is formulated for AMI International for each activity in the country, in other cases more than one milestone activity is established.
Not having goals	- The products are formulated as goals but do not have number.

Source: Work Plans

10B. AMI Reports

- Report October 2009 – September 2010

Report prepared by PAHO¹⁰⁴ presents a brief description of AMI and a list of activities organized according to the themes of the AMI objectives. The objective and (epidemiological surveillance) and 6 (strengthening of networks and systems) is not reported, but included a paragraph of information management. It has no conclusions or recommendations.

- Report October 2008 – September 2009

The report¹⁰⁵ was prepared by PAHO. It contains a brief description of the activities in each country, grouped by areas of intervention, but mentions that they are "prioritized by reporting activities". Only in the case of area of resistance to antimalarials are recommendations made by the AMI Committee included. No mention of objectives 5 or 6, but a paragraph about information management is included. The report does not include conclusions, recommendations or lessons learned.

- Report October 2008 - March 2012

Final Report¹⁰⁶ prepared by PAHO on the South American Regional Infectious Diseases Program (SARI). Includes a section on AMI and SAIDI.

AMI section presents information about the activities organized by areas and countries, making a reference to the situation in each country before the intervention and progress between 2001 and 2007. Not included in the report are the activities of the objective 6. Contains a section on lessons learned.

- Report 2001 – 2009

The report¹⁰⁷ was prepared by Links Media and presents an overview of AMI, mission, operations, partner roles, needs and problems and addressed activities and achievements between 2001 and 2009. Activities undertaken by the countries involved that were supported by AMI are mentioned and other countries that are not, but no explanation why they are included. This document is not a monitoring report, but a description of the activities, no stock of progress versus planning, progress or conclusions. Objective 6 that refers to strengthening networks is not reported.

¹⁰⁴ OPS. Annual report 2009-2010 for the program "Amazon malaria initiative (AMI) USAID"

¹⁰⁵ PAHO. Progress report for the Period 1 October 2008 – 31 March 2009. Amazon malaria initiative (AMI)

¹⁰⁶ PAHO. Award No. 527-A-00-08-00026-00. GRANT BETWEEN USAID AND PAHO/WHO. Amazon Malaria Initiative (Ami) South American Initiative For Infectious Diseases (Saidi). Final Report. October 2008 – March 2012

¹⁰⁷ USAID. The Amazon Malaria Initiative: Goals and Accomplishments. October 2001–September 2009

ANNEX 11. ADVANCES IN OBJECTIVES 1-5

Advances in objectives 1-5 according to survey results from NMCP and evidence review of the visited countries (Brazil, Colombia, Nicaragua and Peru)

The following tables compare the information gathered during the visits and the applied field surveys. There are some discrepancy between the two sources of information. On the one hand, the lack of orderly AMI documentation has not made it possible to have means of verification which to compare the responses from the interviews and surveys. However, both sources permit appreciation for the progress made towards the objectives.

Products Developed in Brazil

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
Resistance Surveillance of antimalarials	Updated policy for monitoring effectiveness and resistance to antimalarials based on evidence considering the different epidemiological situations	Yes	Yes	
	Standardized protocols and tools for updating the surveillance of antimalarial resistance		Yes	
	Study Reports of the adherence of new therapeutic regimens for P. vivax.		Yes	
	Reports on training courses locally in sentinel sites		Yes	
	Reports executed by regional levels for Effectiveness Monitoring		No	
	Scientific publications by Malaria Control Program teams, together with members of AMI or others		Not included	
	Publications of reports made in the documents of the Ministry		Not included	
	Reports and efficacy studies of antimalarial resistance.		Yes	
DIAGNOSIS AND TREATMENT	Document and tools for quality assurance and quality control in the diagnosis of malaria	Yes	Not included	Quality control system of quality laboratory diagnosis of malaria for the Amazon region
	Program Reports of External Evaluation of countries' Reference Laboratories by Laboratories Peru and Honduras	Yes	Yes	Report sent by external evaluation Peru
	Performance Monitoring Reports (indirect assessment) of the country Microscopists	Yes	Yes	Consolidated Report of Microscopists Performance Monitoring
	Training reports of the Microscopists	Yes	Not included	Complete report of Microscopists training
Quality management of medicines	Supply Management Policy for the diagnosis and treatment of Malaria	Yes	Yes	Practical malaria treatment guide in Brazil
	Antimalarial treatment policy based on current evidence. (check the rule if there are strategies to ensure the quality of treatment considering different epidemiological scenarios)	Yes	Yes	Practical malaria treatment guide in Brazil

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
	Supply Reports / Shortage of drugs in various points (places with low incidence and places where there is low incidence)	Yes	Yes	2009 Technical Report: Analysis of prescribing practices, dispensing and adherence to malaria treatment in countries sharing the Amazon Basin
		Yes	Yes	2011 Supply of antimalarial drugs directed at malaria diagnosis and treatment stations in Brazil
	Drug Stock Reports for treatment of Malaria by vivax, expiration date and movement. Kardex or others	Yes	Not included	Monthly Balance report of medication
	Document Selection PDR based on the results of studies of HRP2 and Hrp3		Yes	
	Sheets or management forms of primaquine in areas of low transmission.		Yes	
	Sheets or forms of tracking supervised treatment		No	
	Sheets or forms of primaquine administration, special recipes, etc.	Yes	Not included	Malaria treatment booklet in pregnant and tx schemes for all ages
	Treatment protocol, If there is any book or pamphlet to guide them how to administer the appropriate treatment	Yes	Not included	Malaria treatment booklet in pregnant and tx schemes for all ages
	Pamphlets or booklets that show how drugs should be stored in places with high temperatures	Yes	Yes	Malaria treatment booklet in pregnant and tx schemes for all ages
	Reports and drug analysis reports (Disintegration, reactions)		Yes	
	Colorimetric or thin layer chromatography (CCD) - is checked in the Quality Control Laboratory (INVIMA)		Yes	
Integrated Vector Control	Policies or implemented and updated standards in integrated vector control	Yes	Yes	2002 Manual for spraying of insecticide residual effect for vector control 2009 Guide to Local Management: malaria control: vector control
	Reporting of mapping vectors, considering their behavior, density, taxonomic classification, etc..		No	
	Vector management reports, considering the different epidemiological scenarios.		No	
Epidemiological surveillance	Epidemiological Surveillance Guide on malaria	Yes	Yes	Completed Document
	Surveillance System integrated with epidemiological surveillance and vector surveillance and / or interventions	No	No	There is no evidence

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
	Malaria Reports by country (disaggregated by ethnicity, age, occupation, gender, geographic area, etc.).	Yes	Yes	Has reports
	Report Form of malaria cases at health facilities main office (check if it is a form on individual or collective notification)	Yes	Yes	Notification listing of single cases
	Protocols and tools for Malaria outbreak reporting	Yes	Yes	2013 National Contingency Plan for Malaria Epidemics

Products developed in Colombia

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
Resistance Surveillance of antimalarials	Updated policy for monitoring effectiveness and resistance to antimalarials based on evidence considering the different epidemiological situations	Yes	Yes	2010 Malaria Clinic Guide MSPS
	Standardized protocols and tools for updating the surveillance of antimalarial resistance	Yes	Yes	Use the widespread AMI protocols
	Study Reports of the adherence of new therapeutic regimens for P. vivax.	Yes	Yes	Adherence report of treatment for P. falciparum and P. vivax
	Reports on training courses locally in sentinel sites		Yes	
	Reports executed by regional levels for Effectiveness Monitoring		Yes	
	Scientific publications by Malaria Control Program teams, together with members of AMI or others		Not included	
	Publications of reports made in the documents of the Ministry		Not included	
	Reports and efficacy studies of antimalarial resistance.		Yes	
DIAGNOSIS AND TREATMENT	Document and tools for quality assurance and quality control in the diagnosis of malaria	Yes	Not included	2010 working guide for training on the operation of the subsystem information for malaria and microscopists aimed at community workers
	Program Reports of External Evaluation of countries' Reference Laboratories by Laboratories Peru and Honduras	Yes	Yes	Reporting document of the results of the External Program of External Evaluation
	Performance Monitoring Reports (indirect assessment) of the country Microscopists	No	Yes	There is no evidence
	Training reports of the Microscopists	Yes	Not included	There are training reports of the SENA certified microscopists
Quality management of medicines	Supply Management Policy for the diagnosis and treatment of Malaria	Yes	Yes	2010 Management Plan Procurement and Supply 2012 National Drug Policy

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
	Antimalarial treatment policy based on current evidence. (check the rule if there are strategies to ensure the quality of treatment considering different epidemiological scenarios)	Yes	Yes	Procurement and Supply Management Plan
	Supply Reports / Shortage of drugs in various points (places with low incidence and places where there is low incidence)	Yes	Yes	Monitoring tools of supply stock of medicines and supplies
		Yes	Yes	Monitoring tools of supply stock of medicines and supplies
	Drug Stock Reports for treatment of Malaria by vivax, expiration date and movement. Kardex or others	Yes	Not included	Monitoring tools of supply stock of medicines and supplies
	Document Selection PDR based on the results of studies of HRP2 and Hrp3		Yes	
	Sheets or management forms of primaquine in areas of low transmission.		Yes	
	Sheets or forms of tracking supervised treatment		No	
	Sheets or forms of primaquine administration, special recipes, etc..		Not included	
	Treatment protocol, If there is any book or pamphlet to guide them how to administer the appropriate treatment		Not included	
	Pamphlets or booklets that show how drugs should be stored in places with high temperatures		Yes	
	Reports and drug analysis reports (Disintegration, reactions)		Yes	
	Colorimetric or thin layer chromatography (CCD) - is checked in the Quality Control Laboratory (INVIMA)		Yes	
Integrated Vector Control	Policies or implemented and updated standards in integrated vector control	Yes	Yes	Updated protocol for assessing insecticide resistance
	Reporting of mapping vectors, considering their behavior, density, taxonomic classification, etc.	Yes	Yes	There are studies of vector behavior
	Vector management reports, considering the different epidemiological scenarios.	No	Yes	
Epidemiological surveillance	Epidemiological Surveillance Guide on malaria	Yes	Yes	2011 Document Data Management 2014 Guide to Epidemiological Surveillance 2011 guide to data analysis training event for malaria

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
				2010 Training guide decision making for malaria
	Surveillance System integrated with epidemiological surveillance and vector surveillance and / or interventions	Yes	Yes	Since 2010 has started to integrate SIS Malaria but it is still not operational
	Malaria Reports by country (disaggregated by ethnicity, age, occupation, gender, geographic area, etc.).	Yes	Yes	Weekly epidemiologic newsletters
	Report Form of malaria cases at health facilities main office (check if it is a form on individual or collective notification)	Yes	Yes	Individual listing of malaria cases
	Protocols and tools for Malaria outbreak reporting	Yes	Yes	2014 Guide to Epidemiological Surveillance

Products developed in Nicaragua

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
Resistance Surveillance of antimalarials	Updated policy for monitoring effectiveness and resistance to antimalarials based on evidence considering the different epidemiological situations	Yes	Yes	Complete directory of studies monitoring resistance to antimalarials
	Standardized protocols and tools for updating the surveillance of antimalarial resistance	Yes	Yes	The protocol is included in the policy tools
	Study Reports of the adherence of new therapeutic regimens for P. vivax.		No	
	Reports on training courses locally in sentinel sites		Yes	
	Reports executed by regional levels for Effectiveness Monitoring		Yes	
	Scientific publications by Malaria Control Program teams, together with members of AMI or others		Not included	
	Publications of reports made in the documents of the Ministry		Not included	
	Reports and efficacy studies of antimalarial resistance.	Yes	Yes	2009 Report (CDC) study from 2005 to 2008 - Molecular Markers and DNA Sequencing 2012 Resistance Surveillance Study 2012 Mapping Monitoring antimalarials resistance
DIAGNOSIS AND TREATMENT	Document and tools for quality assurance and quality control in the diagnosis of malaria	No	Not included	There is no guide or manual to guide this process, currently using the one produced by AMI
	Program Reports of External Evaluation of countries' Reference Laboratories by Laboratories Peru and Honduras	Yes		Two rounds of the External Evaluation of Performance by the Laboratory of Honduras
	Performance Monitoring Reports (indirect assessment) of the country Microscopists		Yes	

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
	Training reports of the Microscopists		Not included	
Quality management of medicines	Supply Management Policy for the diagnosis and treatment of Malaria	Yes	Yes	Full document " Medication Guide with emphasis on programming as Epidemiologic strata and Resolution level "
	Antimalarial treatment policy based on current evidence. (check the rule if there are strategies to ensure the quality of treatment considering different epidemiological scenarios)	Yes	Yes	Updated document
	Supply Reports / Shortage of drugs in various points (places with low incidence and places where there is low incidence)	Yes	Yes	Report using Excel matrix for reporting supply and shortages
			Yes	
	Drug Stock Reports for treatment of Malaria by vivax, expiration date and movement. Kardex or others		Not included	
	Document Selection PDR based on the results of studies of HRP2 and Hrp3		Yes	
	Sheets or management forms of primaquine in areas of low transmission.		No	
	Sheets or forms of tracking supervised treatment		No	
	Sheets or forms of primaquine administration, special recipes, etc.		Not included	
	Treatment protocol, If there is any book or pamphlet to guide them how to administer the appropriate treatment		Not included	
	Pamphlets or booklets that show how drugs should be stored in places with high temperatures		No	
	Reports and drug analysis reports (Disintegration, reactions)		No	
	Colorimetric or thin layer chromatography (CCD) - is checked in the Quality Control Laboratory (INVIMA)		No	
Integrated Vector Control	Policies or implemented and updated standards in integrated vector control	Yes	Yes	The guidelines are included in the National Standard for the Control, Prevention and Treatment of Malaria based in different epidemiological settings

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
	Reporting of mapping vectors, considering their behavior, density, taxonomic classification, etc.	Yes	Yes	Full Report from 1990 to 2012 that have conducted Monitoring Insecticide Resistance
	Vector management reports, considering the different epidemiological scenarios.	Yes	Yes	There are reports under different epidemiological contexts
Epidemiological surveillance	Epidemiological Surveillance Guide on malaria	Yes	Yes	Guidelines for the Epidemiological Monitoring are included in the national standard of control, prevention and treatment of malaria
	Surveillance System integrated with epidemiological surveillance and vector surveillance and / or interventions	Yes	Yes	Reports are in Excel Tables by municipalities and epidemiological and entomological active case searches
	Malaria Reports by country (disaggregated by ethnicity, age, occupation, gender, geographic area, etc.).		Yes	
	Report Form of malaria cases at health facilities main office (check if it is a form on individual or collective notification)		Yes	
	Protocols and tools for Malaria outbreak reporting		No	

Products developed in Peru

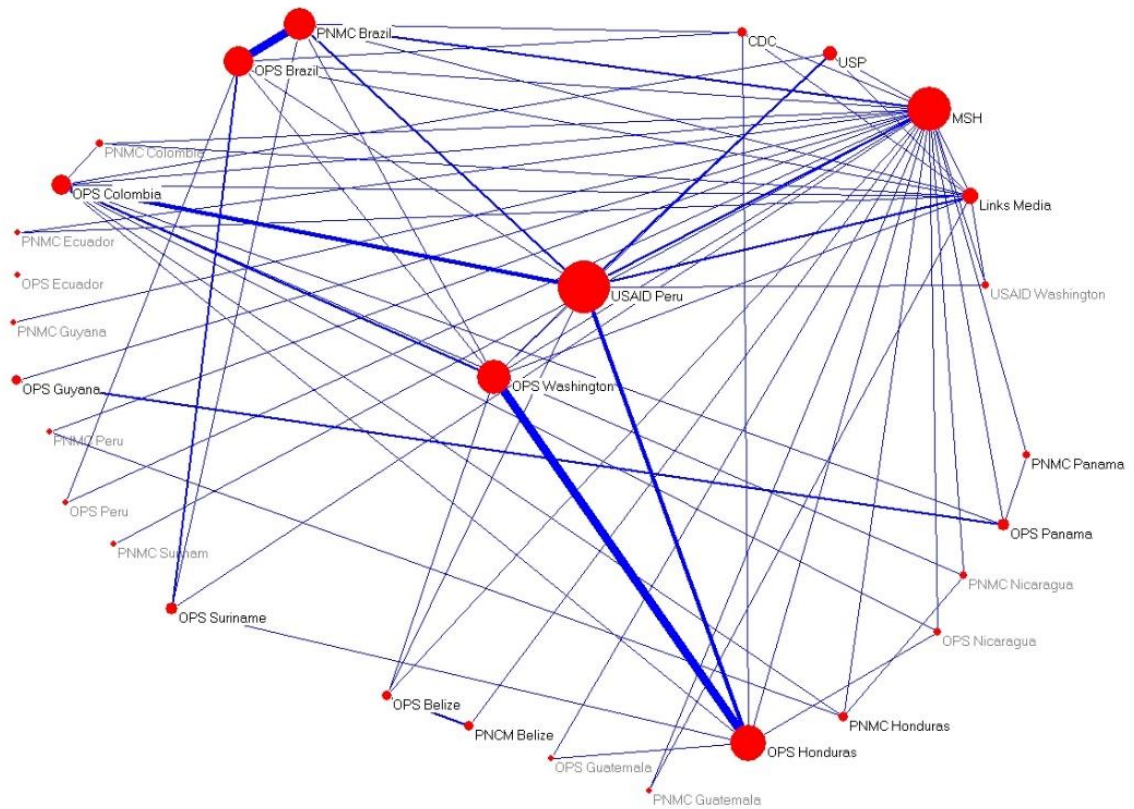
AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
Resistance Surveillance of antimalarials	Updated policy for monitoring effectiveness and resistance to antimalarials based on evidence considering the different epidemiological situations	Yes	Yes	2007 healthcare technical standard for treatment of malaria and severe malaria in Peru
	Standardized protocols and tools for updating the surveillance of antimalarial resistance		Yes	
	Study Reports of the adherence of new therapeutic regimens for P. vivax.		No	
	Reports on training courses locally in sentinel sites		No	
	Reports executed by regional levels for Effectiveness Monitoring		Yes	
	Scientific publications by Malaria Control Program teams, together with members of AMI or others	Yes	Not included	Several publications in Pub Med
	Publications of reports made in the documents of the Ministry		Not included	
	Reports and efficacy studies of antimalarial resistance.	Yes	Yes	Susceptibility reports published in WHO documents

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
DIAGNOSIS AND TREATMENT	Document and tools for quality assurance and quality control in the diagnosis of malaria	Yes	Not included	2012 Health Technical Standard for Quality Control of Microscopic Diagnosis of Malaria
	Program Reports of External Evaluation of countries' Reference Laboratories by Laboratories Peru and Honduras	Yes	No	There are established formats in the referred standard. Peru's lab is the international reference
	Performance Monitoring Reports (indirect assessment) of the country Microscopists	Yes	Yes	They exist but we were unable to access any
	Training reports of the Microscopists	Yes	Not included	We have not had a report or updated report
Quality management of medicines	Supply Management Policy for the diagnosis and treatment of Malaria	Yes	Yes	Procedures Manual 2013: Distribution of Pharmaceuticals, Medical Devices and Health Products. Regional Health Directorate of Loreto
	Antimalarial treatment policy based on current evidence. (check the rule if there are strategies to ensure the quality of treatment considering different epidemiological scenarios)	Yes	Yes	2009 change in treatment scheme
	Supply Reports / Shortage of drugs in various points (places with low incidence and places where there is low incidence)	Yes	Yes	Procedures Manual 2013: Distribution of Pharmaceuticals, Medical Devices and Health Products. Regional Health Directorate of Loreto
			Yes	
	Drug Stock Reports for treatment of Malaria by vivax, expiration date and movement. Kardex or others		Not included	
	Document Selection PDR based on the results of studies of HRP2 and Hrp3		Yes	
	Sheets or management forms of primaquine in areas of low transmission.		Yes	
	Sheets or forms of tracking supervised treatment	Yes	Yes	
	Sheets or forms of primaquine administration, special recipes, etc.		Not included	
	Treatment protocol, If there is any book or pamphlet to guide them how to administer the appropriate treatment		Not included	
	Pamphlets or booklets that show how drugs should be stored in places with high temperatures		Yes	
	Reports and drug analysis reports (Disintegration, reactions)		No	

AMI Line of Work	Policies, Standards, Activities Control Program Nicaragua	Review of evidence	Survey	Comments
	Colorimetric or thin layer chromatography (CCD) - is checked in the Quality Control Laboratory (INVIMA)		No	
Integrated Vector Control	Policies or implemented and updated standards in integrated vector control	Yes	No	2009 technical standard for the implementation of health surveillance of vector resistance to insecticides used in public health
	Reporting of mapping vectors, considering their behavior, density, taxonomic classification, etc..	Yes	Yes	2007 but there is a map, but according to interviews it needs to be updated
	Vector management reports, considering the different epidemiological scenarios.	Yes	No	2007 there is mapping of the epidemiological situation
Epidemiological surveillance	Epidemiological Surveillance Guide on malaria	Yes	Yes	2013 there is a health policy of Disease Notification and Events subject to epidemiological surveillance in public health
	Surveillance System integrated with epidemiological surveillance and vector surveillance and / or interventions	No	No	
	Malaria Reports by country (disaggregated by ethnicity, age, occupation, gender, geographic area, etc.).	Yes	No	There are reports by different variables
	Report Form of malaria cases at health facilities main office (check if it is a form on individual or collective notification)	Yes	Yes	Individual notification
	Protocols and tools for Malaria outbreak reporting	Yes	Yes	National Outbreak Reporting Directive, Epidemics and other Events of Importance for Public Health

ANNEX 12. EXCHANGE OF TECHNICAL INFORMATION AND COMMUNICATIONS

Exchange of technical information and communications coordination in the past year among participants of the XIII Annual Assessment Meeting AMI / RAVREDA in Nicaragua, March 2014



Source: Survey participants of the XIII Annual Meeting AMI / RAVREDA on RAVREDA communications, Nicaragua, March 2014

ANNEX 13: EVALUATION STATEMENT OF WORK

Program to be evaluated

The Amazon Malaria Initiative (AMI) was launched by the United States Agency for International Development (USAID) in 2001 to improve the control and treatment of malaria by the Ministries of Health and National Malaria Control Programs in the countries located in the Amazon Basin Subregion, including Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela. Participating countries collaborate with each other by exchanging information, experiences and expertise regarding malaria prevention and control.

