

## **RBM Vector Control Working Group**

### **Entomological Monitoring and IVM Work Stream**

#### **Progress on 2012 Work Plan – Raman Velayudhan, WHO, Switzerland**

Approximately 62% of countries have a national IVM policy and one of the objectives of the Work Stream is to develop M&E indicators for IVM to guide countries. Recent relevant publications include:

- Provisional Strategy for Interrupting Lymphatic Filariasis Transmission in Loiasis-Endemic Countries. WHO, 2012.
- Van den Berg, H., et al. 2013. Malaria and lymphatic filariasis: the case for integrated vector management. *Lancet Infectious Diseases*, **12**: 89-94.

Plans for 2013 include:

- Capacity building.
- Fine-tuning entomological surveillance methods.
- Further case studies.
- Advocacy for IVM.

#### *Discussion*

Dengue is a problem in sub-Saharan Africa and IVM should be used to control both dengue and malaria. This will be discussed at an upcoming meeting on dengue in Accra, 6-9<sup>th</sup> February. The overwhelming current theme is reduced funding for malaria control. A basic package for multiple disease control, to which additional tools could be added as required, would be more attractive for donors and secure more support at the Ministry of Health level. It is also not cost-effective to have technicians working solely on malaria; field entomologists are required to tackle all diseases. The Mentor Initiative has piloted a new five day course in sub-Saharan Africa on integrating disease control for different vector borne diseases. Malaria interventions such as IRS are often perceived to be failing due to nuisance biting by culicines, therefore targeting culicines also will increase support for programs. IVM should be incorporated into development projects in sub-Saharan Africa which often create larval habitats. The issue of stratification is key, since it is not possible to make recommendations for all vectors and all contexts. However, there is a finite number of decisions required and clear guidance can be given on these.

**5<sup>th</sup> Entomological Monitoring and Integrated Vector  
Management (IVM) Work Stream meeting  
15.30-18.30, Tuesday 29<sup>th</sup> January 2013  
Auditorium, ICRC, Geneva**

**Chairs: Jacob Williams and Raman Velayudhan  
Rapporteur: Lucy Tusting**

***National IVM course 2012, Kuala Lumpur – Chang Moh Seng, University Malaysia Sarawak,  
Malaysia***

Following a consultative workshop on the management of vector control programs for entomologists in eight endemic countries, a regional IVM TOT course was established in 2010. In 2011, Malaysia became the first country in WPR region to organise a national IVM course. The 2011 course had 40 participants from Malaysia and eight other countries in the region. The WPR training course has six modules ranging from basic vector biology to program management and M&E and follows the WHO curriculum and publications on IVM. IVM is now part of the National Vector Control policy in Malaysia. The preparation phase for this lasted from 2010 to 2012 and involved training for entomologists and health personnel and a preliminary workshop. Participants developed follow-on projects, which will be implemented and reported on. The projects included country-specific initiatives as well as cross border projects targeting dengue, malaria, and lymphatic filariasis.

***Discussion***

- There are more opportunities for IVM in South East Asia for the combined control of malaria, dengue, chikungunya and other diseases, as is conducted in the Philippines where malaria and dengue are co-endemic and are being addressed together using the IVM approach.
- It was confirmed that a standard certificate is awarded to course participants. Further WHO-certified training courses in IVM are planned for 2013.

***USAID IVM project activities – Jacob Williams, Research Triangle Institute (RTI) International, USA***

At the global level, this project facilitates effective partnerships to further clarify the IVM concept and to develop a global agenda and guidance for implementation. In 2012, the project collaborated with WHO on seminal publications on IVM and to organise technical meetings. At the country level, the focus was on supporting appropriate policy and institutional frameworks for IVM, to strengthen capacity for more efficient and sustainable vector control. Tools developed in 2012 include entomology training videos on standardized entomology monitoring techniques and an Entomology Training Manual.

