



RBM Vector Control Working Group

Insecticide Resistance Work Stream

Progress on 2011 Work Plan – Prof. Janet Hemingway

Prof. Hemingway reported that coordination among partners, particularly around the GPIRM and related guidelines for insecticide resistance management, has been a major function of the work stream during 2011. The GPIRM is expected to be released in May 2012. There will then need to be a great deal of partner support, including from RBM, to help with the country-level implementation. The WHO guidelines on insecticide resistance monitoring have been revised and will also soon be published.

A Cochrane Review of the impact of insecticide resistance on LLIN effectiveness has been commissioned. The methodology for the review has been agreed and 600+ papers have been identified, although relatively few studies are in the format required for a Cochrane Review. The draft review is currently with the Cochrane Review team and should be published soon. The Work Stream is also working closely with WHO on resistance-breaking products and how these can be tested.

Discussion

Participants requested information on the key findings of the Cochrane Review. In response, it was reported that while there are insufficient data to determine the impact of insecticide resistance on malaria transmission, data do exist to demonstrate the effects on various entomological indices.

Concerns were raised regarding the future prospects for insecticide-resistance monitoring and testing in light of the restricted funding situation. For example, following cancellation of the Global Fund Round 11, countries are being supported to apply for transition funding, which will be very much restricted in comparison to a full funding round. The RBM Harmonization Working Group is concerned that given the funding restrictions, insecticide resistance testing (and other supporting components) may be dropped, with preference given to securing the maximum number of commodities. There is a clear need for advocacy with countries and the Global fund to guarantee funding for monitoring. Good data on the impact of insecticide resistance will be vital in advocating for funding. Evidence from Bioko Island and other IRS operations where there has been a change in insecticides based on insecticide resistance monitoring shows how resistance monitoring is essential for procurement and programmatic decisions, ultimately saving costs. Pooling financial and technical resources for entomological monitoring across a range of partners or across neighboring countries should also be explored.



**3rd Insecticide Resistance Work Stream Meeting
Tuesday 7th February 2012
IFRC Auditorium, Geneva, 9:00-12:00**

**Leader: Prof. Janet Hemingway
Rapporteur: Dr. John Silver**

Summary of Discussions

The Insecticide Resistance work stream session focused on two items: reviewing the recommendations and the technical guidelines for insecticide resistance management.

The Guidelines includes a revised definition of 'resistance', such that mortality rates of <98% indicate possible resistance and trigger additional testing and increased sample sizes in order to confirm the situation. Two options were presented:

Option 1	Option 2
98-100%: susceptible 90-97%: resistance to be confirmed – increase sample sizes <90%: resistance confirmed	98-100%: susceptible <98%: resistance to be confirmed

While no universal consensus was achieved, the majority view was that option 2 is likely to be more appropriate to give an earlier warning that additional monitoring is required.

The rationale for proposing the new definition is that to wait for the old threshold of <80% to confirm resistance means that it would be too late to do anything to mitigate the development of resistance, including switching of insecticides if deemed appropriate.

Discussion

Some participants expressed concern regarding the practical application of the proposed GPIRM. It was also noted that the next significant funding opportunity through which countries could mobilize funding to implement the proposed activities would probably be in 2015. What should we be advising countries to do in the meantime with limited funds? In response, it was suggested that from an insecticide resistance management perspective, maintaining current levels of coverage with a product that is not working, is probably worse than introducing a new, effective product at lower coverage levels.

Participants suggested that there be economic case studies to model the potential costs and benefits of introducing the insecticide resistance management strategies proposed in the GPIRM. It was also proposed that there be a mechanism to provide technical assistance for countries to implement GPIRM. It was also suggested that there be a mechanism to provided laboratory support services for entomological monitoring and insecticide resistance monitoring related to the GPIRM for those countries with limited laboratory capacity.



