VC TEG updates for MPAC Meeting, March 2013

GLOBAL MALARIA PROGRAMME

World Health Organization
• Call to establish a malaria vector control Technical Expert Group (TEG)
• Process to constitute the Technical Expert Group
• What are the immediate issues requiring TEG's attention?
• Next steps to address the gaps in policy/guidance
• Way forward
Call to establish a TEG on malaria vector control

• September 2012, MPAC requested the establishment of a Technical Expert Group (TEG) on malaria vector control.

• The TEG was tasked with:
  • Reviewing and providing guidance on the implementation of malaria vector control
  • Drafting recommendations to the MPAC on vector control including issues related to programme management
  • When necessary, provide advice directly to the Global Malaria Programme (WHO/GMP)
Responsibilities of TEG

• Review and recommend to MPAC the predicted effectiveness and **appropriate mix** of vector control interventions for particular situations, including:
  • the adoption of new forms of vector control following recognition of “proof of principle” from the Vector Control Advisory Group (VCAG);

• Formulate evidence-based norms, standards and guidelines for the implementation and management of malaria vector control;

• Propose policy recommendations for building capacity on entomological monitoring and optimization of vector control investments;

• Identify gaps in evidence and specific areas of research to improve the management and implementation of malaria vector control
Request for CVs from Vector Control Experts

• A call for candidates to serve on the TEG and VCAG
• Response was overwhelming – received a total of 147 CVs
• For VC TEG, these were scored by two external experts (MPAC members) and two WHO staff
Areas of expertise and criteria for scoring candidates

- The focus was on the following areas of expertise:
  - malaria vector biology and control;
  - insecticide resistance;
  - epidemiology of malaria transmission;
  - vector control - including impact of interventions;
  - planning and management of vector control programmes;
  - and health systems - including health economics.

- Pre-established criteria for scoring were used as follows:
  - 0 = no experience; 1 = 2 years or less experience
  - 2 = 3-5 years of experience; 3 = 6-9 years of experience
  - 4 = 10-14 years of experience; 5 = more than 15 years of experience
  - Relevant skills and experience
<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Gender</th>
<th>WHO Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Chioma Amajoh</td>
<td>Female</td>
<td>AFRO</td>
</tr>
<tr>
<td>2</td>
<td>Pierre Carnevale</td>
<td>Male</td>
<td>EURO</td>
</tr>
<tr>
<td>3</td>
<td>John Chimumbwa</td>
<td>Male</td>
<td>AFRO</td>
</tr>
<tr>
<td>4</td>
<td>Maureen Coetzee</td>
<td>Female</td>
<td>AFRO</td>
</tr>
<tr>
<td>5</td>
<td>Josiane Etang</td>
<td>Female</td>
<td>AFRO</td>
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<tr>
<td>6</td>
<td>Marc Coosemans</td>
<td>Male</td>
<td>EURO</td>
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<tr>
<td>7</td>
<td>Jeffery Hii</td>
<td>Male</td>
<td>WPRO</td>
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<tr>
<td>8</td>
<td>Christian Lengeler</td>
<td>Male</td>
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<tr>
<td>9</td>
<td>Jonathan Lines</td>
<td>Male</td>
<td>EURO</td>
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<tr>
<td>10</td>
<td>Mark Rowland</td>
<td>Male</td>
<td>EURO</td>
</tr>
<tr>
<td>11</td>
<td>Robert Wirtz</td>
<td>Male</td>
<td>AMRO</td>
</tr>
<tr>
<td>12</td>
<td>Martha Quinones</td>
<td>Female</td>
<td>AMRO</td>
</tr>
<tr>
<td>13</td>
<td>Melanie Renshaw</td>
<td>Female</td>
<td>EURO</td>
</tr>
<tr>
<td>14</td>
<td>Joshua Yukich</td>
<td>Male</td>
<td>AMRO</td>
</tr>
<tr>
<td>15</td>
<td>Rajander Singh Sharma</td>
<td>Male</td>
<td>SEARO</td>
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</table>
Challenges requiring policy guidance by TEG

• Unstable financial resources to ensure universal access to interventions
• Need for more durable nets
• Capacity to implement GPIRM technical recommendations
The percentage of households owning at least one ITN in sub-Saharan Africa rose from 3% in 2000 to 53% in 2011, and remained at 53% in 2012.

The proportion of the population sleeping under an ITN also increased from 2% in 2000 to 33% in 2011, and remained at 33% in 2012.

Proportion of population sleeping under an ITN derived from relationship with household ownership of at least one ITN analyzed by linear regression in 48 household surveys 2001-2011, \( y = 0.67x - 0.03 \).

Source: ITN coverage model from the Institute for Health Metrics and Evaluation, which takes into account ITNs supplied by manufacturers, ITNs delivered by NMCPs and household survey results (1). Includes Djibouti, Somalia and Sudan which are in the WHO Eastern Mediterranean Region.
Number of ITNs delivered by manufacturers to countries in sub-Saharan Africa

- 150 million ITNs are needed annually
- Only 66 million delivered in 2012
- Down from 145 million delivered in 2010
- Situation needs urgent attention

* Five countries* with largest cumulative number of ITNs delivered

*Other countries

Source: Alliance for Malaria Prevention. Data for the first three quarters of 2012 have been multiplied by 4/3 to provide an annual estimate.
Evidence that LLIN longevity is variable and 2 years or less in some settings