In 2012, the IVM project supported countries to conduct vector control needs assessments (VCNAs); develop national policies and strategies on IVM; develop national strategies specific to IRS; train entomology technicians; strengthen or establish insectaries and entomological laboratories; procure equipment and supplies and/or conduct entomological monitoring to support national vector control. Countries supported in 2012 include Burundi, DRC, Guinea, Liberia, Rwanda and Zimbabwe.

The Amazon Malaria Initiative (AMI) involves 7 countries in South America and 5 countries in Central America. A VCNA preparatory workshop was held in May 2012 in Ecuador, followed by assessments in 5 countries. A joint three-year AMI vector control plan was then developed with AMI partners in Washington DC, August 2012, to support country capacity strengthening for IVM, including entomological monitoring

#### *Discussion*

There is a need to generate capacity within country programmes to analyse and interpret local data and to reduce dependency on external partners. Ghana and Mali were discussed as examples, where collaboration between specialised research institutions and country programs provides an opportunity to review local data.

#### ***Overview of Labiofam activities – Aramis Martinez Arias, Labiofam, Cuba***

Larviciding by Labiofam is underway in a number of countries in sub-Saharan Africa. Activities normally begin with a review and planning, followed by implementation and monitoring. The implementation phase involves sensitisation of the local community, followed by distribution of *Bti* and *Bs* to target areas. Staff and field workers are trained as part of efforts to strengthen national capacity (e.g. 2,784 trainees in Zambia). A surveillance system is introduced, followed by mapping and larviciding. Data from the Zambia, Angola, Dar es Salaam, Nigeria, Ghana programs was presented. A factory is being constructed in Dar es Salaam, which will have the capacity to produce 1 million litres microbial larvicide per year.

#### *Discussion*

The quality of the Labiofam product was queried. It was confirmed that Labiofam strictly complies with good management practice. Independent assessment of the Labiofam product was suggested and it was confirmed that Labiofam products would be submitted to WHOPES for evaluation within 15 days. It was suggested that granules are advantageous over liquid formulations, due to greater stability at high temperatures and ease of application by members of the community.

#### ***Framework for IVM - Steve Lindsay, Durham University, UK***

An 18-month initiative is underway with the overall aim of developing a global, strategic framework for IVM, funded by the Bill and Melinda Gates Foundation. The objectives are:

1. To produce a global map showing the combined distribution of all major vector-borne diseases.
2. To select specific vector control tools that are effective at reducing each major vector borne disease and selection of surveillance tools for monitoring these diseases.
3. To select interventions for IVM.
4. To develop a strategic framework for rational decision-making for selecting interventions for vector-borne diseases.
5. To produce IVM manuals for sub-Saharan Africa, South America, SE Asia, to be approved by an independent group of WHO experts.

Deliverables will include global disease distribution maps, a literature review, a mathematical model to determine the effectiveness of key interventions using malaria and LF as an exemplar, a manual to describe the Framework for Integrated Vector Control (FIVC) and the IVM manuals outlined above.

### *Discussion*

- The causes of insecticide resistance were discussed:
  - How much have agricultural pesticides increased selective pressure on mosquitoes? There is not a vast literature on the overlap between the use of agricultural insecticide and public health insecticide and it is difficult to find data for the developing world on agricultural pesticide use.
  - How much is resistance driven by household use of coils and household pesticide aerosols and residual effects of IRS?
  - What is the selective pressure from the use of pesticides in livestock on zoophilic vectors?
  - How much selective pressure is from IRS itself?
- There are many potential areas of collaboration with the agricultural sector, e.g. in water management.
- It was queried whether the resolution of the MAP data is of sufficiently high resolution to be useful operationally.

### ***Towards a more efficient vector control delivery – where are the bottlenecks and how can they be overcome?***

A discussion was held to identify the major factors limiting successful vector control and to propose opportunities for addressing these issues. It was highlighted that there is a belief among many program managers that vector control is too difficult to achieve and there is a need to communicate the value of vector control to a wide audience. For example, there was a recent misunderstanding in two countries in East Africa that a dengue outbreak was linked to IRS implementation.