The CDC Bottle Assay and the use of synergists within that assay were discussed. Participants were informed that the new WHO insecticide resistance testing guidelines recommend that the WHO Tube Assay remains the standard for the early detection of insecticide resistance and that the CDC Bottle assay could be used for further research into the level and mechanisms of resistance. These revised guidelines urge caution, as the testing and interpretation of results can be complex. It was acknowledged that synergist products are now becoming available and countries will begin to make decisions on whether or not to purchase them and are likely to seek expert guidance. It was therefore proposed that the work stream convene a group to gather more information on synergists.

Final Conclusions and Summary – Prof. Maureen Coetzee

Discussions

The GPIRM recommendations were discussed.

The criteria for interpretation of WHO susceptibility data and use of synergists, to be published in the revised guidelines, were discussed and changes made to the document.

Actions and 2012 Work Plan

- Publication of Cochrane review on impact of insecticide resistance on net efficacy expected at the end of Q1, 2012
- A sub-group to be appointed to draft guidelines on use of synergists to monitor resistance in the field – to be put out under the auspices of GMP
- Discussion required with WHO-GMP on establishing a competent core of TA for supporting countries for IR monitoring in line with GPIRM
- Work up economics case of using rotations over a 10-15 year period to support advocacy
- Establish a direct link into the RBM harmonization and advocacy working groups
- Work with GMP on establishing a user-friendly and sustainable global database of insecticide resistance

Participants list

	Family name	Name	E-mail address
1	Abeku	Tarekegn	t.abeku@malariaconsortium.org
2	Akle	Ziad	ziadakle@aol.com
3	Akogbeto	Martin	akogbetom@yahoo.fr
4	Al-Eryani	Samira M.	samiraal@yahoo.com
5	Amajoh	Chioma	amajohc@yahoo.com
6	Ameneshewa-Workneh	Birkinesh	ameneshewab@zw.afro.who.int
7	Bart-Plange	Constance	conmarfouk@yahoo.co.uk
8	Bayoh	Mohamed Nabie	nbayoh@kemricdc.org
9	Becker	Norbert	norbertfbecker@web.de
10	Bjorge	Steven	bjorges@wpro.who.int
11	Bojang	Kalifa Abubakr	kbojang@mrc.gm
12	Boutsika	Konstantina	konstantina.boutsika@unibas.ch
13	Briët	Olivier	olivier.briet@unibas.ch
14	Brown	Andrea	anbrown@jhucpp.org
15	Buj	Valentina	vbuj@unicef.org
16	Burkot	Tom	tom.burkot@jcu.edu.au
17	Butenhoff	Andy	andy@diseasecontroltechnologies.com
18	Bwambok	Barnabas	bkb@vestergaard-frandsen.com
19	Chang	Moh Seng	Changm@wpro.who.int
20	Chimumbwa	John	jchimumbwa@rti.org
21	Chitnis	Nakul	Nakul.Chitnis@unibas.ch
22	Coetzee	Maureen	maureen.coetzee@wits.ac.za
23	Coosemans	Marc	mcoosemans@itg.be
24	Dash	A. P.	dasha@searo.who.int
25	De Alwis	TMD Ranjith	alwis_r@ugandairs.com
26	DeChant	Peter	petet.dechant@valent.com
27	Dengela	Dereje	Dereje_Dengela@abtassoc.com
29	Erskine	Marcy	marcy.erskine@gmail.com
30	Fornadel	Christen	cfornadel@usaid.gov
31	Gimnig	John	jgimnig@cdc.gov
32	Harvey	Steve	sharvey@jhsph.edu
33	Hemingway	Janet	Hemingway@liverpool.ac.uk
34	Hernandez Rodriguez	Mavy	mavygaby05@yahoo.com
35	Hesse	Gerhard	gerhard.hesse@bayer.com
36	Hii	Jeffrey	hiijk1@gmail.com
37	Hoppé	Mark	mark.hoppe@syngenta.com
38	Hoyer	Stefan	hoyers@who.int
39	Invest	John	john.invest@btinternet.com
40	Jensen	Elissa	eljensen@usaid.gov
41	Jibidar	Marie-Reine	mrjibidar@unicef.org
42	Kafuko	Jessica M.	jkafuko@usaid.gov
43	Kilian	Albert	albert@trophealth.com
44	Knowles	Steve	sknowles@anglogoldashanti.com.gh
45	Koenker	Hannah	hkoenker@jhucpp.org
46	Kolaczinski	Kate	k.kolaczinski@gmail.com

