



Malaria Technical Advisory Group to the Pan American Health Organization: Meeting Report Punta Cana, Dominican Republic October 8-9, 2015

OVERVIEW

The Malaria Technical Advisory Group to the Pan American Health Organization conducted its inaugural meeting from October 8 to 9, 2015 in Punta Cana, Dominican Republic. This report provides a summary of the discussions, conclusions and recommendations from that meeting which included 7 open sessions: (1) Discussion of the Terms of Reference, Operational Management, and Functions of the Malaria TAG / Election of TAG Chair; (2) Updates on Malaria Elimination and the Progress of Program Implementation in the Region (by Thematic Areas); (3) Updates on the Framework for the Prevention and Containment of Artemisinin Resistance in South America; (4) Updates on Malaria among Vulnerable Populations; (5) Updates on Malaria Advocacy and Communications; (6) Updates on the Malaria Research Agenda; and (7) Overview of Malaria Networks in the Region. The open sessions were followed by a closed session where Malaria TAG members discussed priority topics and key recommendations which will guide the implementation and coordination of malaria efforts in the Region.

SUMMARY OF DISCUSSIONS AND RECOMMENDATIONS

The discussions and key observations / recommendations of the Malaria Technical Advisory Group to PAHO are summarized as follows:

- **Discussion of the Terms of Reference, Operational Management, and Functions of the Malaria TAG / Election of TAG Chair:** The Malaria TAG is the main advisory body on malaria activities and priorities in the Region of the Americas and is convened to offer independent evaluation on all aspects of PAHO/AMRO malaria activities, as well as make recommendations on committees, working groups and networks on priority issue. Its functions are complementary to the WHO Malaria Policy Advisory Committee (MPAC), and serves as a mechanism to coordinate and provide technical guidance to malaria efforts within the context of control, elimination and prevention of re-introduction; and an enabling committee for PAHO/WHO to execute its core functions (i.e. leadership, technical support, engaging in

partnerships, shaping the research agenda, setting standards, articulating ethical and informed policy options, catalyzing change, building capacity and monitoring health status and trends). Given these roles, the Malaria TAG indicated that its immediate priority is to support the review and finalization of the proposed Plan of Action for Malaria 2016-2020. More in-depth discussions on the actions proposed in the Plan of Action for Malaria 2016-2020 including ideas that are not yet included in the plan was recommended; and that countries should be involved at all levels of strategic planning. This matter will be the main focus of the next Malaria TAG Meeting proposed to be held on the first semester of 2016, in time for the presentation of the document to the 158th Session of the PAHO Executive Committee.

- **Updates on Malaria Elimination and the Progress of Program Implementation in the Region (by Thematic Areas).** There has been a 67% overall decrease in cases regionally although Haiti and Venezuela reported an increase between 2000 and 2014. Fourteen countries have so far indicated commitment to malaria elimination. *P. vivax* is more prevalent in the Region but *P. falciparum* is predominant in Hispaniola Island

21 endemic countries report routine surveillance data annually to PAHO by age, sex and other units; share epidemiological information across border areas; and collaborate on prevention, control and/or elimination efforts. PAHO has recently developed and is currently implementing a malaria data verification tool that is also helpful in terms of assessing the status of malaria surveillance in the country.

20 countries currently participate in the EQAP (External Quality Assurance Program) for malaria microscopy. PAHO is also helping to correct critical deficiencies in the procurement and distribution, quality assurance and quality control of malaria drugs and other commodities (LLINs, insecticides and RDTs among others) through the PAHO's strategic fund; and the regional warehouse for anti-malarials in Panama that coordinates donations and exchanges between countries to facilitate timely resolution of urgent supply gaps. First line treatment for malaria in the Region is as follows:

- CQ+PQ is the first line of treatment for *P. vivax* in all the countries
- CQ+PQ is the first line of treatment for *P. falciparum* in *Central American and Caribbean countries*
- ACT is the first line of treatment for *P. falciparum* in *South American countries*

PAHO-WHO adopted Integrated Vector Management (IVM) as a strategy for the control and elimination of malaria and other vector borne diseases (VBDs), but countries are at varying levels regarding its understanding and implementation. As such, there is a need for reinforcement of IVM as a theoretical and practical model to fight vector-borne diseases. IVM along with entomology and insecticide resistance will be the main focus of the proposed