Initial discussions on the challenges to effective vector control highlighted the following:

#### **Communication and advocacy**

- The need for good communication about challenges and new technologies including mass media. Good communication for program managers.
- Political support at the appropriate levels of governance.
- The need for good feedback to governments about program successes.
- Demonstration of the need for funding even as programs take effect.
- The need to target permanent secretary-level beauracrats for advocacy.
- The need to develop multi-year plans.

#### **Funding constraints**

- Donor fatigue and insufficient internal country allocation.
- Making programs sustainable without external funding.
- Insufficient communication with funders.

#### **Knowledge and research**

- Poor understanding of the most appropriate interventions for a given vector and disease.
- The need for further research to improve methods of combining interventions.
- The need for a model of the critical components of IVM programs.
- The need for research on interventions outside the health sector.
- Discrepancies between knowledge among expert groups and field staff.

### **Program capacity**

- Practical experience is crucial yet often lacking.
- The need for specific training for field staff in order to generate local data.
- The need for training in research and statistical analysis for mid level program administrators.
- The need for good monitoring and evaluation.
- Attrition of trained staff due to low salary and absence of incentives to stay.
- Inadequate placement and vested authority of country programs.
- Distortions in staff placement from excessive decentralisation.
- Excessive centralisation constraining initiative, problem solving and innovation at the lower levels (regional/district) of country programs.

### **Procurement and logistics**

- Insufficient utilization of current tools including LLINs and IRS.
- Excessive centralisation.
- The need for better training on application methods.
- The need for better storage and distribution of products.
- Capacity for effective quantification and timely procurement.
- Short residual efficacy of insecticide products requiring multiple rounds of intervention per year.

### **Insecticide resistance**

- Insufficient collaboration between agricultural staff and control program managers regarding insecticide use.
- A lack of understanding of the drivers of insecticide resistance and how best it can be managed.
- The need to harmonise insecticide resistance management across all vector borne diseases in areas of overlap for better planning and management.
- The need for multiple tools to help manage resistance.
- Inadequate application of tools leading to ineffective interventions (not necessarily from resistance).

### **Actions and 2013 Work Plan**

- *'Towards a more efficient vector control delivery – where are the bottlenecks and how can they be overcome?'*
  - A discussion-board will be established by March 2013 to continue Work Stream discussions, with a view to concluding discussions, by June 2013.
  - Group consensus on the draft document that also includes case studies, by July 2013.
  - Peer input to be solicited from the wider VCWG and country program managers, with a view to finalizing the document by August 2013.
- *Work Stream funding:* The meeting also initiated discussions to identify opportunities to generate resources (technical and financial) for Work Stream activities. The need to establish a pooled-fund and mechanisms that will address potential conflict of interest was highlighted. It was agreed that the matter should be raised at plenary session to find VCWG-wide mechanisms, which the Work Stream may then utilise to generate the resources required.

## Participants

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<b>Agenda</b>	
15:00 – 15:30	Afternoon break/coffee and tea
	<b>Poster viewing</b>
15:30 – 15:40	<b>Welcome and introduction</b>
	<b>Adoption of the Agenda</b>
15:40 – 16:45	<b>Recapping Activities/outcomes in 2012</b>
	<ul style="list-style-type: none"> <li>- Regional workshop (WPRO)</li> <li>- Chang Moh Seng's report from Malaysia</li> <li>- Regional Activities (Americas &amp; Africa)</li> <li>- Labiofam</li> <li>- Other future activities</li> <li>- Steve Lindsay's presentation on new initiative</li> </ul>
	<b>Discussion</b>
16.45 – 17.15	<b>Towards a more efficient vector control delivery</b>
	(i) Identifying and evaluating major bottle necks
17:15 – 18:00	<b>Towards a more efficient vector control delivery</b>
	(ii) Priorities for overcoming bottlenecks
18:00 – 18:25	Joint action for 2013 & review of deliverables and potential collaboration
	Partner/member roles
18:25 – 18:30	Meeting close