AMI began as a collaborative effort by PAHO and USAID to complement the Roll Back Malaria Partnership. AMI's initial emphasis was on providing support to participating countries to revise antimalarial drug treatment policies based on scientific evidence obtained through efficacy trials. As progress was made towards that purpose, a more comprehensive approach to drug efficacy was implemented, including issues of drug quality assurance, adherence to treatment, supply chain management, and others. Also, activities related to evidence based integrated vector management were undertaken.

The partnership approach emerged in response to the need to invest in targeted activities to improve malaria control in the Amazon Basin. USAID leads a portfolio of activities that is also closely coordinated with partners in each participating country, mostly National Malaria Control Programs and other entities within Ministries of Health. For AMI, USAID joined forces with technical partners, i.e., the Pan American Health Organization, USAID/Latin America and the Caribbean (LAC) and USAID/Peru, CDC, U.S. Pharmacopeia, Management Sciences for Health, Links Media, and the Research Triangle Institute implementers of other USAID/Global Health activities. The selection of technical assistance providers are guided by needs of the countries and the region and ensuring that selected best practices and evidence based policy changes in the partner countries were implemented.¹⁰⁸

Since 2002, AMI has put into practice principles adopted by USAID/Global Health, including:

- Encourage country ownership and invest in country-led plans
- Build sustainability through health systems strengthening
- Strengthen and leverage key multilateral organizations, global health partnerships and private sector engagement
- Increase impact through strategic coordination and integration
- Promote learning and accountability through monitoring and evaluation
- Accelerate results through research and innovation

AMI also applies principles set in the USG Malaria Strategy for 2009–2014, particularly when:

- a) Working within existing national malaria control strategies and plans, strengthening the capacities of national institutions and professionals, and building ownership and sustainability at country and regional levels; focusing on providing high value technical assistance.
- b) Maintaining flexibility and responsiveness to the ever-changing nature of malaria, promoting and implementing efforts that correspond to the diverse epidemiologic settings that must be tackled.
- c) Designing and implementing activities in a way that build capacities for effective and efficient action against malaria, also at country and regional levels.

¹⁰⁸ Najera J, Zimmerman R, Schmunis G. (2012). External Evaluation of the Amazon Malaria Initiative (AMI) and the Amazon Network for the Surveillance of Resistance to Antimalarial Drugs (RAVREDA). Washington DC: of USAID/Peru, under the terms of Award No. 527-A-00-08-00026-00. Grant between USAID and PAHO/WHO Amazon Malaria Initiative (AMI) and South American Initiative for Infectious Diseases (SAIDI).

- d) Emphasizing vigilance for emerging threats such as malaria re-emergence or re-introduction, resistance to antimalarials, and vector resistance to insecticides; and also those resulting from potential or actual weakening of the response to malaria associated to a decreased incidence, and from changes in the health sector including decentralization and program integration.
- e) Promoting and supporting an evidence-based approach to malaria prevention and control, including the operational research needed to generate information for better decision making; as well as the development, testing, adaptation and adoption of innovative approaches and tools.
- f) Enhancing the sustainability of malaria prevention and control.
- g) Focusing interventions on high risk populations, particularly hard-to-reach ones that serve as reservoirs for malaria, increase the risk for re-emergence or re-introduction.
- h) Coordinating closely with other multilateral and bilateral institutions, particularly the Pan American Health Organization.
- i) Supporting a regional network of National Malaria Control Programs.

Expected Impact:

The Amazon Malaria Initiative (AMI) strategic objective and results are:

Strategic Objective: Malaria control programs in the Amazon Basin sub-region substantially incorporate selected best practices.

IR 1 - Evidence-based increased

IR 2 - Evidence-based communicated and used

IR 3 - More inclusive and better informed policy process promoted

Their expression as expected results are:

- Reliable and standardized surveillance information on malaria drug resistance and vector control used to monitor trends and more effectively target disease control efforts.
- Laboratory diagnosis of malaria improved.
- Tools and approaches developed, adapted, tested in local settings, and disseminated.

AMI aims to have countries effectively and efficiently addressing malaria through evidence based programs, adopting and sharing best practices, and collaborating through a regional network.

AMI contributes through high value technical assistance in the following priority areas for malaria prevention and control in the region:

1. Consolidate and take further progress achieved during AMI's first 10 years of work, with two top priorities:
 - a. Containment of the emergence or spread of resistance to Artemisinin based combination therapy (ACT), and
 - b. Preparedness for re-emergence and re-introduction of malaria.
 - c. In addition, further attention will be given to malaria in populations under special circumstances (e.g. gold miners, remote and scattered populations) as important elements contributing to the persistence of malaria transmission in the region; and to vivax malaria.
2. Increase sustainability of RAVREDA activities.
3. Strengthen the regional approach to malaria prevention and control.
4. Have effective and efficient NMCPs in the context of decentralized health sectors, and adequately implementing all malaria control strategies they adopt in varied epidemiological settings (i.e. areas with low or moderate malaria transmission, or with no transmission but at risk of it).
5. Successfully implement the Strategy and Plan of Action for Malaria in the Americas for 2011-2015.

AMI contributions¹⁰⁹:

- Acting as a catalyst for integrated malaria prevention and control efforts.
- Providing technical guidance and leadership on a regional scale base on global best practices and local solutions.
- Making possible sustained achievements and providing continuity of efforts in the Region to reach Roll Back Malaria targets. Many AMI countries have already reached targets established for 2015.
- Helping all AMI countries to introduce ACT, to monitor its efficacy; to improve its utilization, and quality assurance and control; and to early detect and address emergence of resistance to Artemisinin derivatives.
- Improving the quality of malaria microscopy diagnosis, and introducing rapid diagnostic tests.
- Improving malaria surveillance through training, new tools, and changes in systems.
- Creating the foundations utilized by AMI countries to submit successful malaria country proposals to the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM).
- Fostering the implantation of an “evidence based public health” approach in national malaria control programs.
- Strengthening coordination among malaria control stakeholders within countries, and between/among countries. It cannot be overemphasized that RAVREDA, the Amazon Network for the Surveillance of Resistance to antimalarial Drugs that AMI has contributed to build, is arguably the most functional malaria regional network in the world.
- Extending AMI strategies, approaches and tools to countries in Central America.

In more operational terms, AMI has been essential to reach the following:

- 58% decrease in the number of malaria cases (2000-2011).
- Nine out of 21 countries have reached 2015 Millennium Development Goals target for malaria.
- 13 out of 21 countries have reached or surpassed the 2010 RBM target.
- Only 3 countries have reported an increase in the number of malaria cases (the three NOT AMI countries).
- All original AMI target countries implement evidence based ACT treatment and monitor their efficacy.
- The number of malaria cases treated with ACT went from zero to 238,416 (2000-2009). It has decreased afterwards as a result of the drop in malaria incidence.

The results are not homogeneously positive. Some AMI countries like Guyana, Colombia, Brazil and Peru are reporting focalized malaria reemergence and reintroduction; and malaria incidence in Venezuela (not currently participating in AMI) has also increased along the past years. The recent exclusion of Bolivia may also have a negative impact.

AMI Management

USAID/Peru manages the Amazon Malaria Initiative as part of its regional portfolio and with USAID/Global Health access activities through a field support mechanism (as of October 2013 there is an agreement with the Pan American Health Organization and a contract with a communications organization). The field support mechanism is guided by priority needs in the region and availability of corresponding expertise. AMI has a Steering Committee to ensure coordination and collaboration, which has successfully contributed to improved efficiency and effectiveness in supporting malaria efforts in the region.

¹⁰⁹ AMI Strategy Outline Draft November 2013

Using as reference a multi-year planning framework, all AMI partners prepare annual work plans that are reviewed by the steering committee before they are submitted to USAID for approval. Work plans are organized under the following lines:

- Improving/sustaining monitoring of efficacy of and resistance to antimalarials, and prevent or limit emergence of resistance to antimalarials.
- Improving access to quality diagnosis and treatment.
- Improving quality assurance and control of pharmaceuticals and other supplies for malaria prevention and control.
- Improving vector surveillance and integrated vector management.
- Improving epidemiological surveillance.
- Improving networking and strengthening systems.

Allocation of funds and technical assistance are guided by AMI priorities and countries capacity to implement activities.

PAHO has a preponderant role as an AMI partner; it serves as a channel for AMI support to individual countries, and provides guidance and support not solely to RAVREDA members, but to all countries in the Americas regarding malaria prevention and control. In fulfilling the latter role, PAHO finalized a Strategy and Plan of Action for Malaria in the Americas for 2011-2015 with input from a number of stakeholders, including USAID. The strategy and action plan were presented to and approved by all countries of the Americas in the 51st Meeting of the Directing Council of the Organization ([CD51/11](#)).

Background

THE AMAZON MALARIA INITIATIVE (AMI)

In October 2001 the USAID Latin America and Caribbean Bureau, Office of Regional Sustainable Development (LAC/RSD) launched the AMI. Using a common conceptual framework to select and coordinate activities in priority countries, the initiative is intended to improve malaria control at the sub regional level and help decrease national morbidity and mortality.

The objective of AMI is that “malaria control programs in the Amazon Basin sub region substantially incorporate selected best practices.” The anticipated results are that:

- Reliable and standardized surveillance information on malaria drug resistance will be used to monitor trends and more effectively target disease control efforts;
- Laboratory diagnosis of malaria will be improved;
- Tools and approaches like rapid diagnostics and bed nets will be adapted, tested in local settings, and disseminated; and
- Vector control, especially insecticide resistance, will be studied.

USAID launched AMI as the mechanism for focusing its financial and technical resources in support of the RBM partnership in Latin America and to promote coordination of efforts among all partners in the region through RAVREDA. An initial technical group met in Santa Cruz, Bolivia, in March 2002 that included representatives from RAVREDA (Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela), CDC, PAHO, USAID, and the WHO Headquarters in Geneva. Later the same year AMI incorporated two USAID partners, the MSH/RPM Plus program and the USP/DQI program, into the initiative.

In September 2002 partners began to implement their work plans within a common set of objectives and strategies. The initial aim of the project was to support participating countries in revising antimalarial drug treatment policies based on scientific evidence obtained through drug efficacy trials. In collaboration with

project partners, countries also undertook activities on drug quality assurance, adherence to treatment, and supply chain management. The AMI objectives were modified in 2004 when the activity was extended to incorporate entomology with the aim of promoting integrated vector management¹¹⁰.

Since 2008, AMI has been managed by USAID/Peru as part of its South America Regional Infectious Diseases Program (SARI). The rationale for AMI was the need to invest in targeted activities to improve malaria control in countries in the Amazon Basin from where 88% of reported malaria cases in LAC originated – as reported by PAHO, and, since malaria transmission does not respect political borders, to complement country specific activities with a regional approach to ensure best practices were institutionalized within the health systems¹¹¹.

With AMI, USAID developed and implemented a novel approach that combines complementary sources of technical assistance organized in, and coordinated by, a steering committee. The approach proved more effective and efficient than the more conventional paths to program management¹¹².

The AMI strategy of working within a network of national malaria control programs coordinated by PAHO addresses issues of actual common interest, as opposed to an externally imposed agenda. Collaboration is essentially provided through technical assistance, with a very low proportion of resources going to commodities. AMI has been essential to the development of the most functional existing network of national malaria control programs worldwide. In addition to consistent and continuous participation of all Amazon member countries since 2002 (except for Venezuela and Bolivia, which have not participated for reasons external to AMI), the network also includes 5 Central American countries (Belize, Guatemala, Honduras, Nicaragua and Panama)¹¹³.

On the technical side, AMI has had a comprehensive vision of and approach to malaria prevention and control. Nonetheless, its initial purpose was to gain the evidence to support the introduction of Artemisinin-based combination therapy (ACT) for falciparum malaria in all Amazon basin countries, and to improve the access to malaria diagnosis and its quality. All countries participating in RAVREDA have modified their official malaria treatment regimens to more effective combination therapies; drug efficacy monitoring continues, and provides ongoing means of detecting new forms of resistance¹¹⁴.

AMI has also provided support for training of microscopy technicians of several AMI countries, whose performance improved following training. AMI also led the development of guidelines and recommendations for improving diagnostic QC/QA systems in the Amazon Basin sub region. To facilitate the implementation of these guidelines, AMI engaged in technical collaboration and provided funding for a number of activities in partner countries, including training; efforts to introduce proficiency testing as a component of diagnostic QC/QA systems; and efforts to improve the efficiency of diagnostic performance monitoring¹¹⁵.

¹¹⁰ Terrell S, Brenner P. (2007). External evaluation of the Amazon Malaria Initiative and South America Infectious Disease Initiative. Washington: The QED Group, LLC, CAMRIS International and Social & Scientific Systems, Inc. to the United States Agency for International Development under USAID Contract No. GHS-I-00-05-00005-00.

¹¹¹ Najera J, Zimmerman R, Schmunis G. (2012). External Evaluation of the Amazon Malaria Initiative (AMI) and the Amazon Network for the Surveillance of Resistance to Antimalarial Drugs (RAVREDA). Washington DC: of USAID/Peru, under the terms of Award No. 527-A-00-08-00026-00. Grant between USAID and PAHO/WHO Amazon Malaria Initiative (AMI) and South American Initiative for Infectious Diseases (SAIDI).

¹¹² Najera J, Zimmerman R, Schmunis G. (2012). External Evaluation of the Amazon Malaria Initiative (AMI) and the Amazon Network for the Surveillance of Resistance to Antimalarial Drugs (RAVREDA). Washington DC: of USAID/Peru, under the terms of Award No. 527-A-00-08-00026-00. Grant between USAID and PAHO/WHO Amazon Malaria Initiative (AMI) and South American Initiative for Infectious Diseases (SAIDI).

¹¹³ Najera J, Zimmerman R, Schmunis G. (2012). Op cit.

¹¹⁴ Najera J, Zimmerman R, Schmunis G. (2012). Op cit.

¹¹⁵ Najera J, Zimmerman R, Schmunis G. (2012). Op. cit.

Until 2011, AMI supported monitoring of efficacy of ACTs in the region found no evidence of resistance to ACT. During 2012, as a result of AMI supported monitoring of the efficacy of antimalarials, Suriname and Guyana reported an increase (to above 10%) in parasitemia in day three after treatment, an early sign of emerging resistance to ACT. AMI promptly responded by convening experts from WHO, PAHO, CDC, and USAID to an informal consultation meeting to examine the situation; and co-organizing with PAHO a workshop with the participation of representatives for Guyana Shield countries and Brazil, to outline the response strategy and immediate actions plan¹¹⁶.

AMI has also helped to strengthen malaria diagnosis, covering both microscopy diagnosis and rapid diagnostic tests (RDTs). Noteworthy achievements include the rational introduction of RDTs, the establishment of two networked systems for external evaluation of performance in microscopy diagnosis (one for Amazon and the other for Central American countries, for which the Peruvian and the Honduran national laboratories serve as reference nodes), and the assessment of the frequency of HRP-2 deletion in *P. falciparum* strains circulating in the countries (found to be of up to 40%) which has given place to recommendations on the selection of RDTs and on initiating the monitoring of HRP-2 deletion in the region¹¹⁷.

Regarding vector surveillance and control, AMI promotes integrated vector management. Within this framework, AMI has helped improve vector surveillance systems, introduced the bottle method for assessing vector susceptibility to insecticides, as well as different types of tests for evaluating the efficacy and durability of long lasting insecticide treated nets¹¹⁸.

The region has areas with moderate-low or low malaria transmission, and areas with no transmission but remaining at risk. AMI responds to these changes by supporting countries to have strategies for appropriately addressing each of these epidemiological profiles. Toward this end, AMI prepared strategic orientation guidelines on the optimum ways to combine use of tools available in each area of malaria prevention and control in areas with different transmission levels¹¹⁹.

Another factor is that all AMI countries have advanced in the decentralization of their health sectors and/or the integration of malaria control programs with other health services. Malaria control programs formerly managed vertically with independency from health services have lost structure and resources that ensured the implementation of their specific activities, particularly at sub-national and local levels; and increasingly depend on other systems beyond their control (e.g. procurement and human resources) to have the resources to be effective. In response, AMI has enhanced a health system perspective in its strategy.

The presence of other donor and technical cooperation agents is rather limited in the Amazon and Central America regions. Arguably, the Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) is the largest source of funds other than countries themselves.

AMI is supportive of other stakeholders investing in malaria prevention and control in the Americas, either via RAVREDA or at least taking RAVREDA as a reference. This seeks to support the implementation of the Strategy and Plan of Action for Malaria in the Americas for 2011-2015 prepared by PAHO (presented in June 2011), as well as programs and activities developed by countries, and decrease the probability of duplication of efforts and of projects and activities diverting from such goals.

¹¹⁶ Najera J, Zimmerman R, Schmunis G. (2012). Op. cit.

¹¹⁷ Najera J, Zimmerman R, Schmunis G. (2012). Op. cit.

¹¹⁸ Najera J, Zimmerman R, Schmunis G. (2012). Op. cit.

¹¹⁹ Najera J, Zimmerman R, Schmunis G. (2012). Op. cit.

Purpose and Use of the Evaluation

The purpose of the performance evaluation of AMI will be to assess the progress made to date in achieving the specific objectives of the results framework in the agreements and review the programmatic, technical and managerial strength and weaknesses of all AMI components.

The evaluation will verify that activities planned and implemented under AMI respond to expected results and lines of work, and collect information on improvements achieved in each of these areas by the countries, and assess progress achieved in each line of work.

Based on the findings, the evaluation will present results achieved to date, document lessons learned and present recommendations that guide the management and implementation of AMI, as well as guidelines for strategic direction if AMI extends beyond 2015.

Regarding AMI, the results of the evaluation will be used to:

- Assess the **effectiveness of the approach used in the design and evolution of AMI** in achieving its expected results while responding to country and regional needs.
- Assess the **progress of AMI toward achieving its expected results**.
- Guide AMI management and implementation.

Evaluation Questions

The performance evaluation is based on evaluation questions about relevance, effectiveness, efficiency, sustainability and use of technical cooperation of AMI. The main evaluation questions are the following:

- Was the design and evolution of AMI effective in achieving its expected results while responding to country and regional needs?
- Was AMI effective in implementing activities?
- Did AMI contribute to countries adequately implementing malaria prevention and control interventions?
- Did AMI contribute to the sustainability of RAVREDA and of malaria prevention and control activities in the countries?
- Was AMI efficient?
- What strategic directions should AMI take if extended beyond 2015?

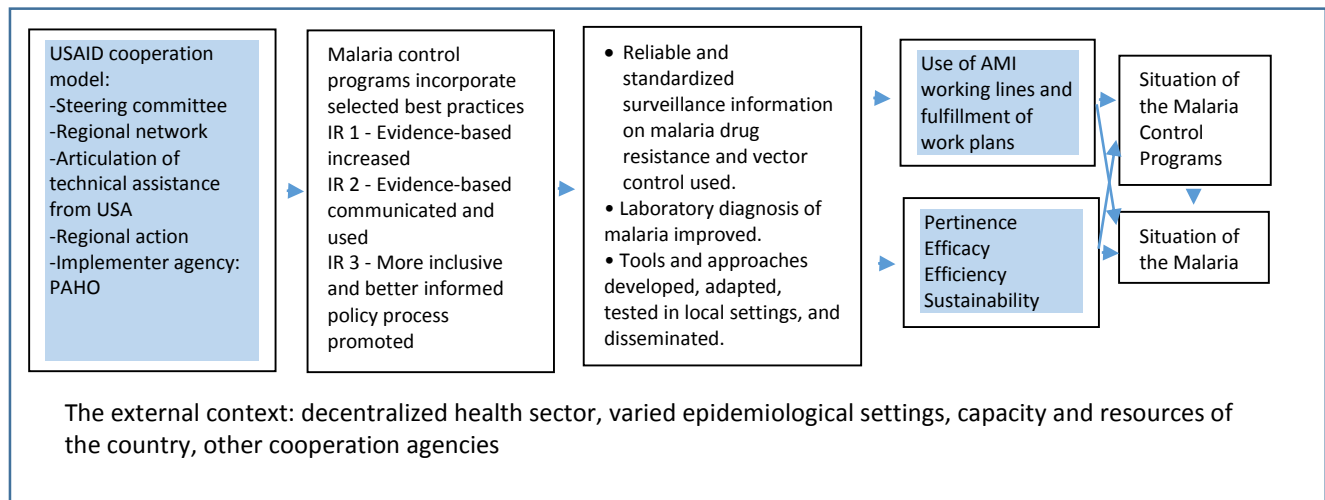
Around each evaluation question a set of more specific questions (sub evaluation questions) has been defined. See Annex A (Evaluation Question Matrix). Each of the questions can be answered using the existing source of information mentioned in the matrix.

Evaluation Methods

Analytical Framework

The performance evaluation of AMI will be made based on the analysis framework that is shown in Fig 1. The evaluation will be directed to determine the suitability and ownership of AMI initiatives and their relevance,

effectiveness, efficiency and sustainability. The evaluation will measure the level of achievement of the objectives and expected AMI results and see how this model of USAID cooperation contributes to the status of control programs and the situation regarding malaria.



The analysis will take into account the external context of AMI, such as decentralization of the health sector, capacity and resources of the countries and the cooperation of other agencies.

Overall design

The AMI's performance evaluation requires the use of quantitative and qualitative methods. By using multiple data sources and methods of analysis the evaluators attempt to obtain more rigorous and robust information. The performance evaluation will use triangulation strategies.

This evaluation will leverage multiple data sources and documentary material as a means to capture a fuller picture of the AMI under study. Both internal and external documentary data about the AMI in the region and the countries should be reviewed and compared for triangulation. Because multiple perceptions clarify meaning and verify the repeatability of an observation or interpretation, having more than one interviewee in a single organization also serves as a form of triangulation.

The performance evaluation includes case studies, analysis of malaria in AMI countries, and analysis of AMI working lines and national malaria control programs in AMI countries.

Case studies

The case studies will use different sources of information, techniques and instruments for collecting information and combine quantitative and qualitative methods.