Public Health Entomology (PHE) Technical Advisory Group. Its corresponding terms of reference has been under development by regional and country-level experts since May 2015 and currently awaiting approval. The first PHE TAG is proposed to be convened on March 2016

Based on the updates, the Malaria TAG indicated a number of key recommendations including:

- Countries without much progress towards elimination should be followed-up and challenges must be mitigated
 - Capacity building on malaria elimination should be considered as key cross-cutting intervention
 - Surveillance should be the key focus for elimination
 - Compliance with indicators for elimination is important (some countries may need improved health systems for better compliance)
 - Country reports should include data on imported cases, where the cases are coming from and investigation/ response. The 2016 reports should have such data from the year 2015 and shared with the countries. This is very important to all countries but especially non-endemic countries.
 - The progress report focuses mostly on malaria elimination countries, and should include other countries and progress made towards the MDGs.
 - PAHO/WHO should provide documented guidelines on how to prevent and manage outbreaks
 - PAHO should share the methodology for surveillance and assessment/evaluation of surveillance in the region with TAG members.
 - Minimum amounts of anti-malarials (perhaps through the stocks available in the Panama warehouse) should be made available to non-endemic countries including points of care to prevent incidences especially severe cases/deaths
 - Appropriate coordination must be ensured between the Malaria TAG and PHE TAG
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- **Updates on the Framework for the Prevention and Containment of Artemisinin Resistance in South America:** Artemisinin-based combination therapies (ACTs) are the recommended treatments for *Plasmodium falciparum* malaria in all malaria endemic areas of South America. Resistance of *P. falciparum* to the artemisinin drugs has already been detected in the Greater Mekong subregion of Southeast Asia and would represent a major setback to malaria control efforts if it were to develop in or spread to South America. Although artemisinin resistance has not been confirmed in the Americas, the interior of Guyana, Suriname, and French Guiana and bordering areas of Brazil and Venezuela (together known as the Guiana Shield) share many characteristics with the Greater Mekong subregion that increase the risk for selection of resistant parasites. These characteristics include higher levels of

transmission of *P. falciparum* than in the rest of the Amazon Basin, highly mobile populations, ready availability and widespread use of a variety of antimalarial drugs of questionable quality, including artemisinin monotherapies, and lack of access to and use of formal malaria diagnostic and treatment facilities.

The Framework for Artemisinin Resistance Prevention, Containment, and Elimination in South America was consolidated in November 2014 to prevent the development of artemisinin resistance in South America, and to contain and eliminate resistance if it should be confirmed. A longer-term objective of the framework is to eliminate *P. falciparum* malaria, as this will be the only sure way to avoid the selection of resistant parasites. Key activities have been jointly identified by countries but limited progress has been made due to current funding limitations.

The Malaria TAG indicated that concrete interventions should be implemented to address evolving issues in the Guyana Shield. Political commitment and international collaboration / involvement are crucial in these discussions and efforts.

- **Updates on Malaria among Vulnerable Populations:** About 65% of cases in the Americas are concentrated in 20 municipalities, mainly inhabited by vulnerable populations (Indigenous, Afro-descendants, rural settlements, miners, etc.) in Mesoamerica. Several of the municipalities reported an increase in cases in 2013. There are challenges in tracking malaria among these populations due to barriers related to: remote locations, access to clinical services, control measures implemented, cultural barriers, little community participation, lack of involvement from other sectors, etc.

In 2015, PAHO has engaged countries in Mesoamerica in developing the malaria component of the Mesoamerican Master Plan (MMP). The MMP Plan for Malaria was developed based on the Malaria Strategic Plan 2011-2015 with a particular focus on vulnerable groups including Afro-descendants, mobile populations, plantation workers, pregnant women, miners, etc. The plan was jointly developed by ministries of health and related institution in the partner countries and with technical support from PAHO/WHO and the Mexican Agency for International Cooperation and Development (AMEXCID).