	Family name	Name	E-mail address
47	Konate	Lassana	konatela@yahoo.fr
48	Kramer	Karen	Karen.kramer@natnets.org
49	Krause	Steve	Steve.krause@valent.com
50	Larsen	Torben Holm	thl@bestneteuropa.com
51	Lengeler	Christian	Christian.Lengeler@unibas.ch
52	Lindsay	Steve	s.w.lindsay@durham.ac.uk
53	Lines	Jo	jo.lines@lshtm.ac.uk
54	Lokko	Kojo	klokko@jhuccp.org
55	Lucas	John	jluucas@olyset.net
56	Lynch	Matt	mlynch@jhuccp.org
57	Macdonald	Michael	mmacdonald@usaid.gov
58	Maes	Peter	peter.maes@brussels.msf.org
59	Mandike	Renata Aram	renata@nmcp.go.tz
60	Martinez Arias	Aramis	amarias2010@yahoo.es
61	Mathenge	Evan	emathenge@kemri.org
62	Mbogo	Charles	cmbogo@kilifi.kemri-welcome.org
63	McGuire	David	dmcguire@qedgroupllc.com
64	McLean	Tom	tom.mclean@liverpool.ac.uk
65	Milliner	John	jmilliner@gmail.com
66	Mingat	Cedric	cedric.mingat@gmail.com
67	Mnzava	Abraham	mnozava@who.int
68	Moore	Sarah	sarah.moore@lshtm.ac.uk
69	Mori	Kunizo	kunizo.mori@mitsui-chem.co.jp
70	Morris	Clarisse	morriscl@who.int
71	Nachbar	Nancy	nancy_nachbar@abtassoc.com
72	Nakamura	Masatoshi	mnakamura8823@gmail.com
73	Newman	Robert	newmanr@who.int
74	Odera	Johnson Ouma	johnson@vectorhealth.com
75	Olivi	Elena	eolivi@psi.org
76	Otten	Mac	mac.w.otten@gmail.com
77	Overgaard	Hans	hans.overgaard@umb.no
78	Paintain	Lucy	Lucy.Paintain@lshtm.ac.uk
79	Pates Jamet	Helen	hpj@vestergaard-frandsen.com
80	Peter	Rosemary	rose.peter@arystalifescience.com
81	Philippe	Soussan	soussan.philippe@bcg.com
82	Ranson	Hilary	hranson@liverpool.ac.uk
83	Renshaw	Melanie	melanie@amelior.org
84	Rockwood	Jessica	jrockwood@dfintl.com
85	Rothenhoefer	Silke	silke.rothenhoefer@basf.com
86	Rowland	Mark	mark.rowland@lshtm.ac.uk
87	Seddon	Ron	rseddon@leasemaster.com.pg
88	Selby	Richmond Ato	r.selby@malariaconsortium.org
89	Silver	John	johnsilver@gmail.com
90	Skovmand	Ole	ole.skovmand@insectcontrol.net
91	Tesfazghi	Kemi	kemi.tesfazghi@gmail.com
92	Teusher	Thomas	teuschert@who.int
93	Thomas	Miko	miko.thomas@ifrc.org
94	Toto Kafy	Hmooda	hmoodak@yahoo.com



	Family name	Name	E-mail address
95	Tun Kyaw	Thar	thartunk@gmail.com
96	Tusting	Lucy	lucy.tusting@lshtm.ac.uk
97	Van Erps	Jan	vanerpsj@who.int
98	Velayudhan	Raman	velayudhanr@who.int
99	Vontas	John	vontas@imbb.forth.gr
100	Vu	Hoang-Kim	hvu@chemonics.com
101	Williams	Jacob	jacobwilliams@rti.org
102	Wirtz	Robert	rwirtz@cdc.gov
103	Youngs	Doris	dyoungs@chemonics.com
104	Zegers de Beyl	Celine	c.zegers@malariaconsortium.org