The case studies will be performed in countries that participate actively in AMI. The selected countries are Brazil, Colombia, Nicaragua and Peru. These countries were selected based on the information provided by AMI/USAID and the malaria epidemiological information. In these countries, there are cases of malaria, they actively participate in RAVREDA, and programs of malaria control are implementing AMI actions. The selected countries have different levels of development, different organization of the health sector and different epidemiological characteristics of malaria. In addition, Nicaragua was selected because in that country the annual meeting of AMI / RAVREDA will be held, and coincides with the time of data collection for this evaluation.

Data collection techniques

In-depth interviews

Evaluators will collect data and conduct interviews which permit a general description of malaria control programs and malaria situation in AMI countries. The researchers will interview key informants from malaria control programs. Informants will be interviewed with a view to gaining a more detailed and deeper understanding of AMI working lines and key issues.

Interviews should take place in a mutually agreed upon locale, typically the interviewee's office. Issues such as interviewer and participant safety, comfort and convenience, participant confidentiality, and background noise should be considered in selecting the interview site.

Interviews are based upon the standard interview templates with optional prompts of follow-up questions. The interview guides are included in this document (Annex B) and intended to provide consistency and coherence in interviews, given that there are country-specific elements that interviewers may want to add or adapt.

Key informant sampling

This study will use two sampling methods:

Purposive sampling: this involves selecting participants on the basis of their characteristics, roles or experiences in order to shed light on a range of issues relevant to research questions. The aim is to interview as diverse a range of individuals as possible.

Snowball sampling: This involves asking interviewees to nominate other people they know who may be willing to participate in the research. This allows researchers to identify and interview key informants who are not known at the start of the research project. Snowball sampling helps researchers collect information on specific issues.

The study's sample size should reflect the number of key individuals who had particular characteristics, roles or experiences that are relevant to the evaluation. The precise number of interviewees is not able to be determined before fieldwork commences since evaluators should use snowball sampling to identify key informants during data collection.

Since the sample will have a diversity of opinion, the evaluators should use a strategy of maximum variation throughout the study to appropriately collect, analyze and present the various viewpoints. This strategy is able to do that if the sample of key informants includes people with different expertise, specialization and possible standpoints on key areas of the AMI.

The evaluation team, together with USAID and PAHO, should build a matrix of the key informants interviewed to ensure an adequate sample of key informants. Informants will be representatives of the malaria control program and multilateral / bilateral agencies in order to obtain different views on the performance of AMI.

The following actors (as a minimum) will be interviewed:

- The person responsible for the National Malaria Programs
- The person responsible for the National Malaria Laboratory
- The person responsible for Entomology
- The person responsible for Epidemiology

- PAHO focal points of the selected countries
- Coordinators of Malaria Global Fund projects in selected countries
- AMI Coordinator at PAHO
- AMI Coordinator at USAID
- AMI coordinators at partner institutions USAID

Instruments

The instruments have a predefined set of key questions to enable the user to capture necessary information (Annex B).

In-depth interviews will be face to face and via telephone or the Web. In all cases, a question guide will be used, which differ only in extent. The question guides will be developed according to each group of informants: officials of control programs for malaria, representatives of AMI partners and representatives of Global Fund projects in malaria.

Interview Summary Sheet

The interviewers should complete an interview summary sheet after each interview, preferably on the day of the interview. This summary includes key informant information and interview details. This form also serves as a checklist of items addressed in the interview and provides an opportunity to reflect on the items included and excluded as well as any outstanding comments and issues in the interview. Therefore, interviewers can build on the comments and thoughts presented in the summary to allow the analysis team to get a concise picture of the context and the content of the interview which would allow the triangulation of information and appropriately address any issue with the field interview team. Moreover, the information in the summary sheet will be used to frame the analysis of the interview data.

Follow-Up interviews

A key advantage of qualitative approaches to interviewing is that it allows issues not originally anticipated by the evaluator to emerge. Repeat interviews with selected individuals are a useful way of exploring these issues, adding further depth to the research, as well as potentially breaking down barriers between the interviewer and interviewee. Follow up interviews should be conducted in cases where the evaluators deem they are useful.

Information processing

The interviews will be recorded in magnetic form, with the consent of the interviewees, then these interviews will be transcribed verbatim. The texts will be systematized according to the study subjects and study group. The analysis will be based on the recognition and description of the perceptions of the respondents, according to the study group, and then move to a comparative and interpretive analysis of the differences in the speeches of the key informants. This process of triangulation is important to increase the credibility and validity of the results.

Interviewers are asked to record their casual and structured observations about the interview as written field notes. The field notes served as running descriptions of settings, people, and activities, and as backup documentation of interviews. Such observations include: verbatim quotes, paraphrases of participant responses, the researcher's questions, pending questions, conclusions, and observations or realizations made after interview. These notes should be taken on standardized forms or field notebooks and recorded on the day of the interview. Ultimately, the field notes provide contextual information that enhances the analysis, teams' understanding of the transcripts and help to triangulate the results.

All transcripts are reviewed in detail by both the interviewer and analysis team; this improves accuracy and clarifies nuances in language.

After completing the data collection phase, extensive case reports will be created with an emphasis on developing descriptive, narrative accounts, which are central to the generation of insight.

With fieldwork complete, the next step is single case analysis, which involves examining the case and themes in order to code and index the data accordingly. To assist with this, AtlasT qualitative analysis software should be used.

A master codebook for the evaluation will be developed and provided to all evaluators. The analysis framework allows the exploration of links between interventions of AMI with the malaria control programs and malaria situation.

Ethical issues

The AMI's performance evaluation will include the following considerations during the data collection phases:

Informed consent. Individuals, ministries and organizations that participated in this research do so voluntarily. Prior to each interview, interviewers inform participants of the nature of the research, the level of confidentiality being maintained, information regarding how interview material will be used, and their rights as participants to end the interview at any time without consequences. Interviewers obtain written consent from each participant; follow-up interviewees will be asked again for their consent. Additionally, each participant is given the option to review his/her transcript before the final case report is drafted.

Confidentiality. Participants are advised about the confidentiality of their interviews. Information about ministries, organizations and individual participants is kept confidential, unless appropriate permission was previously given for its release. Case study data is stored in secure locations that are protected from unauthorized access.

Permission to Quote. The evaluation will not attribute quotes to specific individuals; when quotes are used, they should be attributed in such manner that readers cannot identify the speaker.

Permission for recording. Permission for the electronic recording of case interviews is obtained verbally from the participants at the start of the interview, before turning on recording devices. Participants are advised that, if at any time the participant does not feel comfortable, the recording device could be switched off. Participants are advised that recordings are for AMI program evaluation reports only.

Documentary analysis

Evaluators should review basic AMI documents (Contract USAID / PAHO annual work plans of the countries, reports, previous evaluations, etc.), malaria epidemiological data, information on the status of control programs for malaria, among other documents.

Information will be provided by AMI, partners and key informants in each country. In turn, each evaluator will conduct a web search for relevant information on AMI initiatives and the status of malaria control programs in each country.

Secondary quantitative data complements the qualitative research and provides a concrete means for analysis as well as guidance for the qualitative research by helping generate questions and suggesting new directions.

Checklist to measure the degree of use of the AMI working lines

Checklists will be developed based on regional protocols and guidelines developed by AMI, which will allow the comparison of the degree of use of these documents by the NMCP. The checklists will be made covering three areas i) efficiency and resistance to antimalarials, ii) assurance and quality control of antimalarials c) epidemiological surveillance.

Validity, Generalizability and Reflexivity

Evaluator bias is decreased by having many evaluators; additionally, a different combination of team members is involved with interview collection, data coding and analysis in each country.

Maximum variation is a strategy used in the selection of the initial sample leading to a variety of opinions about AMI; the strategy will also be employed during analysis.

To reduce the effects of reflexivity, standard interview tools have been developed. Interviewers are also reminded to be aware of their biases and stance (for instance as insiders or outsiders, and any resulting from organizational affiliation).

The data and analysis teams serve to examine the reflexivity of the members of teams at each stage of analysis.

Analysis of the epidemiological situation of malaria in countries participating or which have participated in AMI

The objective of this study is to describe the trend of the indicators of incidence and mortality of malaria in countries that are part of AMI and characterize antimalarial drug resistance and insecticide resistance. This task will be led by the evaluation team epidemiologist.

Sources:

Information on the numbers of malaria cases, malaria deaths and cases by type of agent, will be obtained from the World Malaria Report, developed by the World Health Organization¹²⁰.

Information on resistance to antimalarials and insecticides will be obtained from technical publications available on the AMI ¹²¹ website and concurrently a literature search in PubMed¹²², Pubmed Central¹²³, LILACS¹²⁴ and SciELO¹²⁵ will be performed.

Likewise, for the calculation of incidence rates, the population denominator for each country will use the population estimates recorded in the international U.S. Census Bureau ¹²⁶ database.

¹²⁰ http://www.who.int/malaria/publications/year_list/en/index.html

¹²¹ <http://www.usaidami.org/>

¹²² <http://www.ncbi.nlm.nih.gov/pubmed>

¹²³ <http://www.ncbi.nlm.nih.gov/pmc/>

¹²⁴ <http://lilacs.bvsalud.org/es/>

¹²⁵ <http://www.scielo.org/php/index.php?lang=es>

¹²⁶ <http://www.census.gov/>

Indicators:

- Annual trend in number of malaria cases for each country and as a whole. The trend will be developed using data for the period 1990 to 2012, represented by line graphs.
- Trend in the five-year relative differential in the number of malaria cases. This indicator is calculated by the difference in the number of malaria cases between year "5" and year "0", dividing this difference by the number of cases in year "0". Thus, if a negative value is obtained, this will indicate a decrease in the number of cases in both periods. Otherwise, if a positive value is obtained, this will indicate a rise in the number of cases. The trend will be drawn from the period 1990 to 1995 vs 2012 vs 2007, represented by line graphs.
- Annual trend in the proportion of malaria cases by species of the parasite. It will analyze the trend in relative cases by *Plasmodium falciparum* and *Plasmodium vivax*, for each country and as a whole. The trend will be developed from 1990 until 2012, represented by line graphs.
- Annual trend in mortality due to malaria. It will be constructed by calculating the ratio of the number of deaths over the number of cases recorded each year. This indicator will be developed for each country and as a whole. The trend will be developed from 1990 until 2012, represented by line graphs.
- Presence of resistance to antimalarial drugs. The presentation of this information shall be in tabular form, from the extraction of the results of the studies reviewed. In addition, a timeline of these findings will be prepared.
- Presence of insecticide resistance. The submission of such information shall be in tabular form, from the extraction of the results of the studies reviewed. In addition, a timeline of these findings will be prepared.

Information integration: trends of different indicators will be grouped in a single line graph, in which the main AMI activities will be identified. Likewise, countries will be classified according to the evolution of indicators, reflecting this in map form.

Statistical Software

For this analysis the Microsoft® Excel 2010 program will be used. A database and graphics will be made of the indicators for each country. Graphics editing will be done using the Microsoft Power Point 2010® program.

A linear correlation analysis will be used for determining the direction and intensity of the trend indicators, by calculating the Spearman correlation coefficient. This analysis will be used because the distribution of malaria cases and deaths do not follow a normal distribution. The calculation of this coefficient will be performed using the IBM® SPSS 21 program.

The development of maps for the comparison of indicators between countries will be done with the graphics program CorelDraw X6®.

Limitations and Strengths:

The main limitation of the proposed analysis is that it cannot establish a causal link between AMI interventions and the evolution of malaria indicators. The proposed correlation analysis seeks only an overview of the trend.

The strength of the analysis lies in the use of homogeneous data sources, as well as being the official data of the countries provided to WHO for annual reports on the status of malaria.

While some kind of bias might appear in the registration of each country, it is also reasonable to assume that this type of bias is not differential, and therefore the trend measured by the correlation is acceptable.

Analysis of the situation regarding AMI activities and malaria control programs in those countries participating or which have participated in AMI

Data collection techniques

Document Review

Countries: Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Suriname, Venezuela, Panama, Honduras, Nicaragua, Belize and Guatemala.

The evaluators will review documents, reports, products AMI, AMI Plans work in countries, annual work plans of the programs, and other documents of the same programs. Also, the malaria expert will review the documents published by international agencies or organizations such as Roll Back Malaria, Global (both part of WHO) Malaria Program, the Global Fund to Fight TB, HIV and Malaria, PMI (President's Initiative Malaria, etc.). To this end, the malaria expert will conduct a web search and key informant interviews.

Telephone interviews

Countries: Bolivia, Ecuador, Guyana, Suriname, Venezuela, Panama, Honduras, Belize and Guatemala.

The specialist performance evaluation will conduct telephone interviews, Skype or email key informants in countries that will not be visited in this evaluation. The interviewer will use the same questions guide as for the case studies (Annex B).

Key informants:

- The person responsible National Malaria Programs
- The person responsible for National Malaria Laboratory
- The person responsible for Entomology
- The person responsible for Epidemiology
- Focal points of OPS countries

Participatory evaluation workshop

A participatory evaluation will be conducted with representatives of control programs for malaria in all countries belonging to AMI / RAVREDA at its annual meeting to be held in Nicaragua. This meeting will aim to determine the level of implementation of the AMI working lines in each country and gather perceptions on the contribution of AMI and RAVREDA in malaria control in the region.

Limitations

This analysis will be done with the information available on the Web and documents provided by key informants, so this does not ensure that the evaluation report will have information on the status of the interventions promoted by AMI and programs national malaria control in all countries. Similarly, it does not ensure that the representatives of the countries not participating will accept AMI interviews.

Existing performance information

The performance of AMI was evaluated in the years 2007¹²⁷ and 2011¹²⁸.

The evaluation of the period 2002 to 2007 concluded that the quantity, variety, quality of activities and products were very impressive. The initiative had made contributions to partner countries in the areas of malaria treatment, diagnosis, drug management and quality, and entomology. The leading AMI contribution had been the creation of a culture of information-based decision-making that permitted a change to more rational and effective science-based treatment regimens. A further important result is that it created an effective and widely accepted mechanism that cemented a sub-regional approach to using standardized protocols and procedures for solving common problems.

But the evaluation process also uncovered several AMI shortcomings:

- The initiative had not systematically documented its outcomes and success stories,
- Insufficient publication of study results in technical journals.
- Dissemination of information had not been as proactive and current as it should have been.
- There had not been enough focus on policy dialogue and sustainability.

The 2007 Evaluation also made the following recommendations to the AMI Initiative:

1. Maintain the capability to monitor drug resistance during the transition to full implementation of ACT.
2. Design a comprehensive second-generation surveillance model appropriate for this new phase of malaria control with situational criteria and protocols (similar to the vector control manuals) to incorporate, as needed, monitoring of treatment failures; sentinel sites for efficacy studies (focusing on quality rather than quantity); active case detection; access, use, and adherence studies; blood-level studies; in vitro studies (again focusing on quality, not quantity); and molecular markers. Detection and follow-up of treatment failures should be emphasized since some methodologies do not seem to have been fully validated.
3. Provide direct monitoring and accompaniment to maintain the capacity to continue performing resistance studies as needed, and the integrity of sub regional standardized protocols as they are applied in-country. Consider pooled (meta) analyses of sub regional research data.
4. Revise all work plans and report formats to focus on milestones, outcomes, and results. Put less emphasis on activities in project reports and set up an instrument to monitor specific policy instrument outcomes (see the Central American HIV/AIDS Policy Matrix). If possible, take a more strategic view (3 years) with long-range objectives (by region and country) that have verifiable annual milestones. Pay more attention to institutionalization and sustainability by incorporating sustainability milestones into country work plans, including graduation from external support for specific activities.

¹²⁷ Terrell S, Brenner P. (2007). External evaluation of the Amazon Malaria Initiative and South America Infectious Disease Initiative. Washington: The QED Group, LLC, CAMRIS International and Social & Scientific Systems, Inc. to the United States Agency for International Development under USAID Contract No. GHS-I-00-05-00005-00.

¹²⁸ Najera J, Zimmerman R, Schmunis G. (2012). External Evaluation of the Amazon Malaria Initiative (AMI) and the Amazon Network for the Surveillance of Resistance to Antimalarial Drugs (RAVREDA). Washington DC: of USAID/Peru, under the terms of Award No. 527-A-00-08-00026-00. Grant between USAID and PAHO/WHO Amazon Malaria Initiative (AMI) and South American Initiative for Infectious Diseases (SAIDI).

5. Strengthen ties with PAMAFRO and other Global Fund Projects, present and proposed, and 'Organización del Tratado de Cooperación Amazónica' (OTCA), particularly with regard to policy dialogue and impact evaluation of interventions, such as bed nets and community mobilization. Draft and disseminate model policy instruments.
6. Clarify RAVREDA's identity as distinct from AMI (no longer use the term RAVREDA- AMI). Elevate RAVREDA's status and its work by seeking formal recognition of the network through an inter-ministerial agreement. If done in collaboration with OTCA, it could have foreign affairs chancelleries and ministries of health as co-sponsors. Formalize national multisectoral committees and regional or departmental equivalents. Further strengthen RAVREDA's sustainability by helping it to draft proposals in conjunction with local research institutions. Consider adding one or two non-NMP representatives per country to the regional RAVREDA technical committee.
7. Strengthen use of IT for information dissemination including video and teleconferences, interactive web-based forums on specific topics, and distance training. Make the RAVREDA web page more accessible (e.g., rename it "RAVREDA.org"). Develop distance training modules that could add up to a diploma-level course in malaria control.
8. Continue to support acquisition and supply chain management (including pharmaceuticals, lab supplies, and insecticides) to make programs more cost-effective.
9. If resources permit, consider other types of program management training and reinforcement that could increase program efficiency, effectiveness, and sustainability.
10. Incorporate a communications component, similar to the one in SAIDI, to better understand patient and provider behaviors. Design targeted communications strategies for different audiences including advocacy with policy-makers and other stakeholders, the technical and scientific community, and providers and patients. Consider producing economic impact studies.
11. Continue support for development and application of stratification and focalization of control efforts and evaluation of intervention impact by strengthening the epidemiological-entomological surveillance information system to produce more baseline and follow-up data. Pay particular attention to the quality of malaria case detection surveillance data and reporting. Consider doing a pilot intervention of an approach, including community participation and mobilization, that integrates treatment and vector control for a more ecological approach that could also make the program more sustainable.
12. Insist that participants in regional workshops have a clear obligation to disseminate results or replicate training upon their return home.
13. Replicate the AMI sub regional and partnership approaches for malaria control in Central America and possibly other sub regions after reviewing the situational determinants. In Central America, this would go beyond just having the AMI countries providing TA by organizing work areas, e.g. insecticide susceptibility and other studies, under a common template.
14. Ensure proper QC of antimalarial medicines at peripheral sites by training personnel and expanding utilization of minilabs to cover all risk areas. If resources for tuberculosis become available, extend the use of minilabs for monitoring drug quality of anti-TB drugs—taking care not to degrade country capacity to continue monitoring antimalarial drug quality.

The evaluation of the period 2008 to 2011 concluded that the Initiative had continued to make significant contributions to partner countries in the areas of malaria treatment, diagnosis, drug management and quality, and entomology. The 2011 Evaluation concluded that the success of the Initiative has resulted from modest investments; and that USAID's investment in AMI had been both effective and efficient in general terms. AMI achieved its expected results in the countries of the Amazon basin; it has documented the extent of parasite

resistance to antimalarial drugs, proposed and achieved modifications of malaria treatment guidelines and policies, and established a system for monitoring future developments and guide change.

In addition, AMI contributed to:

- improvements in training of malaria microscopy technicians; the development of guidelines and improved quality control of microscopy work; and the establishment of a foundation for a QC/QA and performance evaluation system for microscopy;
- Improvements in storage and distribution systems for drugs and insecticides;
- Development of operational guidelines for the main program activities.

The 2011 Evaluation also made the following recommendations to the AMI Initiative:

1. Efforts should be made to evaluate the impact of introducing insecticide treated mosquito nets, which seem perhaps the most effective vector control intervention in AMI countries. Procurement of long-lasting insecticidal mosquito nets should be based on ecological and socio-demographic characteristics
2. Many countries are routinely collecting a variety of information that is of little or no practical value for making vector control decisions, e.g., data on parity, so countries also need to understand what value additional, more specific variables, might have and when that data should be collected.
3. The same mechanisms influencing AMI/RAVREDA's success in the improvement of malaria case management in partner countries should be revitalized and focused to address major remaining obstacles in malaria control in the sub region. Essential mechanisms of that past success were: the thorough study of the problem at hand throughout the established network of collaborating countries; an open exchange of ideas and experiences energized and supported by an active coordinator; and a periodic joint critical analysis in face-to-face meetings of main stakeholders to review progress and adjust plans.
4. The revival in full force of AMI/RAVREDA is not only feasible and desirable; it should be the most effective and efficient way to attain the best results in the most recent initiatives of AMI/RAVREDA, which appear to have lacked coordination in different countries.
5. There needs to be a strong epidemiological/entomological surveillance system throughout the Amazon area capable of detecting the potential spread of *P. falciparum*, which has not yet reached the Amazon areas of Colombia and Ecuador. GPS should be adopted to address problems or impending risks. The emergence and spread of *An. darlingi* in the Amazon area of Colombia and Ecuador needs to be monitored, given that it may precede the epidemic spread of *P. falciparum*. Monitoring should be implemented in potential points of entry of *P. falciparum* or *An. darlingi*, such as those with significant boat or land traffic between infected areas, new settlements, points of attraction for laborers or exploitation of resources, and others, where sentinel posts could be established.
6. Review approaches to integrate the use of diagnostic facilities for disease case management, including:
7. optimization of case detection systems, concentrating on passive case detection, locality investigations, and fever surveys in the study of outbreaks:
 - addressing the management of malaria-negative cases by i) widening the competence of microscopy technicians to identify other parasites and perform other simple diagnostic tests, e.g., tuberculosis, as is being done in Cruzeiro do Sul, Brazil; as well as stressing quality assurance and performance evaluation of microscopy technicians; ii) improving patient counseling and acceptance within the referral system (hospitals or health centers); iii) review approaches to case management for marginalized and illegal populations.

- Develop realistic guidelines for different operational levels: review existing manuals as sources of material to clarify what each operational group or level should do; review training courses and materials for all technical personnel assigned to malaria programs.

Deliverables and Timeline

The evaluation team shall present the following deliverables, associated with payments advances.