The Malaria TAG affirmed the importance of focusing on these key populations have shared the following recommendations:

- It is important that efforts addressing vulnerable populations remain in alignment with global / regional / national technical frameworks and plans

- Apart from indigenous populations, vulnerable populations may also refer to illegal migrants / residents and those in hard to reach areas in other countries.
 - Appropriate investments are needed to further quantify and delimit in each country the problem of vulnerable populations; identify risk factors in vulnerable areas; and characterize population dynamics/movements, towards contributing to the management of social inequities
 - Statistics on vulnerable populations (60% of malaria cases) is good for advocacy (i.e. it will be attractive to donors) because to donors it means taking care of a huge proportion of the problem and any donor wants that kind of achievement
- **Updates on Malaria Advocacy and Communications:** The Region of the Americas has been implementing malaria advocacy and communications efforts in support of the Regional Strategic Plan for Malaria in the Americas 2006-2010 and the Strategy and Plan of Action for Malaria in the Americas 2011-2015. These regional malaria plans included a component to facilitate an enabling environment for malaria control and elimination which is strongly supported by a Regional Malaria Advocacy and Communications Plan. Two important regional platforms that were established under the Regional Malaria Advocacy and Communications Plan are as follows:
 - (1) Annual commemoration of Malaria Day (November 6) in the Americas which is regarded as an important opportunity and mechanism for countries of the Region to engage various stakeholders in aggressively fighting malaria. It is a platform that campaigns for increased advocacy and commitment among stakeholders and draws communities and the general population into concrete actions that contribute to the achievement of goals and targets in all levels – global, regional, country, and community. Malaria Day in the Americas 2015 will feature a Forum of Malaria Networks and Advocates the Regional Launch of the Action and Investment to defeat Malaria (AIM) and will be attended by global malaria experts, students, partners, members of the US Government and the public.
 - (2) Annual search for the Malaria Champions of the Americas which recognizes innovative efforts that have contributed significantly towards overcoming challenges of malaria at all levels. It is a platform to identify, celebrate and provide avenues to emulate best practices and success stories in malaria prevention and control. Recognition is conferred to implementers and provides opportunities for capacity building and expanded network for technical collaboration and the distinction of being role models and inspirations for the global battle against malaria. As of 2015, eighteen Malaria Champions of the Americas have been recognized. They have come from Brazil, Colombia, Dominican Republic, Ecuador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, and Suriname\

The Malaria TAG affirmed that effort depends on political commitment and community involvement; thus advocacy and communication is very important. Comments and recommendations include:

- RBM has prepared a guide for resource mobilization, financing and return on investment which can be adapted to the Region and individual countries can adapt it to their specific situation. It could serve as a useful guide for advocacy and communication.
 - The Global Fund is currently working on the new funding model for eliminating countries in an effort to prevent decrease in funding in such countries and the negative consequences that may follow the said decrease. Gates Foundation will be visiting the reallocation formula. Success shouldn't be punished and countries pursuing elimination should also be supported.
 - For better results in advocacy, we should assess and quantify our needs and specific actions and determine how much we need; this will help make a better case when seeking support from heads of states. Politicians are interested in knowing how much is needed and how it will be spent.
 - Consider consolidating a roadmap for elimination, including a financial gap analysis and evidence-based approaches which will make the case even stronger. Asia had a financial roadmap to support their case.
 - Advocacy can be more effective to the extent that we can quantify the needs (cost). Address questions beforehand with a specific set of actions.
 - Follow-up with funders on the case of the Guiana Shield.
 - Mechanisms similar to ALMA (African Leaders Malaria Alliance) can be explored in the Americas. For example, initiatives like LAMA (Latin America Malaria Alliance) which was discussed in EMMIE meetings, although still under construction and assessment with national malaria program can be considered.
- **Updates on the Malaria Research Agenda:** Following consultations, reviews and suggestions noted during technical meetings with various partners and reviewing existing research agendas, five priority areas were initially established to assess research gaps including: malaria outbreaks and emergencies; strategies for malaria control; costs and cost-effectiveness of strategies for the prevention, control and elimination of malaria; social and behavioral factors associated with malaria transmission; and environmental, ecological, entomological, and climatic factors associated with malaria transmission.

