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

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