Table a: Contents and schedule of deliverables

Deliverables	Contents	Due date
1	Fieldwork plan of the performance evaluation, sources of information, data collection protocol and tools	3 rd week after start
2	Draft report of AMI's performance evaluation	8 th week
3	Final report of AMI's performance evaluation	10 th week

A review timeline is presented below:

Table b: Timeline

Baseline Tasks		Weeks									
		1	2	3	4	5	6	7	8	9	10
1	Fieldwork plan of the performance evaluation, sources of information, data collection protocol and tools										
	- Define the scope, methodologies, techniques and instruments of the qualitative evaluation.										
	- Prepare the list of key informants to be interviewed by the evaluation team.										
	- Elaborate the analysis plan of the qualitative evaluation.										
	- Develop the matrixes of the documental analysis.										
2	Draft report of AMI's performance evaluation										
	- Interviews Lima/ Iquitos Peru										
	- Visit Brazil										
	- Visit Colombia										
	- Visit Nicaragua										
	- Focus group AMI's Annual Meeting										
	- Telephone/SKYPE/email interviews										
	- Report of the interviews of the performance evaluation developed in Brazil, Colombia, Peru and Nicaragua										
	- Report of the telephone/SKYPE/email interviews										
	- Report of the malaria control programs in AMI countries.										
	- Report of epidemiological analysis of the malaria in the AMI countries										
	- Report of the documentary analysis of AMI										
	Draft report of AMI's performance evaluation										
3	Final report of AMI's performance evaluation										
	Review of the draft report by USAID										



Evaluation Team

The evaluation team shall consist of a Team Leader/Malaria expert/evaluation expert, a Performance Evaluation Expert, Specialist in Performance Evaluation, Specialist in Epidemiology, Expert in Malaria, and Expert in International Cooperation.

Team Leader/Malaria specialist/Evaluation expert. This consultant should have at least 10 years experience designing, implementing and evaluating public health programs in Latin America and Caribbean countries, with expertise in malaria and experience working in USAID projects. The Team Leader should have extensive experience conducting performance evaluations and with experience leading evaluation teams and preparing high quality project reports. He/she should also have a post-graduate degree in public health or an applicable social sciences field. Excellent oral and written skills and fluency in Spanish are required.

As the Team Leader, he/she will provide leadership for the team, finalize the evaluation methodology design, coordinate activities, arrange periodic team meetings, consolidate individual input from team members and coordinate the process of assembling the final findings and recommendations into a high quality document. He/she will be responsible for writing the final report and leading the preparation and presentation of key findings and recommendations to USAID, implementing partners, stakeholders and others.

Performance Evaluation Expert, the qualifications are at least 10 years of experience in performance evaluations. Familiarity with planning, implementation and evaluation of USAID activities is desirable. He/she should have a post-graduate degree in social sciences. Excellent oral and written skills are required and fluency in Spanish.

The specific responsibilities of the expert in performance evaluation are:

- Elaborate the fieldwork plan of the performance evaluation, sources of information, data collection protocol and tools, and analysis plan.
 - Define the scope, methodologies, techniques and instruments of the qualitative evaluation.
 - Prepare qualitative interviews and the list of key informants to be interviewed by the evaluation team.
 - Prepare the analysis plan of the qualitative evaluation.
 - Develop the matrixes of the documental analysis.
 - Develop a proposal for a workshop of evaluation of AMI in the AMI's Annual Meeting in Nicaragua (Meeting of RAVREDA).
- Participate in the elaboration of the SOW of AMI Intermediate Performance Evaluation.
- Interviews in Nicaragua and Brazil
 - Interview key informants MoH, PAHO, regional authorities in Nicaragua and Brazil.
 - Review documents about AMI activities in Nicaragua and Brazil according to the fieldwork plan.
 - Prepare the report of the AMI performance evaluation in Nicaragua.
 - Prepare the report of the AMI performance evaluation in Brazil.
- Write the final report of the interviews of the performance evaluation developed in Brazil, Colombia, Peru and Nicaragua.
- Write the report on achievements, learned lessons and best practices related to AMI based on documental review and the workshop of AMI's Annual Meeting in Nicaragua.

- Participate in the preparation of the final report of the AMI performance evaluation.

Specialist in Performance Evaluation should have experience in program assessment and evaluation methodologies. Familiarity with planning, implementation and evaluation of USAID activities is desirable. He/she should have a post-graduate degree in public health. Excellent oral and written skills are required and fluency in Spanish and English.

The specific responsibilities of the specialist in performance evaluation are:

- Participate in the elaboration of the fieldwork plan of the performance evaluation, sources of information, data collection protocol and tools, and analysis plan.
- Participate in the elaboration of the SOW AMI Intermediate Performance Evaluation.
- Participate in the documental review of the AMI.
- Conduct interviews with key informants in Iquitos.
- Review documents about AMI activities in Peru according to the fieldwork plan.
- Prepare the report of the AMI performance evaluation in Peru.
- Write performance evaluation developed in Peru.
- Conduct telephone interviews with representatives of Malaria Control Programs from countries and AMI partners.
- Write a draft of final report of AMI performance evaluation.
- Participate in the preparation of the final report of AMI's performance evaluation.

Expert in Malaria, the qualifications are at least 10 years experience with malaria/infectious disease program analysis. He/she should have experience in program assessment and evaluation methodologies. He/she should have a post-graduate degree in public health or medicine, with extensive experience in public health aspects of malaria control. Excellent oral and written skills are required and fluency in Spanish.

The Malaria Specialist will participate in the design of the evaluation methodology and all team meetings, conduct interviews with AMI implementing partners and stakeholders and provide key findings and recommendations.

The specific responsibilities of the expert in malaria are:

- Participate in the elaboration of the fieldwork plan of the performance evaluation, sources of information, data collection protocol and tools, and analysis plan.
- Participate in the elaboration of the SOW of AMI Intermediate Performance Evaluation.
- Develop the instruments to interviews and documental review about the technical support of AMI.
- Visit to Colombia
 - Conduct interviews with key informants in Colombia.
 - Review documents about AMI activities in Colombia according to the fieldwork plan.
 - Prepare the report of the AMI performance evaluation in Colombia.
- Situational analysis of the malaria control programs in the AMI countries
- Write report of the malaria control programs in AMI countries.
- Evaluate the pertinence, effectiveness, use and impact of the main products of AMI working lines and write the report.
- Participate in the preparation of the final report of the performance evaluation interviews conducted in Brazil, Colombia, Peru and Nicaragua.
- Participate in preparation of the report of the evaluation workshop of AMI's Annual Meeting in Nicaragua.
- Participate in the report of achievements, learned lessons and best practices related to AMI based on documental review and the workshop of AMI's Annual Meeting.
- Participate in preparation of the final report of the AMI performance evaluation.

Specialist in Epidemiology should have experience in program assessment and epidemiological analysis. He/she should have a post-graduate degree in public health. Excellent oral and written skills are required and fluency in Spanish. The epidemiologist should evaluate the performance of the Amazon Malaria Initiative (AMI) through epidemiologic analysis of the malaria, qualitative techniques and documental review.

The specific responsibilities of the specialist in epidemiology are:

- Participate in the fieldwork plan of the performance evaluation, sources of information, data collection protocol and tools, and analysis plan.
- Interviews in Peru
 - Conduct interviews with key informants in MoH and malaria.
 - Review documents about AMI activities in Peru according to the fieldwork plan.
 - Elaborate the report of the AMI performance evaluation in Iquitos.
 - interviews with key informants from the Ministry of Health and a malarial area
- Epidemiological analysis of the malaria in the AMI countries
- Write report of the performance evaluation in Peru.
- Participate in the preparation of the final report of the interviews of the performance evaluation developed in Brazil, Colombia, Peru and Nicaragua.
- Participate in the preparation of the report on achievements, learned lessons and best practices related to AMI based on documental review and the workshop of AMI's Annual Meeting.
- Participate in the preparation of the final report of the AMI performance evaluation.

Expert in International and USAID cooperation. This consultant should have at least 10 years experience designing, implementing and evaluating public health programs in Latin America and Caribbean countries, with expertise in analysis of International and USAID cooperation. He/she should also have a post-graduate degree in public health or an applicable social sciences field.

The specific responsibilities of the expert in International and USAID Cooperation are:

- Propose the evaluations questions pertinent to the AMI model for cooperation for the in-depth interview discussion guide.
- Review the performance evaluation of AMI (2007, 2011 and 2014), the cooperation needs of the AMI countries (2014 report of evaluation), USAID's Country Development Cooperation Strategies, USAID Policy Framework and USAID's Global Health Strategic Framework for Latin America to provide recommendations either to improve the management of AMI, expanding this form of cooperation to other priorities or its geographic coverage in the Americas or choose another model. PGRD will provide a list of and access to the essential documents needed to carry out the SOW.
- Write report (3 pages) of the analysis and recommendations on the model of USAID cooperation in AMI.
- Time permitting, review and comment on the final report of the AMI's performance evaluation

Reporting and Dissemination

USAID and evaluators will work collaboratively to ensure a high quality of evaluations report expressed in the Evaluation Report Checklist. This tool assesses seventy six (76) factors to ensure high technical quality, a strong executive summary, and the targeting of recommendations for decision-making purposes. The evaluation team will develop the report in accordance with the requirements of this instrument.

The team will submit a preliminary report including findings and recommendations. This report should not exceed 30 pages in length (not including appendices, lists of contacts, etc.). USAID will provide comments and suggestions to the evaluation team which shall be addressed in the final report.

The team will submit a final report which should not exceed 40 pages in length (not including appendices, lists of contacts, etc.). The report will be disseminated within USAID and the AMI partners.

The report will include the findings, conclusions and recommendations. It will be composed of:

- i. general information, including the title page, executive summary and acronyms list;
- ii. body, with an introduction describing the project and the evaluation purpose and methodology; a chapter on findings, conclusions and recommendations; and
- iii. the annexes, which must include the SOW, and a list of documents reviewed.

Before issuing the final report, the evaluation team will present the main findings and conclusions to USAID/Peru staff and implementing partners.

Additional presentations to national or regional authorities shall be planned as required by either USAID /Peru or the implementing partner.

One of USAID's main responsibilities with evaluations is to ensure that they are broadly disseminated--and actively communicated--for learning, program improvement and accountability purposes. Attention must be paid not only to the technical quality of evaluations but to promoting their use and impact.

ANNEX 14: EVALUATION QUESTIONS MATRIX

Criteria and Evaluation Questions

Relevance

Relevance is defined as "the extent to which project objectives are consistent with the priorities of the target group and the policies of recipients and donors ... The value of relevance is, therefore, an inquiry into the usefulness of the project in terms of development, taking into account the various purposes that may be involved around an intervention¹²⁹."

Given this concept, the analysis of relevance will be held in three areas of interest:

- The intervention model of AMI, which will allow the review of the implementation strategy of AMI (networks of countries and technical assistance) in the framework of the specific regional needs of national policies and changes in the context.
- The conceptual framework of AMI. This will reveal how well the AMI design fits the context and, above all, answering questions about the relevance and validity of the objectives of AMI.
- Synergies and articulation of the intervention with other national and regional actions to observe the complementarity of the interventions.

The questions to be answered are:

- Has the AMI model adapted to the changing context and the situation of the disease, especially malaria vivax?
- Has the design and development of AMI responded to national and regional needs?
- Has the AMI model been adapted to the situation of people in special circumstances?
- Is AMI's regional approach the most appropriate for the prevention and control of malaria?
- Are the products and results of AMI consistent with the objectives established in National plans and policies?
- Is the conceptual framework used by AMI the most suitable for the containment of malaria?
- Is there an alternative model to AMI?
- Can the AMI model be replicated?
- Are there synergistic and complementary actions with other interventions?

Effectiveness

It is the "degree to which the project objectives are achieved in a given period, regardless of the costs that it incurs¹³."

The efficacy analysis will analyze the achievements and contribution or attribution of changes in the malaria situation.

The questions to be answered are:

- Has AMI contributed to the prevention and control of malaria in the region?
- Is it possible to attribute changes in the situation of malaria to the intervention of AMI?
- Has AMI helped the PNCM to be efficient and effective?

¹²⁹ Statement of Work. Intermediate performance evaluation of Amazon Malaria Initiative. 2014

- What are the achievements?
- Has the Strategy and Plan of Action for Malaria in the Americas by the year 2011 - 2015 been successfully implemented?

Efficiency. Understood as "relationship between the products and the costs incurred during project implementation, the degree to which an activity produces results at the lowest cost." ¹³⁰

The questions to be answered are:

- How are the regional and national priorities established during the planning process?
- Have there been any modifications to the strategies and planned products?
- What is the degree of coordination achieved between PAHO (and other partners) and PNCM?
- What level of progress has been reached in the achievement of products and outcomes?
- Have the expected products been developed satisfactorily and at the indicated time?
- What are the main factors that have contributed to the progress in the achievement of products and outcomes?
- What are the main factors that have limited the progress in achieving the products and outcomes?
- Is the management of the intervention the most appropriate?

Sustainability

It is defined as "the degree to which the effects and impacts of a project continue after finalization¹³." The extent to which the participating countries have appropriated the different products from AMI.

The questions to be answered are:

- Have the PNCM or other entities of the health ministries with roles in the prevention and control of malaria incorporated the approaches, processes, methods, etc. promoted by AMI with their rules, procedures, practices, etc.?
- Are the AMI products used by the PNCM?
- To what extent can RAVDERA continue to operate independently of AMI's support?
- What should be the strategic direction for AMI if extended beyond 2015?

¹³⁰ PREVAL. FIDA. *Conceptos clave de seguimiento y evaluación de programas y proyectos. Breve guía*

Methodology Matrix

The methodology for the detailed evaluation is located in the following table:

Evaluation Criteria	Evaluation Questions	Methodology		
		Target Groups	Analysis Method	Data Collection Techniques
Relevance	- Has the AMI model adapted to the changing context and the situation of the disease, especially malaria vivax? - Has the design and development of AMI responded to national and regional needs? - Has the AMI model been adapted to the situation of people in special circumstances? - Is AMI's regional approach the most appropriate for the prevention and control of malaria? - Are the products and results of AMI consistent with the objectives established in National plans and policies? - Is the conceptual framework used by AMI the most suitable for the containment of malaria? - Is there an alternative model to AMI? - Can the AMI model be replicated? - Are there synergistic and complementary actions with other interventions?	Key Personnel of the countries: - PNCM Coordinator - Person In Charge of National Laboratory - Person In Charge of Drug Management Division - Person In Charge of Epidemiology - PAHO Point Person - FM Project Coordinator AMI / PAHO Coordinator Coordinators of the partners	Qualitative Analysis	- In-depth Interviews - Document Revision
Effectiveness	- Has AMI contributed to the prevention and control of malaria in the region? - Is it possible to attribute changes in the situation of malaria to the intervention of AMI? - Has AMI helped the PNCM to be efficient and effective? - What are the achievements? - Has the Strategy and Plan of Action for Malaria in the Americas by the year 2011 - 2015 been successfully implemented?	Key Personnel of the countries: - PNCM Coordinator - PAHO Point Person - FM Project Coordinator AMI / PAHO Coordinator Coordinators of the partners	Qualitative Analysis	- In-depth Interviews - Document Revision - Epidemiological analysis of trends in malaria

Evaluation Criteria	Evaluation Questions	Methodology		
		Target Groups	Analysis Method	Data Collection Techniques
Efficiency	- How are the regional and national priorities established during the planning process? - Have there been any modifications to the strategies and planned products? - What is the degree of coordination achieved between PAHO (and other partners) and PNCM? - What level of progress has been reached in the achievement of products and outcomes? - Have the expected products been developed satisfactorily and at the indicated time? - What are the main factors that have contributed to the progress in the achievement of products and outcomes? - What are the main factors that have limited the progress in achieving the products and outcomes? - Is the management of the intervention the most appropriate?	Key Personnel of the countries: - PNCM Coordinator - PAHO Point Person - FM Project Coordinator AMI / PAHO Coordinator Coordinators of the partners	Qualitative Analysis	- In-depth Interviews - Document Revision
Sustainability	- Have the PNCM or other entities of the health ministries with roles in the prevention and control of malaria incorporated the approaches, processes, methods, etc. promoted by AMI with their rules, procedures, practices, etc.? - Are the AMI products used by the PNCM? - To what extent can RAVDERA continue to operate independently of AMI's support? - What should be the strategic direction for AMI if extended beyond 2015?	Key Personnel of the countries: - PNCM Coordinator - PAHO Point Person - FM Project Coordinator AMI / PAHO Coordinator Coordinators of the partners	Qualitative Analysis	- In-depth Interviews - Document Revision - Checklist

ANNEX 15: INTERVIEW GUIDES AND INSTRUMENTS

Guía de Preguntas Para funcionarios del PROGRAMA NACIONAL DE CONTROL DE MALARIA

Datos de la persona entrevistada

Nombre	
Cargo	
Dirección / área	
Institución	
País	
Fecha de entrevista	
Lugar de la entrevista	

Introducción

Leer el siguiente párrafo:

La Iniciativa Amazónica contra la Malaria (Amazon Malaria Initiative - AMI) es un programa regional que se implementa en once países de la cuenca del Amazonas y Centroamérica. AMI se inició en el 2001 con el objetivo principal de prevenir y controlar la malaria. Como modelo de Cooperación consta con el apoyo financiero/técnico y coordinación de la misión de la USAID en Perú. Es implementada por: OPS (funciona como Secretariado de AMI y apoyo técnico principal para RAVREDA), Centros para el Control y la Prevención de Enfermedades de los Estados Unidos (CDC), Programa Rational Pharmaceutical Management Plus de Management Sciences for Health (MSH/RPM Plus), Programa de Información y Calidad de Medicamentos de United States Pharmacopoeia (USP/PQM) y Links Media.

En esta oportunidad estamos realizando una evaluación de desempeño de AMI cuyo propósito será evaluar los progresos en el logro de los objetivos, identificar las fortalezas y debilidades de los componentes, identificar lecciones aprendidas y proponer recomendaciones.

1. ¿Conoce la Iniciativa Amazónica contra la Malaria (Amazon Malaria Initiative - AMI)? ¿Desde cuándo?
2. ¿Cómo ha estado vinculado a AMI en su trabajo?

Estrategia de aproximación para proporcionar asistencia técnica

Leer el siguiente párrafo:

La estrategia de aproximación para proporcionar asistencia técnica de la Iniciativa Amazónica contra la Malaria (AMI) es el trabajo en red de los países de la subregión, el establecimiento de prioridades conjuntas la asistencia técnica especializada de organismos asociados como son la OPS, MSH / RPM Plus, CDC y USP DQI, además de USAID.

3. ¿Considera que esta estrategia de intervención (trabajo en red, establecimiento de prioridades conjuntas y asistencia técnica especializada) es adecuada al contexto de la malaria en su país? ¿y en la región?
4. ¿El enfoque regional de AMI es el más adecuado para la prevención y control de la malaria en la región y en su país? ¿Por qué?
5. ¿Los productos y resultados de AMI son congruentes con los objetivos establecidos en los Planes y políticas nacionales?
6. **Si el entrevistado ha estado vinculado a AMI más de cinco años:** ¿Ha cambiado la estrategia de intervención a lo largo del tiempo? ¿Considera que estos cambios han sido positivos? ¿Por qué? ¿Han respondido a las necesidades de su país y de la región amazónica / Centroamérica? ¿de qué manera?

Otras intervenciones

7. ¿Conoce otras iniciativas regionales? ¿Cuáles?
8. ¿Qué ventajas o desventajas puede identificar de los modelos de cooperación de las otras iniciativas regionales respecto a AMI?
9. ¿De qué manera las acciones de AMI se encuentran complementando otras intervenciones en el país y la región, por ejemplo los proyectos del Fondo Mundial de Lucha contra el VIH/sida, TB y malaria?

Logros

10. En su opinión ¿qué ha significado AMI en su país y en la región?
11. Las intervenciones de AMI han contribuido a mejorar las acciones de prevención y control de la malaria en su país y de la región? ¿Cuáles? ¿De qué manera?
12. ¿Cuáles son los logros más importantes de AMI en su país y a nivel regional?
13. ¿AMI ha contribuido a que los PNCM trabajen en base a evidencias en el monitoreo de la eficacia y resistencia de medicamentos? ¿En qué grado? ¿de qué manera?
14. ¿AMI ha contribuido a que los PNCM trabajen en base a evidencias para mejorar el acceso a los diagnósticos y tratamientos de calidad? ¿En qué grado? ¿de qué manera?
15. ¿AMI ha contribuido a que los PNCM trabajen en base a evidencias para la mejorar la calidad del aseguramiento y control de los productos farmacéuticos? ¿En qué grado? ¿de qué manera?
16. ¿AMI ha contribuido a que los PNCM trabajen en base a evidencias para mejorar la vigilancia de los vectores y el manejo integrado de vectores? ¿En qué grado? ¿de qué manera?
17. ¿AMI ha contribuido a que los PNCM trabajen en base a evidencias para mejorar la vigilancia epidemiológica? ¿En qué grado? ¿de qué manera?

Organización de AMI para su implementación

18. ¿Cómo se establecen las prioridades nacionales y regionales para elaborar los planes de trabajo para AMI?
19. Los PNCM han tenido una voz efectiva en fijar las prioridades y planes de AMI? Si no, ¿Cuál es la razón y como se puede mejorar la situación?
20. ¿Se realizan modificaciones en los planes de trabajo respecto a las actividades y productos programados? ¿Por qué?
21. ¿Cuál es el nivel de avance obtenido para el logro de productos de los planes de trabajo 2011-2015? ¿y de los hitos?
22. ¿Cuáles son los principales factores que han contribuido o limitado al avance en el logro de los productos? ¿Cómo se puede superar estos factores?
23. ¿Tienen un sistema de monitoreo que les permita observar el avance del plan de trabajo?
24. Usted considera que la forma como está organizado el modelo de cooperación de AMI para su implementación es la más conveniente para lograr resultados? ¿por qué? ¿Cómo se puede mejorarlo?.

Sostenibilidad

24. El país y la region ¿podrían continuar ejecutando acciones como las que desarrolla AMI, si no hubiera apoyo de AMI?
25. El entorno político actual (retiro de Venezuela, Bolivia, y Ecuador de AMI) hace viable la estrategia de AMI? ¿Ha afectado la situación de la malaria en estos países y en la región en general?
26. ¿En qué medida RAVREDA podrá seguir funcionando independientemente del apoyo de AMI, luego del 2015? ¿En cuáles otros modelos de cooperación pudieran invertir la USAID y/o otros donantes que serian de igual o mejor eficiencia y efectividad para controlar la malaria en la región?
27. ¿El país podrá contribuir para el funcionamiento de RAVDERA? ¿De qué manera?