A systematic Review of Literature was conducted by the "Center for Studies and Research on Health-CEIS, Fundacion Santa Fe de Bogota. The results were presented in a consultation meeting Washington, DC during which

global discussions on operational research was held. After follow-up meetings, a list of research priorities was established which include:

- Optimal strategies for vector control
- Interventions for outdoor biting vectors
- Principal barriers for data on hot populations
- Mobile populations
- PCR, microscopy and quality assurance
- Drug resistance
- Capacity building for operational research
- KAP studies
- Mapping and stratification
- Community participation in malaria elimination
- Identification of and response to malaria foci
- MDA strategies
- Access to mobile populations
- Importation and re-introduction of malaria
- Strategies for malaria control in low transmission areas
- Dynamics of malaria outbreaks
- Predicting outbreaks
- Cost-effectiveness studies
- Private health systems
- Sub-microscopic malaria

Upon completion, the plan is to publish the research agenda for the region towards bringing together national needs and funding bodies. The Malaria TAG can also propose ideas on how the research agenda can be implemented.

The Malaria TAG indicated the following comments and recommendations:

- Coordinate with the mesotrack system which tries to pull together malaria elimination research; and consider partnership with TDR
- Specific operational research topics should be highlighted
- ASTMH will have a small convening of donors interested in conducting operational research (OR). While these should be specific, we should find higher level topics to help collaborate with other countries doing OR so that we efficiently conduct studies.
- Specific activities for specific populations should be considered as important priorities
- Consult the NMCPs and countries regarding the agenda
- Consider the importance of facilitating the exchange of information across regions on research conducted in other countries regarding elimination
- Importance of addressing anthropological gaps in approaching interventions in indigenous populations, and community access

Additional information (for further discussions during the next TAG meeting) was also requested including:

- Final list of research priorities
- Consideration of social variables, vector bionomics, etc.
- If the research areas identified are priorities for malaria elimination or they just simply relate to malaria elimination
- Ideas regarding how the research agenda will be implemented as there are similar agendas at country levels which were never implemented

- **Overview of Malaria Networks in the Region**

To fully understand the evolving landscape of malaria efforts across the Region, a brief overview of current malaria networks in the Region was presented, followed by a panel discussion among representatives from key partners in each of the networks. These networks include:

The Amazon Malaria Initiative / Amazon Network for the Surveillance of Antimalarial Drug Resistance (AMI/RAVREDA). Operating since 2001 with 11 member countries from Central and South America; local partners that include the National Malaria Programs, research and health Institutes, laboratories and universities; and external partners - CDC, Links Media, Management Science for Health, Univ. of Sao Paulo and PAHO/WHO, the network's lines of work (aligned with Regional Strategy and Plan of Action for Malaria 2011-2015) include:

- Monitoring efficacy of /resistance to anti-malarials; and prevention of drug resistance
- Access to quality diagnosis and timely treatment;
- Quality control of antimalarial drugs and supplies
- Entomological surveillance and IVM
- Epidemiological surveillance
- Improved and strengthen networks and systems

Key features of the network which were highlighted by USAID include: the pivotal role of PAHO optimizing the reach and impact of the network's investments in the Region through close and effective collaborations with countries (staff, focal points, and national counterparts); sustainability of actions in the Region is better than in other malaria endemic regions of the world; and dependency to funding from external resources is less in Region (by not flooding countries with resources overdependence is reduced). The new regional Plan of Action is important because it will be used to frame the way USAID delivers resources to PAHO. Lessons learned in this Region are ones that can be exported to other regions. Sub regions in Africa can benefit from the way things are being done in LAC. USAID support is deemed sustainable; and there is continuity and predictability of resources. Investments on malaria in the Region are expected to continue and may have opportunities for expansion.

The Malaria Elimination Program in Mesoamerica and the Island of Hispaniola (EMMIE) is an initiative funded by the Global Fund (GF) to eliminate malaria in nine (9) countries in Central America and Hispaniola. EMMIE promotes common and joint sub-regional elimination efforts to accelerate malaria elimination. PAHO and partners provide technical support to the Regional Coordinating Mechanism; and coordinates with the GF in validating the malaria data provided by EMMIE countries – an important basis for the cash-on-delivery funding approach that is in effect for this particular GF investment.

EMMIE represents commitment to health in Central America and Hispaniola, and strengthening health systems based on domestic investments; and follows a cash-on-delivery model – i.e. funding is only received if targets are met. If countries reach their target, they get more funds. Some countries received start-up funds to strengthen surveillance and re-orientation of the malaria program towards elimination. Majority of countries have strengthened surveillance.