Preguntas para Coordinador de PNCM Eficacia y la resistencia a los antimaláricos

1. ¿Considera Ud. que el abordaje estratégico que AMI ha dado a la Vigilancia de la Resistencia a los antimalaricos ha sido apropiada?
2. ¿Considera Ud. que los productos de AMI para la vigilancia de la Eficacia y resistencia de antimalaricos han sido útiles? Cuál considera es la máxima utilidad de estos productos? Cuál es el impacto en el control de la malaria?
3. ¿Considera que es necesario llevar a cabo vigilancia In vitro y vigilancia In vivo tal como lo ha impulsado AMI? Es útil?
4. ¿Ha establecido sitios centinela para la vigilancia continua de la eficacia de los medicamentos? ¿Cuántos? ¿Dónde? ¿Desde cuándo?
5. ¿Utilizó los protocolos estandarizados elaborados por AMI?
6. ¿Ha cambiado las políticas de tratamiento de la malaria siguiendo las recomendaciones de AMI? ¿Desde cuándo?
7. ¿Tal como lo impulsa AMI, se han unido con algún país fronterizo para realizar algún estudio de eficacia in vivo debido en zonas de muy baja incidencia?
8. ¿Ha aplicado las técnicas y metodologías estandarizadas para el uso en la eficacia y la vigilancia de la resistencia a los antimaláricos? ¿Desde cuándo?
9. ¿Ha adaptado los planes para reevaluar los regímenes de tratamiento de la malaria existentes a intervalos regulares de los países?. ¿Desde cuándo?
10. ¿Ha recibido información sobre la distribución y la intensidad de la resistencia del parásito de la malaria y la reducción de la eficacia de los medicamentos antimaláricos? ¿Desde cuándo?
11. ¿Han realizado estudios sobre la resistencia de los antimaláricos? Cuando empezaron? Continúan hasta ahora algunos de los estudios? ¿Siguió las pautas de AMI sobre el tema?
12. ¿De qué manera se mantiene informado sobre los estudios e información producida por AMI? ¿Cómo valora este medio?
13. ¿Cuáles son las necesidades específicas de la región en este tema que requieren asistencia técnica? Y Cuales son las necesidades específicas como programa?
14. ¿Cómo contribuyó el país en este tema para la visión regional?
15. ¿Cómo valoraría el aporte de AMI en este tema?
16. ¿Cuáles son las fortalezas y debilidades de AMI en este tema?
17. ¿Qué recomendaciones tendría en esta línea de trabajo?
18. ¿Cómo valora la asistencia técnica recibida de CDC, OPS? ¿Por qué?
19. La asistencia técnica recibida ¿Ha sido oportuna y de calidad? Comente su respuesta.
20. ¿Las coordinaciones y comunicaciones han sido fluidas?
21. ¿Cómo valora la asistencia técnica entre los países fomentados en el marco de AMI? ¿Ha sido oportuna y de calidad? Comente su respuesta.
22. ¿Considera que AMI debe continuar implementándose? ¿Por qué?
23. ¿Cuáles serían los aspectos que AMI requiere fortalecer, en su opinión, a fin de ganar en efectividad y eficiencia?
24. ¿Qué recomendaciones haría usted para mejorar la forma de trabajo de AMI?
25. ¿Cuáles son las limitaciones que tiene esta línea de trabajo en general?

Lista de chequeo

¿El país cuenta con:	Si	No	Comentarios
Política actualizada para Monitoreo de la Eficacia y Resistencia a los antimalaricos, basado en la evidencia considerando los diferentes situaciones epidemiológicas			
Protocolos Estandarizado y herramientas para realizar la Vigilancia de la Resistencia de los antimalaricos			
Reporte de estudios de Adherencia de los regímenes terapéuticos nuevos para P. vivax			
Informes de cursos de capacitación a nivel local en los sitios centinelas			
Informes ejecutados por los niveles regionales de la Vigilancia de la Eficacia			
Publicaciones científicas realizadas por los equipos del Programa de Control de Malaria, junto con socios de AMI u otros			
Publicaciones de informes realizados en los documentos del Ministerio			
Reportes de los estudios de eficacia y resistencia de los antimalaricos.			

Preguntas para Responsable de Laboratorio Acceso con calidad al diagnóstico y tratamiento
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1. Considera que los laboratorios evaluadores tienen la capacidad suficiente para esta labor?
2. Qué documento producido por AMI y sus socios en esta línea de trabajo ha producido el más alto impacto en el cambio de modalidad de trabajo del programa?
3. ¿Los microscopistas han sido capacitados para mejorar el diagnóstico? ¿Desde cuándo? ¿Considera que las capacitaciones recibidas en el nivel central han llegado con la misma calidad a los niveles inferiores?
4. ¿Han aplicado las directrices y recomendaciones de AMI para la mejora de los sistemas de control de garantía de calidad de diagnóstico? ¿Cómo? ¿Desde cuándo?
5. ¿Cuál considera que es la principal fortaleza del programa de evaluación externa del desempeño para el diagnóstico microscópico impulsado por AMI?
6. ¿Han elaborado políticas sobre tratamiento siguiendo las recomendaciones de AMI? ¿Desde cuándo?
7. ¿De qué manera se mantiene informado sobre los estudios e información producida por AMI? ¿Cómo valora este medio?
8. Poseen como algún programa de capacitación y certificación de microscopistas? Detalle.
9. ¿Cuáles son las necesidades específicas de la región en este tema que requieren asistencia técnica? Y Cuales son las necesidades específicas del programa en su área?
10. ¿Cómo contribuyó el país en este tema para la visión regional?
11. ¿Cómo valoraría el aporte de AMI en este tema?
12. ¿Cuáles son las fortalezas y debilidades de AMI en este tema?
13. ¿Qué recomendaciones daría Ud. a esta línea de trabajo de AMI?
14. ¿Cómo valora la asistencia técnica recibida de USP? ¿Por qué?
15. La asistencia técnica recibida ¿Ha sido oportuna y de calidad? Comente su respuesta.
16. ¿Las coordinaciones y comunicaciones han sido fluidas?
17. ¿Cómo valora la asistencia técnica entre los países fomentados en el marco de AMI? ¿Ha sido oportuna y de calidad? Comente su respuesta.
18. ¿Considera que AMI debe continuar implementándose? ¿Por qué?
19. ¿Cuáles serían los aspectos que AMI requiere fortalecer, en su opinión, a fin de ganar en efectividad y eficiencia? Cuáles son las limitaciones de esta línea de trabajo de AMI?
20. ¿Qué recomendaciones haría usted para mejorar la forma de trabajo de AMI?

Lista de chequeo

¿El país cuenta con:	Si	No	Comentarios
Documento y herramientas para el aseguramiento de la calidad y control de calidad en el diagnóstico de malaria (solicitar una copia electrónica o física)			
Informes del Programa de Evaluación Externa de los Laboratorios de Referencia de los países a cargo de los Laboratorios de Perú y de Honduras			
Informes de Monitoreo de Desempeño (evaluación indirecta) de los Microscopistas en el país			
Reportes de Capacitación de los Microscopistas			

Preguntas para Coordinador de PNCM y Responsable de Gestión de Medicamentos Calidad de los antimaláricos y otros insumos para la prevención y el control de la malaria.

1. ¿Cuál considera Ud. que ha sido la guía más útil y de mayor impacto en el PNCM y por consiguiente en que los pacientes con malaria tengan medicamentos disponibles cuando y donde se necesitan?
2. ¿Han aplicado la metodología descentralizada para monitorear y controlar la calidad de los medicamentos propuesta por AMI? ¿desde cuándo?
3. ¿Han aplicado las Guías de Procedimientos Operativos para la gestión del suministro de antimaláricos?
4. ¿Utilizan laboratorios portátiles para pruebas de calidad de los medicamentos? ¿desde cuándo?
5. ¿Qué opina de la utilidad de la herramienta de conocer los criterios de planificación de suministros en zonas de baja incidencia de casos?
6. ¿De qué manera se mantiene informado sobre los estudios e información producida por AMI? ¿Cómo valora este medio?
7. ¿Cuáles son las necesidades específicas de la región en este tema que requieren asistencia técnica? Cuáles son sus necesidades específicas como programa o unidad de gestión de medicamentos?
8. ¿Cómo contribuyó el país en este tema para la visión regional?
9. ¿Cómo valoraría el aporte de AMI en este tema?
10. ¿Cuáles son las fortalezas y debilidades de AMI en este tema?
11. ¿Qué recomendaciones tendría en esta línea de trabajo de AMI?
12. ¿Cómo valora la asistencia técnica recibida de MSH? ¿Por qué?
13. La asistencia técnica recibida ¿Ha sido oportuna y de calidad? Comente su respuesta.
14. ¿Las coordinaciones y comunicaciones han sido fluidas?
15. ¿Cómo valora la asistencia técnica entre los países fomentados en el marco de AMI? ¿Ha sido oportuna y de calidad? Comente su respuesta.
16. ¿Considera que AMI debe continuar implementándose? ¿Por qué?
17. ¿Cuáles serían los aspectos que AMI requiere fortalecer, en su opinión, a fin de ganar en efectividad y eficiencia?
18. ¿Qué recomendaciones haría usted para mejorar la forma de trabajo de AMI?

Lista de chequeo

¿El país cuenta con:	Si	No	Comentarios
Política de Gestión de suministros para el diagnóstico y tratamiento de Malaria (solicitar una copia)			
Política de tratamiento antimalarico actualizada en base a la evidencia. (revisar en la norma si hay estrategias de garantizar la calidad de los tratamientos considerando los diferentes escenarios epidemiológicos) – (Solicitar una copia)			
Reportes de suministro/ Desabastecimiento de Medicamentos en diversos puntos (lugares donde hay incidencia baja y lugares con incidencia baja)			
Reportes de Stock de Medicamentos para el tratamiento de Malaria para Vivax, fecha de vencimiento y movimiento. Kardex u otros			
Documento de Selección de PDR basadas en los resultados de los estudios de HRP2 y HRP3			
Fichas o formularios de administración de Primaquina en áreas de baja transmisión. En el tratamiento de P. vivax y P. falciparum (excepción es Colombia)			
Fichas o formularios de Seguimiento de tratamiento supervisado			
Fichas o formularios de administración de Primaquina, recetas especiales, etc.			
Preguntar por el protocolo de tratamiento, Si hay alguna cartilla o panfleto que les guie como administrar el tratamiento adecuado			
Panfletos o cartillas que muestren como se debe almacenar los medicamentos en lugares que tengan temperaturas altas			
Informes o reportes de Análisis de medicamentos (Desintegración, Reacciones Colorimétricas o Cromatografía de capa delgada (CCD) – Se verifica en el Laboratorio de Control de Calidad (INVIMA)			

Preguntas para Responsable de Entomología Vigilancia y manejo integrado de vectores
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1. ¿Cuál de los productos o medidas impulsadas por AMI, considera Ud que ha tenido más impacto en la prevención y el control de la Malaria?
2. ¿AMI a través de sus socios ha capacitado y certificado a los trabajadores de control de vectores? ¿cuándo?
3. ¿Han realizado la evaluación de mosquiteros tratados con insecticida? ¿cuándo? ¿Qué tipo de evaluación han realizado? Detalle
4. ¿Han realizado algún mapeo de las poblaciones de anophelinos en su país?
5. ¿Han aplicado la estrategia y las herramientas para la integración de la vigilancia entomológica con la vigilancia epidemiológica? ¿Desde cuándo?
6. ¿Aplican el método de la botella para evaluar la resistencia de los vectores de la malaria a los insecticidas? ¿Otros métodos utilizan actualmente? ¿Desde cuándo?
7. ¿De qué manera se mantiene informado sobre los estudios e información producida por AMI? ¿Cómo valora este medio?
8. ¿Cuáles son las necesidades específicas de la región en este tema que requieren asistencia técnica? ¿Cuáles son las necesidades específicas de área para el control de los vectores?
9. ¿Cómo contribuyó el país en este tema para la visión regional?
10. ¿Cómo valoraría el aporte de AMI en este tema?
11. ¿Cuáles son las fortalezas y debilidades de AMI en este tema?
12. ¿Cómo valora la asistencia técnica recibida de CDC? ¿Por qué?
13. La asistencia técnica recibida ¿Ha sido oportuna y de calidad? Comente su respuesta.
14. ¿Las coordinaciones y comunicaciones han sido fluidas?
15. ¿Cómo valora la asistencia técnica entre los países fomentados en el marco de AMI? ¿Ha sido oportuna y de calidad? Comente su respuesta.
16. ¿Considera que AMI debe continuar implementándose? ¿Por qué?
17. ¿Cuáles serían los aspectos que AMI requiere fortalecer, en su opinión, a fin de ganar en efectividad y eficiencia?
18. ¿Qué recomendaciones haría usted para mejorar la forma de trabajo de AMI?

Lista de chequeo

¿El país cuenta con:	Si	No	Comentarios
Políticas o normas implementadas y actualizadas en el control integrado de vectores.			
Reporte de mapeo de vectores, considerando su comportamiento, densidad, clasificación taxonómica, etc.			
Reportes de manejo de vectores considerando los diferentes escenarios epidemiológicos.			

Preguntas para Responsable de Epidemiología Vigilancia epidemiológica
--

1. ¿AMI ha apoyado al país en la mejora del sistema de vigilancia epidemiológica de la malaria y su integración o articulación con la vigilancia y control de vectores? ¿De qué manera? ¿Desde cuándo?
2. ¿El país tiene estrategias para la vigilancia epidemiológica de la malaria que responda oportunamente a los cambios en las condiciones epidemiológicas?
3. ¿Cuál considera que ha sido la principal utilidad de la vigilancia epidemiológica actual impulsada a través de AMI?
4. ¿El sistema de vigilancia de su país está preparado para responder a los escenarios de brotes, vigilancia centinela de focos calientes, muy baja incidencia, etc.?
5. ¿Poseen un sistema de vigilancia para el control de malaria? O es parte del Sistema Nacional de Vigilancia Epidemiológica? Detalle
6. ¿De qué manera se mantiene informado sobre los estudios e información producida por AMI? ¿Cómo valora este medio?
7. ¿Cuáles son las necesidades específicas de la región en este tema que requieren asistencia técnica?
8. ¿Cómo contribuyó el país en este tema para la visión regional?
9. ¿Cómo valoraría el aporte de AMI en este tema?
10. ¿Cuáles son las fortalezas y debilidades de AMI en este tema?
11. ¿Cómo valora la asistencia técnica recibida de CDC? ¿Por qué?
12. La asistencia técnica recibida ¿Ha sido oportuna y de calidad? Comente su respuesta.
13. ¿Las coordinaciones y comunicaciones han sido fluidas?
14. ¿Cómo valora la asistencia técnica entre los países fomentados en el marco de AMI? ¿Ha sido oportuna y de calidad? Comente su respuesta.
15. ¿Considera que AMI debe continuar implementándose? ¿Por qué?
16. ¿Cuáles serían los aspectos que AMI requiere fortalecer, en su opinión, a fin de ganar en efectividad y eficiencia?
17. ¿Qué recomendaciones haría usted para mejorar la forma de trabajo de AMI?

Lista de chequeo

¿El país cuenta con:	Si	No	Comentarios
Guía de Vigilancia Epidemiológica de malaria (pedir una copia)			
Verificar el sistema de Vigilancia que opciones tiene y si está integrado la vigilancia epidemiológica y la vigilancia vectorial y/o intervenciones			
Reportes de Malaria por país (disgregados por grupo étnico, edad, ocupación, sexo, área geográfica, etc.)			
Formato de Reporte de casos de malaria de los Establecimientos de Salud a la sede Central (verificar si es un formulario de notificación individual o colectiva)			
Protocolos y herramientas de Reporte de Epidemias o brotes de Malaria			

Guía de Preguntas
Para Coordinador de AMI en OPS y socios integrantes de AMI

Datos de la persona entrevistada

Nombre	
Cargo	
Dirección / área	
Institución	
País	
Fecha de entrevista	
Lugar de la entrevista	

Introducción

En esta oportunidad estamos realizando una evaluación de desempeño de AMI cuyo propósito será evaluar los progresos en el logro de los objetivos, identificar las fortalezas y debilidades de los componentes, identificar lecciones aprendidas y proponer recomendaciones.

Estrategia de AMI para proporcionar asistencia técnica

1. ¿Por qué Considera que la estrategia de intervención de AMI (trabajo en red, establecimiento de prioridades conjuntas y asistencia técnica especializada) es adecuada al contexto de la malaria en la región?
2. ¿El enfoque regional de AMI es el más adecuado para la prevención y control de la malaria? ¿Por qué?
3. ¿Ha cambiado la estrategia de intervención a lo largo del tiempo? ¿Considera que estos cambios han sido positivos? ¿Por qué? ¿Los cambios han permitido lograr los resultados esperados? ¿Han respondido a las necesidades de su país y de la región amazónica / Centroamérica? ¿de qué manera?

Marco conceptual de AMI

AMI aplicó un modelo conceptual basado en la hipótesis de que:

- a. *Las medidas de control del vector y el tratamiento en los países vecinos deben armonizarse*
 - b. *Orientación de recursos para las actividades seleccionadas en los países prioritarios a través de un marco común podría mejorar el control de la malaria en el plano subregional.*
 - c. *El establecimiento de una red de vigilancia utilizando técnicas estandarizadas permitiría análisis y comparaciones que a su vez conduciría a medidas más eficaces y coordinadas de respuesta.*
 - d. *Fomentar asociaciones promoverán el aprendizaje entre los países y la movilización de recursos técnicos y financieros para un mejor control de la malaria.*
4. ¿Usted considera que este marco conceptual es el más adecuado para contener la malaria en los países participantes? Por favor, explique.

5. En su opinión ¿se puede enriquecer este marco conceptual? ¿Qué componentes son esenciales para su éxito? ¿Cuáles no son tan importantes? ¿Existen otros componentes importantes que podrían contribuir a su éxito que no han sido considerados?
6. ¿Los objetivos de AMI siguen vigentes?

Logros

7. En su opinión ¿qué ha significado AMI en la región?
8. En su opinión ¿cuáles son los logros más importantes de AMI?
9. Las intervenciones de AMI han contribuido a mejorar las acciones de prevención y control de la malaria de la región? ¿Cuáles? ¿De qué manera?

Modelo de Cooperación de AMI

Now we are going to discuss the **AMI International Cooperation Model**. USAID manages AMI from the Mission in Peru (with support from a Health Officer in USAID/W) to provide technical assistance, training, research and limited equipment and supplies to NMCP through agreements with PAHO, four USAID/W partners: Management Science for Health; CDC, US Pharmacopeia; and a contract with Links Media. Performance and management of the Initiative is reviewed semi-annually by a Steering Committee (SC) consisting of representatives of national partners and the above-mentioned organizations that serves as a strategizing, planning and monitoring mechanism. Most important decisions, progress and challenges are discussed at the semi-annual meeting. Activities are carried out by country-level partners in close coordination with the international partners.

Are you familiar with any other cooperation models for regional projects supported by USAID, the GFATM or some other agency?

If yes which one(s)? Please specify.

What were the comparative advantages and disadvantages of that model relative to AMI?

10. ¿Qué opinión le merece la forma como se establece las prioridades? ¿es la forma más adecuada? ¿Los socios nacionales tienen una voz efectiva en la planificación y la priorización de las actividades previstas en el AMI? ¿podría mejorarse?
11. ¿Cuáles son los principales factores en el modelo de cooperación que han contribuido o limitado al avance en el logro de los productos?
12. ¿Qué ha significado AMI para su institución? ¿Cuántas personas de su institución proporcionan asistencia técnica a los países? ¿Cuál es la dedicación en tiempo? ¿Puede estimar la cantidad de horas / hombre dedicadas el año anterior?
13. ¿Hay responsabilidad mutua (donantes, proveedores de asistencia técnica y socios nacionales) para lograr resultados? Favor explicar.
14. ¿La estructura de AMI es suficientemente flexible, dentro de este marco global de alinearse con el cambio de las prioridades y necesidades regional y del país?

15. ¿Hubo obstáculos para que los socios nacionales que tengan una participación efectiva? ¿Cómo se puede superarlos?
16. En caso afirmativo, ¿cómo se podría modificar el modelo para proporcionar a los socios nacionales una voz más eficaz?

Sostenibilidad

Do the NMCPs and national partners feel "ownership" of the initiative and are they taking a more prominent role?

17. ¿Considera que los países podrán continuar ejecutando acciones como las que desarrolla AMI independientemente del apoyo de AMI?

What can be done to further empower the national partners to take on more of a leadership role

18. El entorno político actual (retiro de Venezuela, Bolivia, Ecuador de AMI) hace viable la estrategia de AMI? ¿Cómo su retiro está afectando la situación de malaria en sus países y en la región en general? Si es un problema, ¿qué soluciones hay?
19. ¿En qué medida RAVREDA podrá seguir funcionando independientemente del apoyo de AMI, luego del 2015?

Recomendaciones

20. ¿AMI debe seguir implementándose? ¿Por qué?
21. ¿Cuáles serían los aspectos que AMI requiere fortalecer, en su opinión, a fin de ganar en efectividad y eficiencia?
22. ¿Qué recomendaciones haría Ud.
 - a. ¿En relación a la estrategia de intervención de AMI?
 - b. ¿En relación al marco conceptual de AMI?
 - c. ¿En relación a los objetivos de AMI?
 - d. ¿En relación a la situación de la malaria en la región?
 - e. ¿En relación a los socios?
 - f. ¿Otros?
23. Finalmente ¿Cuáles son las lecciones aprendidas para un modelo de cooperación regional eficaz y rentable desde AMI, tanto positivo como negativo?
24. ¿Qué recomendación le daría a la USAID para el modelo de cooperación más eficaz y eficiente para su inversión en el logro de las metas y objetivos del AMI, mientras que el fortalecimiento de la propiedad local y la sustentabilidad?

Guía de Preguntas
Para Coordinadores de Proyectos del Fondo Mundial de Lucha contra el VIH/sida,
tuberculosis y malaria

Datos de la persona entrevistada

Nombre	
Cargo	
Dirección / área	
Institución	
País	
Fecha de entrevista	
Lugar de la entrevista	

Introducción

Leer el siguiente párrafo:

La Iniciativa Amazónica contra la Malaria (Amazon Malaria Initiative - AMI) es un programa regional que se implementa en once países de la cuenca del Amazonas y Centroamérica con el apoyo de la Agencia de los Estados Unidos para el Desarrollo Internacional (USAID). AMI se inició en el 2001 con el objetivo principal de prevenir y controlar la malaria. Es implementada por: OPS (funciona como Secretariado de AMI y apoyo técnico principal para RAVREDA), Centros para el Control y la Prevención de Enfermedades de los Estados Unidos (CDC), Programa Rational Pharmaceutical Management Plus de Management Sciences for Health (MSH/RPM Plus), Programa de Información y Calidad de Medicamentos de United States Pharmacopoeia (USP/PQM), RTI y Links Media.

En esta oportunidad estamos realizando una evaluación de desempeño de AMI cuyo propósito será evaluar los progresos en el logro de los objetivos, identificar las fortalezas y debilidades de los componentes, identificar lecciones aprendidas y proponer recomendaciones.

1. ¿Conoce la Iniciativa Amazónica contra la Malaria (Amazon Malaria Initiative - AMI)? ¿Desde cuándo?
2. ¿Cómo ha estado vinculado a AMI en su trabajo?
3. AMI tiene una estrategia de intervención basada en el trabajo en red, el establecimiento de prioridades conjuntas y la asistencia técnica especializada- cree que esta estrategia es adecuada al contexto de la malaria en el país? ¿y en la región?
4. ¿El enfoque regional de AMI es el más adecuado para la prevención y control de la malaria? ¿Por qué?
5. ¿Conoce otras iniciativas regionales? ¿Cuáles?
6. ¿Qué ventajas o desventajas puede identificar de las otras iniciativas regionales respecto a AMI?
7. ¿Conoce los productos y resultados de AMI? ¿De qué manera el proyecto del FM utiliza estos productos? ¿Puede comentar sobre su oportunidad y calidad?

8. ¿De qué manera las acciones de AMI se encuentran complementando las intervenciones de los proyectos del Fondo Mundial de Lucha contra el VIH/sida, TB y malaria?
9. ¿Qué recomendaciones haría Ud.
 - a. ¿En relación a la estrategia de intervención de AMI?
 - b. ¿En relación a la situación de la malaria en el país y la región?
 - c. ¿En relación al monitoreo de la eficacia y resistencia de medicamentos?
 - d. ¿En relación a la mejora del acceso a los diagnósticos y tratamientos de calidad?
 - e. ¿En relación a la calidad del aseguramiento y control de los productos farmacéuticos?
 - f. ¿En relación a la mejora de la vigilancia de los vectores y el manejo integrado de vectores?
 - g. ¿En relación a la mejora de la vigilancia epidemiológica?
 - h. ¿Otro?

Questionnaire on AMI activities to NCMP officials in XIII Annual Meeting of AMI/RAVREDA in Nicaragua (March 11-14 th 2014)

USAID|Evaluations

MIDTERM EVALUATION OF THE AMAZON MALARIA INITIATIVE

Introduction

The Amazon Malaria Initiative (AMI) is a regional program implemented in eleven countries of the Amazon basin and Central America. AMI began in 2001 to prevent and control malaria as the main objective. As a model of cooperation it consists of financial, technical support, and coordination from the USAID mission in Peru. It is implemented by PAHO (which functions as the Secretariat for AMI and primary technical support for RAVREDA); as well as the Centers for Disease Control and Prevention (CDC), Rational Pharmaceutical Management Plus- (MSH / RPM Plus), United States Pharmacopoeia Drug Quality Information Program (USP / PQM) and Media Links.

We want your opinion on the different AMI areas of support and their application in your country. Please complete this brief survey.

Information about person answering questionnaire

Name	
Position	
Institution	
Country	

AREA: DIAGNOSIS AND TREATMENT

Please circle the appropriate

	Available in country		Supported by AMI/ RAVREDA		Period (year) created/ implemented / reviewed	Degree of Implementation 1 = Research / pilot 2 = Training 3 = Technical / Policy Statement 4 = Implementation of the rule / policy 5 = Monitoring and evaluation
	Yes	No	Yes	No		
1. External Evaluation of country Reference Laboratories by Laboratories in Peru and Honduras	1	2	1	2		1 2 3 4 5
2. Performance Monitoring (indirect assessment) of microscopists in the country	1	2	1	2		1 2 3 4 5
3. Standardized protocols for the training of microscopists	1	2	1	2		1 2 3 4 5
4. Policy for treating malaria	1	2	1	2		1 2 3 4 5
5. Management Protocol for primaquine in areas of low transmission in the treatment of P. vivax and P. falciparum	1	2	1	2		1 2 3 4 5
6. Protocol monitoring supervised treatment	1	2	1	2		1 2 3 4 5
7. Standardized protocols for the training of health personnel to provide treatment against malaria.	1	2	1	2		1 2 3 4 5
8. PDR Selection Document based on the results of studies of HRP2 and Hrp3	1	2	1	2		1 2 3 4 5

9 On a scale from 0-5 indicate the extent to which studies / research produced by AMI have served to guide policies / strategies on diagnosis and treatment.

Low					High
0	1	2	3	4	5

10. On a scale of 0-5 indicate to what degree training received from a USAID partner (CDC, MSH, USP, Media Links) has served to guide policies / strategies on diagnosis and treatment

Low					High
0	1	2	3	4	5

11. On a scale from 0-5 indicate the extent to which technical assistance from a USAID partner (CDC, MSH, USP, Media Links) has served to guide policies / strategies on diagnosis and treatment

Low					High
0	1	2	3	4	5

AREA: EFFECTIVENESS AND RESISTANCE TO ANTIMALARIAL

Please circle the appropriate number

	Available in country		Supported by AMI/ RAVRED A		Period (year) created/ implemented / reviewed	Degree of Implementation 1 = Research / pilot 2 = Training 3 = Technical / Policy Statement 4 = Implementation of the rule / policy 5 = Monitoring and evaluation
	Yes	No	Yes	No		
12. Policy of monitoring the effectiveness and resistance to antimalarials taking into considering the different epidemiological situations	1	2	1	2		1 2 3 4 5
13. Standardized protocols for monitoring antimalarial resistance	1	2	1	2		1 2 3 4 5
14. Implementation of sentinel sites for continuous monitoring of drug efficacy	1	2	1	2		1 2 3 4 5
15. Study efficacy and resistance to antimalarials with border countries	1	2	1	2		1 2 3 4 5
16. Report adhesion studies of new therapeutic regimens for P. vivax	1	2	1	2		1 2 3 4 5
17. Reports on training courses locally in sentinel sites	1	2	1	2		1 2 3 4 5
18. Reports of performance monitoring conducted at the subnational level	1	2	1	2		1 2 3 4 5
19. Reports and efficacy studies of antimalarial resistance	1	2	1	2		1 2 3 4 5

20. On a scale from 0-5 indicate the extent to which studies / research produced by AMI have served to guide policies / strategies efficiency and resistance to antimalarials

Low					High
0	1	2	3	4	5

21. On a scale from 0-5 indicate to what degree the training received from a USAID partner (CDC, MSH, USP, Media Links) has served to guide policies / strategies efficiency and resistance to antimalarial

Low					High
0	1	2	3	4	5

22. On a scale from 0-5 indicate the extent to which technical assistance from a USAID partner (CDC, MSH, USP, Media Links) has served to guide policies / strategies efficiency and resistance to antimalarials

Low					High
0	1	2	3	4	5

AREA: ASSURANCE AND QUALITY CONTROL OF ANTIMALARIALS AND OTHER PHARMACEUTICAL PRODUCTS

Please circle the appropriate number

	Available in country		Supported by AMI/ RAVRE DA		Period (year) created/ implemented / reviewed	Degree of Implementation 1 = Research / pilot 2 = Training 3 = Technical / Policy Statement 4 = Implementation of the rule / policy 5 = Monitoring and evaluation
	Yes	No	Yes	No		
21. Supply Management Policy for the diagnosis and treatment of malaria	1	2	1	2		1 2 3 4 5
22. Procurement and logistics systems of malaria medicines and supplies used in the diagnosis	1	2	1	2		1 2 3 4 5
23. Reports / supply shortages of drugs	1	2	1	2		1 2 3 4 5
24. Guide for storing medicines in places with high temperatures						1 2 3 4 5
25. Reports and analysis of drugs (disintegration, colorimetric reactions or thin layer chromatography (CCD)	1	2	1	2		1 2 3 4 5

26. On a scale from 0-5 indicate the extent to which studies / research produced by AMI have served to guide policy / strategy assurance and control of antimalarials and other pharmaceuticals

Low					High
0	1	2	3	4	5

27. On a scale from 0-5 indicate to what degree the training received from a USAID partner (CDC, MSH, USP, Media Links) has served to guide policy / strategy assurance and control of antimalarials and other pharmaceuticals

Low					High
0	1	2	3	4	5

28. On a scale from 0-5 indicate the extent to which technical assistance from a USAID partner (CDC, MSH, USP, Media Links) has served to guide policy / strategy assurance and control of antimalarials and other pharmaceuticals

Low					High
0	1	2	3	4	5

AREA: ENTOMOLOGICAL MONITORING, CONTROL VECTOR INTEGRAL, RESISTANCE TO INSECTICIDES

Please circle the appropriate number

	Available in country		Supported by AMI/ RAVRE DA		Period (year) created/ implemented / reviewed	Degree of Implementation 1 = Research / pilot 2 = Training 3 = Technical / Policy Statement 4 = Implementation of the rule / policy 5 = Monitoring and evaluation
	Yes	No	Yes	No		
29. Policies or standards on integrated vector control.	1	2	1	2		1 2 3 4 5
30. Reports on mapping vectors, considering their behavior, density, taxonomic classification, etc..	1	2	1	2		1 2 3 4 5
31. Vector management reports, considering the different epidemiological scenarios.	1	2	1	2		1 2 3 4 5
32. Reports on the resistance of malaria vectors to insecticides with the bottle method	1	2	1	2		1 2 3 4 5
33. Assessment of insecticide-treated nets	1	2	1	2		1 2 3 4 5

34. On a scale from 0-5 indicate the extent to which studies / research produced by AMI have served to guide policies / strategies on entomological surveillance, integrated vector control and insecticide resistance

Low					High
0	1	2	3	4	5

35. On a scale from 0-5 indicate to what degree the training received from a USAID partner (CDC, MSH, USP, Media Links) has served to guide policies / strategies on entomological surveillance, integrated vector control and insecticide resistance

Low					High
0	1	2	3	4	5

36. On a scale from 0-5 indicate the extent to which technical assistance from a USAID partner (CDC, MSH, USP, Media Links) has served to guide policies / strategies on entomological surveillance, integrated vector control and insecticide resistance

Low					High
0	1	2	3	4	5

AREA: EPIDEMIOLOGICAL SURVEILLANCE

Please circle the appropriate number

	Available in country		Supported by AMI/ RAVRE DA		Period (year) created/ implemented / reviewed	Degree of Implementation 1 = Research / pilot 2 = Training 3 = Technical / Policy Statement 4 = Implementation of the rule / policy 5 = Monitoring and evaluation
	Yes	No	Yes	No		
37. Guide to epidemiological surveillance of malaria	1	2	1	2		1 2 3 4 5
38. Epidemiological surveillance system integrated with vector surveillance and / or interventions	1	2	1	2		1 2 3 4 5
39. Malaria reports by country (disaggregated by ethnicity, age, occupation, gender, geographic area, etc.).	1	2	1	2		1 2 3 4 5
40. Report format on cases of malaria - individual notification form	1	2	1	2		1 2 3 4 5
41. Report format on cases of malaria - collective notification form	1	2	1	2		1 2 3 4 5
42. Protocols and reporting tools for reporting malaria outbreaks	1	2	1	2		1 2 3 4 5

43. On a scale from 0-5 indicate the extent to which studies / research produced by AMI have served to guide policies / strategies on surveillance

Low					High
0	1	2	3	4	5

44. On a scale of 0-5 indicate to what degree the training received from a USAID partner (CDC, MSH, USP, Media Links) has served to guide policies / strategies on surveillance

Low					High
0	1	2	3	4	5

45. On a scale from 0-5 indicate the extent to which technical assistance from a USAID partner (CDC, MSH, USP, Media Links) has served to guide policies / strategies on

Low					High
0	1	2	3	4	5

46. Given the context of malaria in your country and the region, what are the most important issues that you believe should be prioritized for future AMI technical assistance?

Topics related to your country	Topics related to your region

Thank you for your collaboration and help!

Questionnaire on RAVREDA to participants in XIII Annual Meeting of AMI/RAVREDA in Nicaragua (March 11-14 th 2014)

USAID|Evaluations

MIDTERM EVALUATION OF THE AMAZON MALARIA INITIATIVE

Introduction

Your opinion of RAVREDA's role and achievements are important.

Information about person answering questionnaire

Name	
Position	
Institution	
Country	

OPINION OF RAVREDA

Please circle the number that corresponds:

	Very Much in Agreement	Somewhat in Agreement	Not in Agreement nor Disagreement	Somewhat in Disagreement	Very Much in Disagreement
1. Within RAVREDA there are trustworthy relationships to share information and knowledge	1	2	3	4	5
2. RAVREDA serves as a mechanism for mutual learning and capacity building	1	2	3	4	5
3. RAVREDA promotes the formation of alliances between countries	1	2	3	4	5
4. RAVREDA contributes to decision making and problem solving (advocacy) in each country	1	2	3	4	5
5. RAVREDA mobilizes resources	1	2	3	4	5
6. RAVREDA allows members to achieve objectives that would be difficult to reach if working alone	1	2	3	4	5
7. RAVREDA allows a space for new ideas and innovative solutions	1	2	3	4	5
8. RAVREDA shares a common vision	1	2	3	4	5
9. RAVREDA has made significant progress in controlling malaria	1	2	3	4	5
10. RAVREDA relationships are less hierarchical than in other organizations	1	2	3	4	5
11. Within RAVREDA there is a culture of giving and receiving	1	2	3	4	5

Please circle the number that corresponds:

Do any of the following situations occur within RAVREDA:

	Very Much in Agreement	Somewhat in Agreement	Not in Agreement nor Disagreement	Somewhat in Disagreement	Very Much in Disagreement
12. Tries to implement its agenda but there are no committed members	1	2	3	4	5
13. There is a governing body that helps to facilitate, control and dominate	1	2	3	4	5
14. Immediate results are expected	1	2	3	4	5
15. It is too structured and formal	1	2	3	4	5
16. Participation is regulated	1	2	3	4	5
17. There is a horizontal relationship among its members	1	2	3	4	5
18. Achieve consensus among academic institutions and administration	1	2	3	4	5
19. Institutions determine how the organization will take actions and, consequently, determine who the members of the group will be	1	2	3	4	5
20. There are institutional agendas and individual ideologies within RAVREDA	1	2	3	4	5
21. There are negotiation processes of negotiation	1	2	3	4	5
22. There is conflict in the network	1	2	3	4	5

Please circle the number that corresponds

:RAVREDA Strategy use knowledge

	Very Much in Agreement	Somewhat in Agreement	Not in Agreement nor Disagreement	Somewhat in Disagreement	Very Much in Disagreement
23. You use the AMI website frequently	1	2	3	4	5
24. RAVREDA provides access to the most important sources of technical and scientific information for the control of malaria	1	2	3	4	5
25. RAVREDA maintains information in an interactive way as well as permanently	1	2	3	4	5
26. Information shared in RAVREDA is up to date	1	2	3	4	5
27. The technical information shared by AMI / RAVREDA is in Spanish	1	2	3	4	5
28. The information is appropriate for academic audiences	1	2	3	4	5
29. The information is suitable for those who are working in Malaria Control Programs	1	2	3	4	5
30. The information is suitable for those providing services at the local level	1	2	3	4	5
31. When inquiries are made to the experts or facilitators they respond in a timely manner	1	2	3	4	5

32. There are barriers to participate in discussion forums within RAVREDA	1	2	3	4	5
---	---	---	---	---	---

Please circle the number that corresponds:

Network Facilitators:

	Very Much in Agreement	Somewhat in Agreement	Not in Agreement nor Disagreement	Somewhat in Disagreement	Very Much in Disagreement
33. There is a facilitator who maintains and updates information on the web	1	2	3	4	5
34. The facilitator keeps the network alive and detects when there are moments of silence that require immediate intervention	1	2	3	4	5
35. The network facilitator encourages the development of multi-projects or horizontal collaboration among countries	1	2	3	4	5
36. The facilitator monitors agreements and commitments	1	2	3	4	5
37. The facilitator maintains current operating plans and progress reports of the network	1	2	3	4	5
38. The facilitator prepares meetings and virtual meetings effectively	1	2	3	4	5
39. The facilitator conducts periodic network assessments	1	2	3	4	5

40. In the last 12 months please indicate approximately how many RAVREDA communications (telephone calls, email, etc.) you have sent or received?

Communication with:	Information from AMI	New information about malaria (which has not been generated directly by AMI)	Help with coordinating logistical support, requests for assistance, meetings, etc.
	Technical documents (e.g. technical guidelines) and / or scientific		
USAID-Peru (AMI coordinator)			
USAID-Washington			
PAHO Washington			
CDC			
MSH			
USP			
Links Media			
PAHO Belize			
PAHO Brazil			
PAHO Colombia			
PAHO Guatemala			
PAHO Guyana			
PAHO Honduras			

PAHO Nicaragua			
PAHO Panamá			
PAHO Peru			
PAHO Suriname			
NMCP Belize			
NMCP Brazil			
NMCP Colombia			
NMCP Guatemala			
NMCP Guyana			
NMCP Honduras			
NMCP Nicaragua			
NMCP Panamá			
NMCP Peru			
NMCP Suriname			
Other Institutions			

41. In your opinion what are the most important issues that should be addressed in RAVREDA?

Topics at country level	Topics at regional level

ANNEX 16: LIST OF KEY INFORMANTS

No.	Name	Institution	Title
1	Ana Carolina Santelli	Health Ministry – National Malaria Program	General Coordinator
2	Juliana Rossi	Health Ministry – National Malaria Program – National Laboratory (Diagnosis)	National Consultant
3	Márcia Helena Almeida	Health Ministry – National Malaria Program - Director of Drug Management	National Consultant
4	Cássio Peterka	Health Ministry – National Malaria Program - Epidemiology / Epidemiological Surveillance	National Consultant
5	Camila Damasceno	Health Ministry – National Malaria Program - Entomological surveillance / vector control	National Consultant – Point Person for AMI/RAVREDA
6	Marinete Póvoa	Instituto Evrando Chagas	National Consultant
7	Paula Marchesini		Consultant and Advisor of PNCM

Country: Colombia

No.	Name	Institution	Title
8	Pablo Chaparro	National Health Institute - National Public Health Observatory	Professional
9	Julio Padilla	Ministry of Social Protection - Program for Vector-Borne Diseases	National Coordinator
10	Ligia Lugo	National Health Institute - entomology	National Coordinator
11	Nohora Gonzales Beltrán	National Health Institute - Laboratory of Parasitology	Malaria expert
12	Marcela Mendoza Lozano	Colombia Malaria Project - FONADE. Quality Diagnosis Management System	Consultant
13	Yolanda Mosquera	Ministry of Social Protection - Branch Operations Management - Administration Group of Operations and Supply Management	Coordinator
14	Pablo Rincón	National Institute of Food and Drug Monitoring (INVIMA) - National Drugs Laboratory	Official
15	Tomasa Santos Rentería	Villa España Health Post (Quibdó – Chocó)	Responsible for the Point of Microscopy
16	Yenifer Hinestroza	Universidad de Antioquia - MSH	AMI/RAVREDA Project
17	Alberto Tobón	Universidad de Antioquia - Group of Excellence in Malaria Investigations	Contracted by PMC and AMI/RAVREDA activities participant
18	Jeadran Malagón	National Health Institute	Contracted by AMI

Country: Guatemala

No.	Name	Institution	Title
19	Sergio Aguilar	Ministry of Public Health and Social Assistance - National Vector Control Program - Sub malaria program	Person Responsible
20	José Echevarría	Ministry of Public Health and Social Assistance - National Laboratory	National Supervisor

Country: Honduras

No.	Name	Institution	Title
21	Engels Banegas Medina	Ministry of Health - National program for prevention and control of malaria	Director

Country: Nicaragua

No.	Name	Institution	Title
22	Carlos Sáenz	Ministry of Health - Director General of Health Surveillance	Director General
23	Julio Rosales	Ministry of Health - Director General of Health Surveillance - Malaria	National Manager
24	Emperatriz Lugo	Ministry of Health - National Center for Diagnosis and Reference	Head of Entomology
25	Alberto Montoya	Ministry of Health - National Center for Diagnosis and Reference	Responsible for parasitology laboratory
26	Betzabé Rodríguez	Ministry of Health - National Center for Diagnosis and Reference	Point Person PEED Parasitología
27	Sandra Pérez	Ministry of Health - Director General of Medical Supplies	Tech
28	Octavio Chávez	Local Health System of Integral Attention - SILAIS Chinandega	epidemiologist
29	José Alberto Romero	Local Health System of Integral Attention - SILAIS Chinandega	Responsible for vector-borne diseases
30	Martha Guzmán Mayorga	Local Health System of Integral Attention - SILAIS Chinandega	Head of Entomology

Country: Peru

No.	Name	Institution	Title
31	Fernando Martín Clendenes Alvarado	Ministry of Health - DGSP - ESN PyC Metaxenic Diseases	National Coordinator
32	Jorge Escobedo Paredes	Ministry of Health - DGSP - ESN PyC Metaxenic Diseases	Technical Team – ESN Prevention and control of diseases Metaxenic and OTV's
33	Fernando Chapilliquén Albán	Ministry of Health - Department of Epidemiology	Malaria and other vector-borne diseases Surveillance Group Team member
34	Rufino Cabrera Champe	Ministry of Health - Department of Epidemiology	Coordinator of vector-borne diseases group
35	Marlene Flores	Ministry of Health - Directorate General for Environmental Health	Head of the monitoring and control of vectors area
36	Elena Ogosuku	Ministry of Health - Directorate General for Environmental Health	Surveillance and vector control Professional