Malaria Zero: Alliance for a Malaria-free Haiti. Malaria Zero has a 5-year grant (2015-2020) awarded by Bill and Melinda Gates Foundation (BMGF) in 2014. The Alliance is made up of the Ministries of Health (MoH) of Haiti and Dominican Republic, CDC, CHAI, PAHO, Carter Center, Tulane University, London School of Hygiene and Tropical Medicine. Member's roles are as follows:

- MoH Haiti: Improve and expand surveillance and diagnosis and coordinate efforts by partners
- MoH Dominican Republic: Develop surveillance especially in Haiti/DR border; coordinate partners
- CDC: technical and scientific lead; overall coordinator for all aspects of the project.
- CDC Foundation: grant administrator for project and lead private sector resource mobilization efforts.
- PAHO: lead technical support to Ministries of Health to reorient malaria programs toward elimination
- Carter Center: Community engagement and leveraging other disease platforms (e.g. Malaria + LF)
- Clinton Health Access Initiative: Modeling of risk maps, operational plans and resource mobilization
- Tulane University School of Public Health and Tropical Medicine: Operational research
- London School of Hygiene & Tropical Medicine: Serologic testing for the operational research and risk mapping

Mesoamerican Initiative on Malaria in Vulnerable Populations. The Mexican Agency for International Cooperation and Development (AMEXCID) requested support of the PAHO in development of Master Plans for the “Mesoamerica Project”. Ten Mesoamerican countries contributed to the Master Plan, which covers primary health care, road safety, integrated prevention and control of dengue and Chikungunya and malaria elimination. Malaria efforts are focusing on vulnerable populations (indigenous people, pregnant women, migrant workers, displaced populations, etc.) in all types of settings. Health and finance ministers were requested to work together so that Plans were reflected in budgets. However, AMEXCID will request and find donors. Country-level plans will be developed and submitted to PAHO and eventually to AMEXCID.

The Malaria TAG indicated the following comments and recommendations:

- Coordination of initiatives (EMMIE, AMI/RAVREDA, Malaria Zero, AMEXCID) should be addressed and facilitated by PAHO as mandated by countries
- Financial support for efforts established through AMI/RAVREDA should continue and perhaps expand towards the benefit of the the entire Region
- Technical support and additional resources are needed to enable countries to re-orient their malaria programs towards elimination
- Technical support from various agencies should be well coordinated to optimize and synergize investments
- Civil society has an important role to play in malaria elimination and also needs to be mobilized.
- Both Haiti and the Dominican Republics need extra efforts to eliminate malaria; more is needed than just epidemiological surveillance in border areas
- Additional support is needed in Dominican Republic beyond surveillance on the border. People move back and forth not only on the border, but far and wide.
- In terms of the Mesoamerican Plan for Malaria among vulnerable populations, the sustainability of funding is not well articulated. Countries will move in the direction of the funds. When there are no more funds, there is no institutional capacity to sustain elimination. Within the plan we have to be clear from the beginning about sustainability. Sustainability is a moral responsibility of funders.
- A plan alone will not align the coordination of the various initiatives /networks; we (the Malaria TAG) need to help resolve / sort this issue
- Important attention should be given to the current situation in the Guiana Shield and perhaps consider the formation of a special sub-regional network of countries that will facilitate synergistic implementation of the Framework for the Prevention and Containment of Artemisinin Resistance, towards resolving key issues in the borders of Brazil, French Guiana, Guyana, Suriname, and Venezuela.

Malaria TAG Members present at the meeting:

- Ana Carolina Santelli, (Chair, Malaria TAG), Coordinator, National Malaria Control Program, Brazil
- Marcelo Urbano Ferreira, Chair of Parasitology Department, University of Sao Paulo, Brazil
- Matthew Lynch, Director Global Program for Malaria, Johns Hopkins Center for Communication Programs
- Francisco Paniagua Araya, Quebrada Nando, San Francisco de Coyote, Costa Rica
- Jose Manuel Puello, Director, Viceministerio Salud Colectivo, Ministerio de Salud Publica
- Laurence Slutsker, Director, Division of Parasitic Diseases and Malaria, Center for Global Health, CDC (US)
- Karen-Webster Kerr, Principal Medical Officer, National Epidemiologist, Ministry of Health

Malaria TAG Members absent:

- Oscar Octavio Noya Gonzalez, Professor of Parasitology, Fac. of Med, Univ Central de Caracas Venezuela
- Frank O. Richards, Jr., Director, River Blindness, LF and Schistosomiasis Programs, Carter Center