No.	Name	Institution	Title
37	César Cabezas	National Health Institute	Director
38	Lely Solary Cerpa	National Health Institute - National Center for Public Health	Director General
39	Sonia Gutiérrez	National Health Institute – Malaria Laboratory	Coordinator
40	Nancy Arróspide	National Health Institute - Malaria Laboratory	Professional (ex – coordinator)
41	Hugo Rodríguez	DIRESA Loreto	Director General
42	Cristiam Carey Ángeles	DIRESA Loreto	Deputy Director
43	Carlos Álvarez	DIRESA Loreto - Epidemiology Office	Director
44	Ivonne Navarro Del Águila	DIRESA Loreto - Regional Director of Medicines, Supplies and Drugs (DIREMID)	Person in charge

USAID

No.	Name	Institution	Title
45	Susan Thollaug	USAID – Washington DC - LAC/RDS/HEALTH	Team Leader
46	Jaime Chang Neyra	USAID - Perú - Office of Health and Education	Project Management Specialist
47	Natalia Machuca	USAID – Washington DC - Latin American and Caribbean Bureau	Infectious Disease Advisor

PAHO

No.	Name	Institution	Title
48	María de la Paz Ade y Torrent	PAHO – Washington DC - Malaria Prevention and Control Neglected, Tropical and Vector Borne Diseases (VT) Communicable Diseases and Health Analysis (CHA)	Specialist
49	Antonio Hegar	Representation PAHO / WHO - Belize	epidemiologist
50	Oscar Mesones Lapouble	Representation PAHO / WHO - Brazil	National Malaria Focal Point (AMI / RAVREDA)
51	Lina Flórez Gonzales	Representation PAHO / WHO - Colombia	Contracted by AMI/RAVREDA
52	José Pablo Escobar Vasco	Representation PAHO / WHO - Colombia	National Malaria Focal Point (AMI / RAVREDA)
53	Adriana Mendoza	Representation PAHO / WHO - Colombia	National Consultant for National drug, health technologies and safe blood Focal Point
54	Gabriela Rey	Representation PAHO / WHO - Colombia	Contracted by AMI
55	César Díaz	Representation PAHO / WHO - Ecuador	National Malaria Focal Point (AMI / RAVREDA)
56	Jaime Juárez	Representation PAHO / WHO - Guatemala	National Malaria Focal Point (AMI / RAVREDA)

No.	Name	Institution	Title
57	Rosa Elena Mejía	Representation PAHO / WHO - Honduras	Malaria Consultant
58	Aída Soto	Representation PAHO / WHO - Nicaragua	National Malaria Focal Point (AMI / RAVREDA)
59	Nicolás Cerón	Representation PAHO / WHO - Panama	National Malaria Focal Point (AMI / RAVREDA)
60	Guillermo Gonzalves,	Representation PAHO / WHO - Peru	Consultant in communicable diseases and health analysis
61	Fernando Llanos	Representation PAHO / WHO - Peru	National Consultant

USAID Partners

No.	Name	Institution	Title
62	Edgar Barillas Romillo	Management Sciences of Health	SIAPS Portfolio Manager
63	Julie N. de Carvalho	Links Media	Senior Project Manager
64	Víctor Pribluda	USP PQM	Manager, Latin American Programs

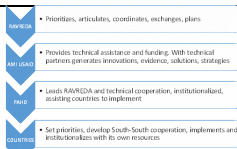
Project of the Global Fund to Fight HIV, TB and malaria

No.	Name	Institution	Title
65	Olga Murillo	Unidad Ejecutora Proyecto FM Malaria (PMC)	Technical Manager
66	Naxalia Zamora	Fundación NicaSalud – Receptor Principal – Proyecto Malaria	Technical Coordinator

ANNEX 17: RESPONSES TO COMMENTS AND SUGGESTIONS FROM PAHO, MSH AND LINKS MEDIA

17.1. Responses from evaluation team to comments and suggestions on final report from Dr. Maria Paz Ade-PAHO WDC

Maria Paz Ade, PAHO	Response from the Evaluation Team
Executive summary	
Suggestion: change amazon basin sub region to initiative to include the Central American ones as well participating since 2008	This suggestion was accepted and changed in the document.
According to our agreement documents the AMI expected results are: 1. Reliable and standardized surveillance information on malaria drug resistance and vector control used to monitor trends and more effectively target disease control efforts. 2. Laboratory diagnosis of malaria improved. 3. Tools and approaches developed, adapted, tested in local settings, and disseminated	We have changed the expected results in the Summary and in the Background of the report
<i>"Between 1990 and 2001 the incidence of malaria changed from 3.76 to 3.02 per thousand, while in the period (2002-2012) corresponding to the implementation of AMI, a significant decline is witnessed, from 2.75 to 1.19 per thousand."</i> Are those numbers regional incidences? Source? According to our data base the numbers are: 5.22 and 4.86 (1990 and 2001), 4.47 and 2.32 (2002 and 2012)	The calculated incidence uses the data of malaria cases from the WHO World Malaria Report (2013) and the denominator is the population of the country. We asked WHO and PAHO to please send us information on cases of malaria at the subnational level for calculating IPA; but we were informed that they could not do this because they were preparing a paper with that information.
<i>"Currently AMI is supporting to a lesser extent the areas of vector control and epidemiological surveillance, and there is no record of technical cooperation to expand health services with the community".</i> Work plans 13-14? Currently almost all of the countries have vector control activities included under LINE OF WORK D: Improving vector surveillance and integrated vector management, also for LINE OF WORK E: Improving epidemiological surveillance. Expanding diagnosis capacity and treatment in remote areas of La Mosquitia is a good example of cooperation to expand health services.....community workers trained, please double check quarterly reports COLVOLS have been included in the work plans in many countries	This finding in the summary and main text has been modified taking into account that the findings of the text if it is shown that AMI has supported activities of vector control and epidemiological surveillance and that AMI is currently supporting some activities in these areas, as well as Community activities.
<i>"AMI does not manage for results or indicators that measure their performance and effectiveness and AMI planning process needs improvement".</i> AMI countries and partners yes, included in the annual work plans.	In the evaluation report, it was considered that to manage for results means setting goals of products and results. AMI has scheduled activities, without a theory of change or goals.

AMI partners have PMP (Performance Management Plans) for AMI.	
<i>"AMI must develop an AMI Performance Monitoring Plan with results indicators, products and principal activities. Indicators should have a data sheet, sources of information and a baseline. The PMP should have an information system that allows the recording, analysis and reporting of monitoring indicators. We recommend a procedure to reduce planning time ". Where is the information requested every 3 months go?.....each partner has a PMP and also we sent information on USAID indicators to be send to DQA.....</i>	Our recommendation is to have an automated monitoring system with indicators and their technical specifications. Indicators should have goals to determine the level of advancement of the products and results of each work area.
<i>"Three countries participating in AMI, voluntarily withdrew due to bilateral policies with the United States. Venezuela withdrew in 2007, Bolivia in 2008 and Ecuador in 2013".</i> Double check with USAID since during last SC meeting we were informed that Ecuador is included until September 30, 2014.	Agreed, we have changed the date of participation for AMI in Ecuador.
Project background	
According to our agreement documents the AMI expected results are: 1. Reliable and standardized surveillance information on malaria drug resistance and vector control used to monitor trends and more effectively target disease control efforts. 2. Laboratory diagnosis of malaria improved. 3. Tools and approaches developed, adapted, tested in local settings, and disseminated	We have changed the expected results in the summary and in the Background
 What's the difference among RAVREDA and countries? Since RAVREDA are the countries..... PAHO also has a key role – AMI secretariat Where are the others technical partners? (CDC, USP, MSH, Linksmedia) Included under AMI/USAID?	The graph was modified. RAVREDA was put along with the countries and technical partners together with AMI / USAID.
<i>Nonetheless, its initial purpose was to gain the evidence to support the introduction of artemisinin-based combination therapy (ACT) for falciparum malaria in all Amazon basin countries, and to improve the access to malaria diagnosis and its quality</i> The initial purpose was to support countries to evaluate the efficacy of and resistance to the antimalarials in use, please review this sentence	This sentence was modified: "Nonetheless, its initial purpose was to support countries to evaluate the efficacy of and resistance to the antimalarials in use, then to obtain evidence to support the introduction of artemisinin-based combination therapy (ACT) for falciparum malaria in all Amazon basin countries, and to Improve the access to malaria diagnosis and its quality ".

<i>“All countries participating in RAVREDA have modified their official malaria treatment regimens to more effective combination therapies; monitoring the effectiveness of and resistance to antimalarials drug efficacy monitoring continues, and provides ongoing results to guide the treatment schemes in participant countries means of detecting new forms of resistance”.</i> This is not true, only the Amazon basin ones modified the treatment after the efficacy trial results showed resistance to cloroquine and a combination therapy based on artemisinine (ACT) was introduced for treatment of <i>P. falciparum</i> only. The Central American ones after implementing in vivo studies demonstrated that cloroquine still efficacious.	This paragraph was removed.																																							
Finding 1																																								
<i>“The AMI objectives are not organized nor do they reference what the PAHO Strategy and Plan of Action goals contribute”</i> This is a contradiction according to stated few paragraphs before and in table 1....	To clarify, the paragraph has been modified as follows: <i>The AMI objectives do not</i> indicate how they contribute, not even in the AMI documents is it indicated how it aligns with the PAHO Strategy and Plan of Action goals.																																							
<i>“Duplication is controlled because the programming and implementation of AMI activities are conducted by the NMCP, with support from PAHO, the existence of similar objectives fails to recognize the specific contribution of AMI or measure their contribution to the goals of the PAHO strategy.”</i> Duplication of what?																																								
Finding 2																																								
<table><tr><td>Country</td><td>AMI Activities</td><td>AMI Objectives</td></tr><tr><td>Bolivia</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Brazil</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Colombia</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Ecuador</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Guatemala</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Honduras</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Nicaragua</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Panama</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Paraguay</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Peru</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Uruguay</td><td>2002-2012</td><td>2002-2012</td></tr><tr><td>Venezuela</td><td>2002-2012</td><td>2002-2012</td></tr></table> Ecuador is still an AMI member until September 30, 2014 - review this with USAID	Country	AMI Activities	AMI Objectives	Bolivia	2002-2012	2002-2012	Brazil	2002-2012	2002-2012	Colombia	2002-2012	2002-2012	Ecuador	2002-2012	2002-2012	Guatemala	2002-2012	2002-2012	Honduras	2002-2012	2002-2012	Nicaragua	2002-2012	2002-2012	Panama	2002-2012	2002-2012	Paraguay	2002-2012	2002-2012	Peru	2002-2012	2002-2012	Uruguay	2002-2012	2002-2012	Venezuela	2002-2012	2002-2012	The asterisk was removed from Ecuador, which indicates that it country was participating in AMI in 2013.
Country	AMI Activities	AMI Objectives																																						
Bolivia	2002-2012	2002-2012																																						
Brazil	2002-2012	2002-2012																																						
Colombia	2002-2012	2002-2012																																						
Ecuador	2002-2012	2002-2012																																						
Guatemala	2002-2012	2002-2012																																						
Honduras	2002-2012	2002-2012																																						
Nicaragua	2002-2012	2002-2012																																						
Panama	2002-2012	2002-2012																																						
Paraguay	2002-2012	2002-2012																																						
Peru	2002-2012	2002-2012																																						
Uruguay	2002-2012	2002-2012																																						
Venezuela	2002-2012	2002-2012																																						
<i>“and no country activities for AMI’s objective 6 are reported: improving the network and systems strengthening.”</i> There are reported activities under PAHO’s quarterly reports as well some activities reported by countries, double check this with USAID	In this evaluation we found no AMI activities for this objective.																																							
<i>“however the implementation of AMI activities in these countries were not launched until 2010”</i> Support has been provided with AMI funds since 2008, double check this	In the report, the start year in Central America was changed: 2008																																							
<i>Table 3. AMI activities in the Amazon basin countries</i>	AMI/PAHO Report, Period 2002-2012																																							

Information time frame?	
<i>Table 4. AMI activities in Central America</i> Example of the importance of time frame for this tables.....during year 1 and 2 Belize implemented activities to strength diagnosis capacity at local level, as well clinical guidelines reviewed and were supported with AMI funds	
Finding 3	
<i>Table 5. AMI achievements and Challenges</i> - <i>Maintain resistance surveillance in sentinel sites, due to low number of malaria cases reported</i> - <i>Expand surveillance in Central America</i> This is for both efficacy of and resistance to antimalarials	The text was changed to: “ <i>Maintain resistance surveillance of efficacy and resistance to antimalarials in sentinel sites, due to low number of malaria cases reported</i> ”
<i>revealed a suspected decreased effectiveness on the third day of treatment with Artemether-lumefantrine malaria in Suriname and Guyana</i> Since quality control problems were observed, and confirmatory studies are underway in those countries.	This comment was added to the text.
Finding 5	
<i>and there is no record of technical cooperation to expand health services with the community .</i> Please review country quarterly reports, an example in la Mosquitia Honduras, training done to expand diagnosis capacity using RDT’s in communities faraway from health services – community workers trained, capacities installed, and detection rates increased in those specific communities with <i>P. falciparum</i> problems, among other interventions	This finding in the summary and main text has been modified taking into account that the findings of the text if it is shown that AMI has supported activities of vector control and epidemiological surveillance and that AMI is currently supporting some activities in these areas, as well as Community activities.
Finding 6	
<i>AMI preferably strengthened capacity at the central level of the countries, with the assumption that trainees will share and disseminate knowledge gained to sub-national levels in the country through a cascade process, although in practice this occurs on a limited basis.</i> Multiple trainings done at national level with participation of human resources from local levels.....see country work plans and quarterly reports.	This finding comes from interviews with key informants in this evaluation.
Finding 7	
<i>PAHO and the countries of the Americas recognizes RAVREDA and AMI as an effective example of the use of best practices for the control of malaria and its collaborative work has been an important contribution to achieving the goals of reducing malaria in partners countries partners: Bolivia,</i>	This paragraph refers to the contribution made by AMI and RAVREDA in reducing malaria in these countries, the same cannot said for the countries of Central America.

<i>Brazil, Colombia, Ecuador, Guyana, Peru and Suriname</i> RAVREDA countries are also the ones in Central America (Belize, Guatemala, Nicaragua, Honduras and Panama)	
<i>Organización Panamericana de la Salud. Gestión de Redes en la OPS/OMS Brasil: Conceptos, Prácticas y Lecciones Aprendidas. / Organización Panamericana de la Salud. – Brasilia, 2008.</i> Verificar fuente igual que la 78	The texts in question were taken from: Pan American Health Organization. Network Management at PAHO / WHO Brazil: Concepts, Practices and Lessons Learned. / Pan American Health Organization. - Brasilia, 2008. http://www.panalimentos.org/rilaa/documentos/Redes_es.pdf
<i>There is a positive perception of the RAVREDA strategy to use knowledge and usefulness of the information produced. Most agree that there is easy access to information, interactive and ongoing information, updated content, appropriate information for researchers, adequate information for control programs, and there is a timely response from experts. Fewer participants frequently use AMI's website (AMI/USAID), and there is limited information in Spanish (Annex 8A).</i> Needs to be clarified that there is the AMI/USAID web site currently maintained by LinksMedia, and also PAHO has a AMI/RAVREDA web site were most of the information produced is uploaded, including meeting reports and presentations. See the following web page: English: http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1988&Itemid=2150&lang=en Spanish: http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1988&Itemid=2150&lang=es	The information has been clarified and the paragraph has been modified as follows: “Fewer participants frequently use AMI's website¹³¹”. The information in the RAVREDA Web page was moved to the next sub-section.
<i>Fig. 14. Exchange of technical information and communications coordination in the past year among participants of the XIII Annual Assessment Meeting AMI / RAVREDA in Nicaragua, March 2014</i> <i>Measurement unit?</i> This graphic do not represent the reality, country programs and PAHO has a great number of interactions OPS/HON doesn't have interaction with HON National Malaria program, as well as the majority countries here, how this can be if the work plans are constructed with them and our	The diagram was based on responses to a questionnaire given to participants during the XIII Annual Meeting of AMI / RAVREDA in Nicaragua - 2014. The questionnaire asked about the communications that the respondent had made last year. We agree that the diagram does not represent reality since not all members of AMI / RAVREDA answered the questionnaire and there may be a recall bias. But it somewhat represents the activity of the network and its members. We are going to move the diagram to the Annex to

¹³¹ <http://www.usaidami.org/>

focal points at country level played a major role on this, were is the connection.....please review this graphic	show as an example of representation of network activity and are recommending its use for monitoring and evaluation of RAVREDA. To this end it would be advisable to monitor the communications that take place in AMI.
Currently, the network has its own page, hosted on the website of PAHO. It is called RAVREDA / AMI and has basic data network and a link to the Amazon Malaria Initiative. See comment #28 I believe the page has more than basic data network	The paragraph was modified as follows: “ <i>RAVREDA has its own page¹³², hosted on the PAHO website were most of the information produced is uploaded, including meeting reports and presentations</i> ”.
Finding 8	
<i>Several members of RAVREDA (Venezuela, Bolivia and Ecuador) are no longer eligible for USAID assistance which makes for a bit of a two-tiered participation in AMI threatening the logic and justification of the regional program as well as having potential implications for the well-being of the countries themselves.</i> Until September 30, 2014 please clarify this with USAID	The paragraph was modified as follows: “ <i>Several members of RAVREDA (Venezuela and Bolivia) are no longer eligible for USAID assistance which makes for a bit of a two-tiered participation in AMI threatening the logic and justification of the regional program as well as having potential implications for the well-being of the countries themselves</i> ”.
<i>to develop new ways to evolve national malaria strategies away from control towards pre-elimination and elimination of the disease.</i> To accelerate actions to reorient national programs towards malaria elimination	The paragraph remains as follows: “ <i>The Global fund has recently authorized \$10 million for a ten country regional initiative spanning Mesoamerica and Hispaniola (EMMIE) to accelerate actions to reorient national programs towards malaria elimination.</i> ”
<i>The countries (Belize, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, Mexico , Nicaragua and Panama) have set a regional goal</i> Mexico is not part of the beneficiary countries; the country will align activities in the south area and will be assisting with technical cooperation as well as Colombia, since both countries shares border areas with the Central American ones.	Mexico was removed from the list of countries.
<i>Fig. 15. Relationship between the country investment and AMI in the number of confirmed cases of Malaria</i> External investment = AMI? Because you mentioned also GF previously.....	The correct Title of the table is: <i>Fig. 14. Relationship between the country and external with the number of confirmed cases of Malaria in AMI countries.</i>
Finding 9	

¹³² English: http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1988&Itemid=2150&lang=en
Spanish: http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1988&Itemid=2150&lang=es

<i>AMI has a results framework that establishes the lines of work and implements a plan of activities that do not set goals or performance indicators to measure the direct contribution of AMI, nor systematic reports documenting program progress. Each partners has a set of performance indicators that we need to comply with, at least PAHO has a PMP</i>	This finding was made considering current USAID PMP standards. Consequently, AMI is required to develop its theory of change, outcome indicators and results with goals and technical specifications for each indicator according to USAID policy. http://usaidprojectstarter.org/content/pmp-performance-management-plan
<i>Planning for each country does not follow a uniform format and does not include indicators and targets (Appendix 10A). There is a template in Excel with no instructions and each country makes special adaptations, in some cases requesting funding for activities that cannot be financed by AMI.</i> All country work plans follow the same format, please see previous reports indicators and targets are based at regional levels, the lines of work in each country are oriented to achieve the target sets. All country work plans are the same format and the secretariat takes extra time to translate them to English for the partners. The instructions are sent with the forms every year for the planning processes. Please review this documents	This finding is supported in Annex 10A
<i>AMI does not have a Performance Monitoring Plan or operationalized</i> Each partner has a PMP for AMI.....	This finding was made considering current USAID PMP standards. Consequently, AMI is required to develop its theory of change, outcome indicators and results with goals and technical specifications for each indicator according to USAID policy. http://usaidprojectstarter.org/content/pmp-performance-management-plan
<i>The scope of the work plans of the countries is at the national level, there are no activities planned for multilateral activities. Work plans of the partners respond to a purely national perspective. AMI country work plans have been supporting activities at the border areas among different countries, and communities with various stakeholders. Guyana Shield activities; Honduras-Nicaragua border activities; Panama- Colombia border areas among others.....</i> There are exceptions, trainings are done as well with department and local personnel per example.....	We understand that activities are carried out in border areas, however we recommend that a specific plan is carried out with outcome indicators for these activities.
Recommendation 1	
<i>joint purchasing of malaria supplies and medicines</i> Specially, for severe malaria cases due to the small amounts needed and lack of providers in the Region.	The joint purchase of medicines has been rated as a best practice in this evaluation and this comment is part of our arguments in Finding 5.

Recommendation 2	
<i>RAVREDA has great potential to further contribute to the control of malaria in the Region of the Americas if it is part of the Strategy and Plan of Action Plan for Malaria in the Americas and whether evidence management procedures are implemented. These actions strengthen a lot of the work done in PAHO countries; institutionalize RAVREDA as part of PAHO and the joint technical cooperation in malaria, and formal mechanisms and countries' own resources that are currently used to implement the AMI lines of action.</i> RAVREDA are PAHO member countries, and those countries are aligned to the Strategy and Plan of Action for Malaria in the Americas. RAVREDA as their name indicates was built to do antimalarials resistance surveillance, since then the network = countries are the ones implementing the AMI activities	NMCP Network, now called RAVREDA, can further contribute to the control of malaria in the Region of the Americas if the functions are expanded and institutionalized in PAHO as a mechanism to implement the Strategy and Plan of Action for Malaria in the Americas.
<i>Currently, the network is not the means to implement the Strategy and Plan of Action Plan for Malaria in the Americas</i> The Strategy is implemented by the countries.....	True, the countries implement it; but our proposal is that the network is a mechanism to implement the Strategy and Plan of Action for Malaria in the Americas (SPAMA). Accordingly, in the SPAMA it should be noted that the annual planning, monitoring the progress of SPAMA and situational analysis of malaria and malaria control programs be held in the Network once or twice a year.
<i>RAVREDA is not considered a space to make decisions or solve problems of malaria control program management.</i> AMI/RAVREDA meetings have been used to analyze and make decisions to orient malaria actions including control program management in some aspects	The interviewees responded that it is not considered a place to make decisions, however based on the comment, we could verify that decisions are made and then implemented in the countries. We have modified the paragraph as follows: RAVREDA is not considered by respondents as a place to make decisions or solve problems of malaria control program management.
<i>(EVIPNet) networks in 2005.</i> EVIPNet in the Americas: http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1476&Itemid=3650&lang=en	The report can be found by clicking on the link.
Recommendation 3	
<i>The standardized API seeks to establish a comparable situation with regard to the intensity of case finding, adjusting the calculation of API at the annual rate of blood tests (annual blood examination rate - ABER) and slide positivity rate (slide positivity rate - SPR).</i> Not recommended in the actual situation of the majority of the countries	Agreed. This recommendation was removed.
<i>Conduct surveys of parasitemia for the proportion of asymptomatic patients with very low</i>	Yes, although it would be necessary to develop a protocol to establish the criteria and use. The paragraph is as follows:

<i>parasitemias. Currently there are several research studies conducted in isolation and punctual. It is Did you meant conduct blood surveys? To analyze the prevalence of asymptomatic cases in a certain population?</i>	<i>Conduct surveys of parasitemia for the proportion of asymptomatic patients with very low parasitemias in priority malaria areas.</i>
Recommendation 4	
<i>The knowledge of the limitations faced by the regions is essential to estimate the resources necessary to expand the coverage of effective interventions and strategic decision making about the forms of delivery, sequence of actions and level of expansion of the services.</i> Subregions? Region of the Americas? Or regions in the countries? Please clarify.....	It is referring to the restrictions in the local, sub-national or national territories. The paragraph has been modified: <i>"The decentralized management requires knowing what is the restriction and the extent to which this restriction may be eliminated or reduced¹³³ (Fig. 16). The restrictions of a local and national government to implement an effective intervention or expand the coverage of services may be grouped into: i) management and organization; ii) management of human resources; iii) management of critical supplies; iv) management of information; v) management of current budget; vi) management of investment. The knowledge of the limitations faced by the local authorities, sub-national or national is essential to estimate the resources necessary to expand the coverage of effective interventions and strategic decision making about the forms of delivery, sequence of actions and level of expansion of the services. The decentralized management will require the strengthening of health care systems and the provision of more resources to the health sector, taking into account the restrictions typical of each territory."</i>
<i>Generate evidence in regards to transmission risks.</i> Of what? Malaria practices or activities, best practices, best approaches.....	The paragraph has been modified: <i>Generate evidence in regards to best practices, best approaches, operational research and studies in regards to bottlenecks or restrictions.</i>
<i>Assess the relevance and financial viability of involving other PAHO offices and other partners to develop technical cooperation for the development of these solutions.</i> Solutions or actions?	Solutions and Actions
Recommendation 5	
<i>R5: Implement a performance management monitoring and AMI evaluation</i> Some comments already highlighted in previous sections, since AMI partners had developed PMP requested by USAID..... as part of the M&E framework	AMI requires that to develop its PMP, it must include theory of change, outcome indicators and results with goals, and technical specifications of each indicator according to the USAID guidelines. http://usaidprojectstarter.org/content/pmp-performance-management-plan

¹³³ Velasquez A. (2011). Report on the model of decentralized management for selected national health priorities, including activities performed and recommendations for their implementation. Lima: USAID|PERU|Políticas en Salud Project, financed by the United States Agency for International Development (USAID) under contract No. GHS-I-10-07-00003-00.

<i>Planning has no performance indicators for regional goals</i> Same as previous comment	
<i>Develop an AMI Performance Monitoring Plan</i> Partners already have PMP for AMI.....	
<i>The proposed plan of each country is developed within the constraints of PAHO focal point and is registered in the Web application. PAHO, AMI, and WDC make comments to each of the countries plans (estimated a month time).</i> One of best practices is the construction of the work plans with the participation of national stakeholders according to their needs and special circumstances.....	The paragraph was modified as follows: <i>"The work plans start with the participation of national stakeholders according to their needs and institutional organization.. The proposed plan of each country is developed within the constraints of PAHO focal point and is registered in the Web application. PAHO, AMI, and WDC make comments to each of the countries plans (estimated a month time)."</i>
ANNEX 1 B	
<i>ANNEX 1B. Consistency between Goal 2 of PAHO's Strategy and Plan of Action Plan against for malaria in the Americas, 2011-2015 and AMI activities for 2012-2015</i> <i>Ensure that countries have policies for evidence-based selection of vector control interventions and adequately implement, monitor, and evaluate them.</i> This also is directly related to sustainability of human resources (2.3) to adequately implement you need personnel trained and this is something done under AMI/RAVREDA work plans	It is possible, but is recommended to have an objective with clear and specific goals.
<i>ANNEX 1C. Consistency between Goal 3 of PAHO's Strategy and Plan of Action Plan against for malaria for diagnosis and treatment in the Americas, 2011-2015 and AMI's objectives and activities for 2012 to 2015</i> Objective 3.3. of the SPAMA corresponds with the objective of AMI: Ensure countries adopt and implement strategies to guarantee Access to early, quality malaria diagnosis and treatment, considering different epidemiological situations. As an example: increased access to diagnosis and treatment through implementation of RDT's in remote areas of various countries, human resources at local level (including community workers) trained	Agreed
Annex 1D.	
Objective 4.2. of the SPAMA corresponds with the objective of AMI: "Strengthening networking among countries in the Amazon region and Central America for the Exchange , dissemination and/or discussion of information, experiences, etc. relevant to malaria surveillance, prevention and control at sub-regional and country levels, and for	Agreed

promoting and facilitating South-South cooperation". Blood surveys studies done in conjunction with the Neglected and Infectious Diseases program at PAHO to analyze prevalence of STH and malaria in children (school age) done in Honduras and El Salvador, using AMI/RAVREDA tools.	
Annex 4A	
<i>ANEXO 4A. Activities implemented by the countries and supported by AMI for monitoring the efficacy effectiveness and resistance to antimalarials</i> See WHO Global Report on Antimalarial drug efficacy and drug resistance 2000-2010, also recently published reports http://www.ncbi.nlm.nih.gov/pubmed/23458957 same as previous comments, Ecuador and Perú as well Guyana and Suriname have information on efficacy of or resistance to antimalarials see WHO document or the following link: http://www2.paho.org/hq/dmdocuments/2011/Ta bla_estudios_in_vivo_AMI_RAVREDA.pdf	Agreed to mark as YES in "Study of Effectiveness and Resistance" in Honduras, Peru, and Ecuador based on the available evidence.
Annex 4B	
<i>ANNEX 4B. Activities implemented by countries and those receiving support from AMI to improve access to diagnosis and treatment of malaria products</i> Ecuador participates in the EQAP for malaria microscopy, and Perú as well and is one of the supranational laboratories.....	Agreed, it was marked as YES in "External Evaluation of Laboratories" for Peru and Ecuador.
Annex 10A	
<i>Annex 10A. Examples of lack of standardization of work plans</i> During the last year all the work plans have been standardized the last one 2013-2014 currently in use is standard for all the countries, perhaps the only difference is the language at country level. Please review 13-14 approved work plans and quarterly reports <i>Revision of first 5 columns:</i> The columns are all the same: Baseline for year 2, "Milestone(s) for year 2", Tasks, Deliverable(s), Total budget, AMI budget for the country, Country budget, Partner(s) in country, Execution date(s), Other AMI partners, involved/type of involvement, AMI budget for other partners,Remarks	It is an observation that has been verified in this evaluation.
Annex 10B	
Annex 10B - Report October 2009 – September 2010 <i>Report prepared by PAHO presents a brief description of AMI and a list of activities organized</i>	Our comments in regards to the report are consistent with the PAHO comments. We appreciate the explanatory information on our findings in the reports of AMI.

<i>according to the themes of the AMI objectives. The objective and (epidemiological surveillance) and 6 (strengthening of networks and systems) is not reported, but included a paragraph of information management. It has no conclusions or recommendations</i> this objective was included in the last agreement 2012-2016 please review previous agreements..... <i>. No mention of objectives 5 or 6, but a paragraph about information management is included. The report does not include conclusions, recommendations or lessons learned.</i> different objectives included, review previous agreements with PAHO, objectives modified for the last cooperative agreement 2012-2016 <i>AMI section presents information about the activities organized by areas and countries, making a reference to the situation in each country before the intervention and progress between 2001 and 2007. Not included in the report are the activities of the objective 6. Contains a section on lessons learned.</i> this objective was included in the last agreement 2012-2016 please review previous agreements..... <i>. Objective 6 that refers to strengthening networks is not reported.</i> same as previous comments	
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B2. Responses from evaluation team to comments and suggestions on final report from Edgar Barillas- MSH

Edgar Barillas - MSH	Responses from evaluation team
I think there is a confusion in the role of RAVREDA: It is the Amazon Network for Monitoring Antimalarial Drug Resistance. While reading the document, you get the impression that it is a kind of technical assistance agency, linked to PAHO that comprehensively supports malaria control in the region of the Americas. <i>("RAVREDA helps to reduce malaria in the Region..."; "RAVREDA is a network of representatives of national malaria programs"; "RAVREDA supports prevention and control....")</i>	The document has stated that RAVREDA is a network of national control programs for malaria and that it is the main mechanism of AMI and PAHO for implementing activities of AMI and the SPAMA. Although RAVREDA began as a network for monitoring resistance to antimalarials, currently their functions have been extended beyond just monitoring. For this reason we are recommending that the network with another name be institutionalized to implement the SPAMA.
The document stresses the contribution of AMI to the reduction of malaria: In AMI meetings it has been argued that it is difficult to establish a causation. With funding from AMI / USAID, MSH tried to document this causation using a theoretical framework that we consider solid. We found that: • The decline in malaria began before the introduction of ACTs (one of the earliest and greatest achievements of AMI). • With few exceptions, the control strategies are not being implemented properly. Without stronger control strategies it is difficult to attribute to (and consequently the technical assistance that strengthens) such causation. This study (available on the WWW and has been published by an international magazine) was a valuable AMI contribution, in improving the control strategies in the region. This study not mentioned by you in the evaluation was taken seriously by Brazil (the country that provides most cases) to make improvements in the performance of the Federal and State Level Control Program.	We agree that you cannot establish a causation, the document only indicates that there is an association. In the report we show a relationship between activities that are supported by AMI in the countries and cases of malaria. This relationship has been highlighted by PAHO in the background section of the Strategy and Action Plan against Malaria 2011-2015 (approved by the Health Ministries of the Americas in the 51st governing council) mentions the contribution of the Amazon Network for the Surveillance of Antimalarial Drug Resistance/Amazon Malaria Initiative (RAVREDA/AMI) in the reduction of malaria in Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru y Suriname from 2002 and in Central America since 2008. Based on the comment from MSH we have included the conclusions of this study to reinforce the finding of this evaluation. <i>"F2: AMI is associated with the decline of the Morbidity from malaria in Latin America and Caribbean"</i> The following paragraph has been added: The study by Flores et al. (2011) ¹³⁴ argues that the introduction of ACTs by the AMI initiative has contributed significantly in reducing malaria in countries that participate in AMI. The ACT strategy completes almost all the technical criteria for implementing the strategy. Whereas the ACT control strategy has been introduced and implemented following a systematic approach and technical guidelines. However, they also found that indoor residual spraying, insecticide-treated bed

¹³⁴ Flores W, Chang J, Barillas E. Rapid assessment of the performance of malaria control strategies implemented by countries in the Amazon subregion using adequacy criteria: case study. Malaria Journal 2011, 10:379

	nets, and the timely diagnosis strategy was implemented with deficiencies.”
3. Lack of visibility of other partners in the report: AMI is essentially a partnership of agencies, who bring their knowledge and particular experience, to contribute to the control of malaria in the region. The document creates the feeling that there is a majority partner and other collaborating partners. In a quick search of acronyms, found 197 references to PAHO, 150 RAVREDA, USP 44, 35 for the CDC and 36 for MSH (in network communication, however, MSH appears as the most relevant actor). In this sense, also call attention to the bibliographic references. With the exception of strategic documents, very few or no reference material is produced under AMI partners, other than PAHO.	The performance evaluation is of AMI as a whole, from the strategy and management mechanisms, the relevance, effectiveness, efficiency and sustainability of AMI and of the technical cooperation model. It was not directed to evaluate the performance of the members, but to assess the achievement of the objectives and identify the main contributions of AMI who were rated by respondents and the documents. Documents supporting those findings and recommendations were reviewed. There are many technical documents produced by the partners that have not been the subject of this evaluation. We selected Technical Guides and Strategic Guidelines of WHO / PAHO who have taken the technical contributions of AMI because it implies that they have been institutionalized at regional level and in the countries.
4. Documentation of effectiveness and efficiency: I recognize the difficulty that this goal raised. Having already commented that it is difficult to attribute to AMI the reduction we see in cases of malaria, I think if it is feasible to document innovative practices that were designed, implemented and consolidated by the Initiative. I think these deserve greater relevance in the document, particularly because they are lessons for other continents. Mention some (again, with my institutional affiliation bias): • Documentation and monitoring of antimalarial resistance: This intervention allowed for the timely detection of chloroquine resistance in South America, continued to rely on its use in Central America and raised the alarm before an eventual resistance to ACTs. Very few networks (and here RAVREDA is worth mentioning) have this record. • The introduction of ACTs in an entire region as a result of these studies: The introduction of new medicines across a region without major drawbacks is one of the greatest achievements of AMI. • The need to work-simultaneously-in high and low incidence scenarios: This issue was analyzed and discussed for the first time within the technical committee of AMI. Strategy documents and operational tools were developed and are now being implemented by various countries. I would say that these	The relevance of the good practices of AMI: 1) Monitoring antimalarial resistance 2) The introduction of ACTs 3) The need to work-simultaneously-in scenarios of high and low incidence 4) Documentation of the ineffectiveness of some rapid tests in the region 5) The organization of a regional monitoring system of antimalarial supply and the joint purchase of antimalarial medicines in bulk In the following findings, the achievements suggested by MSH are highlighted: Finding 2: ACT's contribution is highlighted by comments made by MSH Finding 3: Here the contribution of good practices commented on by MSH are highlighted : <i>“The main achievements of AMI are monitoring the effectiveness and resistance to antimalarials, drug management and improving the quality of diagnosis and treatment”</i> Finding 4: AMI has contributed to the Strategy for Decision Making under the Integrated Vector Management for Malaria Finding 5: AMI/RAVREDA recommended joint antimalarial purchase through the PAHO Strategic Fund has been selected in this report as a good practice.Example: <i>“PAHO also supported by the immediate purchase of medicines for the treatment of severe cases, and facilitates exchanges and donations” ... “AMI developed with MSH and furthermore PAHO is coordinating, where the countries can identify who have over-stocks or</i>

analyses permeated the development of the PAHO regional strategy (not vice versa). • Documentation of the ineffectiveness of some rapid diagnostic tests in the region: of highly complex scientific work, with immediate operational implications • The organization of a regional monitoring system of antimalarial supply and the joint purchase of antimalarial medicines in bulk: Regional Interventions are solving local problems. A true example, in practice, the reason why a regional initiative is necessary	those with shortages, through a quarterly reports shared with participant countries and partners, and published in a community of practice called “antimalarial medicines” hosted in the PAHO’s Regional Platform on Access and Innovation for Health Technologies. On rapid testing, we use it to make an example of the use of the evidence in AMI / RAVREDA.
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16.3. Responses from evaluation team to comments and suggestions on final report from Julie Carvalho – Links Media

Julie Carvalho - Links Media	Responses from evaluation team
- Communication activities and results (e.g. information sharing, social media participants) have been impacted by a two-year lapse in the contract (October 2011-September 2013). Due to lapses in contracts/grant agreements from 2011-2013, other partners' contributions may also have been impacted. - The current work plan for communication demonstrates an evolution of the progress made towards achieving greater engagement and strengthening of the AMI/RAVREDA network.	Agreed. The information verified in the documents and in the AMI communications suggest that Links Media has contributed significantly in the systematization of information, dissemination and publication of documents. Noticing a significant increase in use of methods to share information and keep members informed on the progress and achievements of AMI. The following paragraph has been added to the document in Finding 7: " Links Media has helped to improve the communication activities of AMI / RAVREDA, and it is demonstrated in the reports and AMI website, since 2011, progress in the communication and increased use of media to share information and keep partners informed on the progress and achievements AMI has made since 2011. Links Media systematized information, prepares reports and news on the progress of AMI, disseminates and publishes documents and create social media profiles for moderating comments."
The network centrality map "Communication Networks" on p.43 is not accurate considering Links Media's actual communications with partners. This diagram should be adjusted as follows to more accurately represent Links Media's nexus and reach within AMI	The diagram was based on responses to a questionnaire given to participants during the XIII Annual Meeting of AMI / RAVREDA in Nicaragua - 2014. The questionnaire asked about the communications that the respondent had made last year. We agree that the diagram does not represent reality since not all members of AMI / RAVREDA answered the questionnaire and there may be a recall bias. But it somewhat represents the activity of the network and its members. We are going to move the diagram to the Annex to show as an example of representation of network activity and are recommending its use for monitoring and evaluation of RAVREDA. To this end it would be advisable to monitor the communications that take place in AMI.
Further, with regard to the USAID COTR's leadership, Links Media wishes to add the following observations: - Leadership and Team-Building– The COTR has capitalized on the full potential of the team. - Leading Change – The COTR has demonstrated his flexibility as program conditions have changed, and has helped AMI to navigate change in terms of funding, performance	We considered the comments in regards to the USAID COTR to be relevant so we have included the following paragraph: Links Media believes that the <i>USAID COTR has consistently empowered AMI partners to try new approaches and bring innovation, found opportunities for shared collaboration, training, and capacity building that would strengthen the program, involved the entire team in the</i>

indicators, task focus, partners' institutional needs and requirements, and partners' competition at multiple levels (for resources, time, coordinating priorities, political landscape, etc.). • Unleashing the Power of Partner Organization and Ministries –The COTR has consistently empowered AMI partners to try new approaches and bring innovation. • Developing Leaders and Creating Opportunities– The COTR has consistently found opportunities for shared collaboration, training, and capacity building that would strengthen the program. • Develop a Vision and Set of Values –The COTR involved the entire team in the development process in an open and transparent manner. • Communication–The COTR has made the incorporation of good communication practices a continuous focus for the partners. The COTR has consistently advocated for the inclusion of communication activities within the context of the project, and has promoted the utilization of new and existing tools and communication channels.	<i>development process in an open and transparent manner. The COTR has consistently advocated for the inclusion of communication activities within the context of the project, and has promoted the utilization of new and existing tools and communication channels.</i>
There is a correction to be made on p. 44, where the report states: “In addition, recently AMI has developed information networks through social networks, but with little activity: A LinkedIn group was created in November 2013 and has only 8 members. In Facebook, it works as a private network with admission by invitation and is moderated by USAID Peru. Twitter was created on June 25, 2010, has 523 followers and 882 tweets have been written.” It is incorrect that USAID Peru manages AMI's social media. This work is done by Links Media, from creating social media profiles to moderating comments. It may, however, be accurate to say that the USAID COTR is the main contributor with additional engagement through Links Media. A more accurate and precise re-write of this paragraph would be as follows: “In addition, AMI has recently developed information networks through social media: An institutional Facebook page was created in June 2010, which is moderated by Links Media and has 525 “Likes.” An open Facebook group was created in October 2013, with the goal of improving two-way communication; it currently has 356 members. Twitter was created on June	In accordance with the clarification, the paragraph was changed as Links Media suggested.

25, 2010, with 952 tweets written and 545 followers. A LinkedIn group was created in November 2013 and has only 20 members. Finally, AMI has a public Flickr account where high-resolution images of the Initiative's work are displayed."	
With regard to some of the recommendations: On p. 54: "a) Move the AMI web portal to the PAHO web portal and integrate it with the RAVREDA web page." Concerning the recommendation to bring the AMI website under PAHO, this approach was tried by USAID and Links Media in the past without success. The PAHO website management system is too complex and lacks the flexibility needed to incorporate the existing AMI web portal. The lack of technical capacity to maintain such a complex website with a digital library of resources is demonstrated by current evidence on PAHO's RAVREDA website (http://www.paho.org/hq/index.php?option=com_content&view=category&layout=blog&id=1988&Itemid=2150&lang=en) that the links to partner websites are outdated. These expired links could be contributing to the findings (page 44) that very few program officials have access to the AMI web site. "We recommend setting the purpose and target audience of these social networks and websites, and monitor their use, with page view counters." The purpose and target audiences of the social networks have been set in the 2014 Advocacy Strategy for AMI. It may be that this is primarily directed at RAVREDA, but in the case of social media platforms that Links Media manages on behalf of AMI, nearly all platforms have their own "page view counters." One issue is that the numbers are only visible internally, such as in the examples of Facebook Insights and Google Analytics. Although the real-time statistics are not visible to the public, AMI does have real time data collection and analysis performed by Links Media across all platforms.	From the experience reported by Links Media we have made the following clarification of our recommendation: <i>"Create a portal on the PAHO website that integrates information from the AMI website with the RAVREDA web page and with links to information from the AMI website and other websites of interest. In order to make this form of communication sustainable, resources will need to be allocated in order to fund the administration of this website."</i>
On p. 55: "g) The annual AMI meetings, workshops and technical events could be placed online so that more of those who are interested can access these events."	Links Media agrees with this recommendation, and shows that this is feasible by previous experiences.

Links Media has previously hosted and recorded virtual trainings, and made them available on the AMI website. Links Media also requests multimedia files from partners' trainings to include on the AMI website.	
p. 98, Annex 10B “Report 2001 – 2009. The report was prepared by Links Media and presents an overview of AMI, mission, operations, partner roles, needs and problems and addressed activities and achievements between 2001 and 2009. Activities undertaken by the countries involved that were supported by AMI are mentioned and other countries that are not, but no explanation why they are included. This document is not a monitoring report, but a description of the activities, no stock of progress versus planning, progress or conclusions. Objective 6 that refers to strengthening networks is not reported.” In relation to Objective 6, please note that Links Media’s contract had no requirement to gather data, analyze, or report on O6, including for the development of the 2001-2009 multi-year achievement report. It appears as though there may have been a mismatch between baseline questions such as this, and AMI partners’ actual scopes of work (SOWs) and agreements with USAID.	The lack of information about the activities in the Objective 6 is consistent with the revised documents in this evaluation.

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