- Multi-country analysis by A. Kilian et al found average 50% survivorship after 3 years
- Madagascar preliminary analysis of 3-year follow-up data:
  - survivorship of 51% of polyester and 41% of polyethylene LLIN
  - most holes caused by sparks from fire and rodent damage
- Nigeria: AMP household surveys report high loss after 1 year
- Mentor Initiative: report high 3-year failure of 2 major current LLIN types in eastern Chad (mechanical damage)
- WHO guidelines on monitoring LLIN durability since 2010
- WHO procurement guidelines in 2012 – emphasizing on local data on durability
- There is a need to invest in developing more durable nets and guidance on how to estimate the median life span of LLINs to support effective coverage at country level
### Immediate strategies - where LLINs are main vector control intervention, and no increase in malaria cases

<table>
<thead>
<tr>
<th>Areas with Resistance</th>
<th>Monitoring Response</th>
<th>Vector Control Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>No resistance yet</td>
<td>• Frequent monitoring to check for appearance of resistance</td>
<td>• No change</td>
</tr>
<tr>
<td>Resistance unknown</td>
<td>• Introduce resistance monitoring immediately and identify mechanisms (genes)</td>
<td>• Continue promoting LLINs</td>
</tr>
<tr>
<td></td>
<td>• Close monitoring for</td>
<td>• Ensure quality, extent, completeness of LLIN coverage;</td>
</tr>
<tr>
<td></td>
<td>• increase in R-gene frequency</td>
<td>• Timely replacement of worn-out nets</td>
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<tr>
<td></td>
<td>• spread to new locations</td>
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<tr>
<td></td>
<td>• Check/reinforce surveillance for increases in cases</td>
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<tr>
<td>If resistance reported</td>
<td>• Identify mechanisms (genes)</td>
<td>• Continue promoting LLINs</td>
</tr>
<tr>
<td></td>
<td>• Close monitoring for</td>
<td>• Add, if possible, IRS with non-pyr (with rotation) in all resistance areas or at least in areas of concern.</td>
</tr>
<tr>
<td></td>
<td>• increase in R-gene frequency</td>
<td>• Review and revise when mechanism(s) known</td>
</tr>
<tr>
<td></td>
<td>• spread to new locations</td>
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<td>• Check/reinforce surveillance for increases in cases</td>
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Immediate strategies - where LLINs are the main vector control intervention, and malaria cases seem to be increasing

<table>
<thead>
<tr>
<th>Areas with</th>
<th>Monitoring Response</th>
<th>Vector Control Response</th>
</tr>
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| **No resistance yet** (so IR not the cause of the increase) | • Frequent monitoring to check for appearance of resistance  
• Monitor VC coverage closely to establish cause of increase | • Ensure quality, extent, completeness of LLIN coverage;  
• Timely replace worn-out nets. |
| **Resistance mechanism unknown** | • Identify mechanisms (genes)  
• Close monitoring for  
  • increase in R-gene frequency  
  • spread to new locations  
• Check/reinforce surveillance | • Continue promoting LLINs  
• Add, if possible, IRS with non-pyr (with rotation) in all resistance areas or at least in areas of concern.  
• Review and revise when mechanism(s) known |
### Immediate strategies - where IRS is the main vector control intervention

<table>
<thead>
<tr>
<th>Areas with</th>
<th>Monitoring Response</th>
<th>Vector Control Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>No resistance yet</td>
<td>Frequent monitoring to check for appearance of resistance</td>
<td>Pre-emptive rotations (annual)</td>
</tr>
<tr>
<td>Resistance present</td>
<td>• Close monitoring for increase in R-gene frequency and spread to new locations</td>
<td>• Stop use of current insecticide (and others to which there is also resistance)</td>
</tr>
<tr>
<td></td>
<td>• Identify R mechanisms (genes)</td>
<td>• Introduce rotations with other classes</td>
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<tr>
<td></td>
<td>• Reinforce surveillance for increases in cases</td>
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Next Steps to address the challenges
1. Technical paper on methods to sustain UC with LLINs

• A draft paper was shared with TEG members on 25 February 2013 and comments received on March 4
  • Consensus that the document needed further refinement before presentation to MPAC
  • Universal coverage remains the goal, with implementation of mass campaigns every three years
  • Coupled with continuous routine distribution through multiple channels according to the specific country context
  • Guidance should be concise, with clear, practical recommendations for national programmes
  • Guidance should reflect experiences and local context on the implementation of different distribution channels
2. Technical guidance on how to estimate median LLIN durability

- National programmes have asked for guidance on how to estimate the median durability of LLINs after deployment

- Information is critical for
  - Overall budgeting of LLIN implementation
  - Timing of distribution campaigns
  - Procurement decisions for specific country contexts
  - Encouraging manufacturers for more durable and innovative products

- The paper is currently being drafted and will be shared with TEG members for their review and recommendation. It will be presented to MPAC in September 2013 for decision.
3. Technical guidance for countries to prioritize vector control interventions when faced with resource constraints

- National programs have asked for guidance on how to prioritize interventions when faced with constrained or unstable resources
- Is prioritizing/targeting of vector control interventions the way forward?
- What is the criteria – biological or geographical targeting?
- How feasible is this in countries where the malaria surveillance system is weak?

➢ The paper is currently being drafted and will be shared with TEG members for their review and recommendation. It will be presented to MPAC in September 2013 for decision.
4. Technical guidance and rationale for capacity building for vector control

- Policy guidance has focused on commodities (LLINs and insecticides) – also need human and infrastructural guidance
- Increased demand for routine entomological surveillance and for insecticide resistance monitoring and management – requires well trained people
- How do we develop a training programme/curriculum that is tailored to the needs of control programmes?
  - Planning to draft a technical paper on capacity building to be reviewed by TEG and a possible decision by MPAC in March 2014.
A meeting of the VC TEG is planned for 22\textsuperscript{nd}-24\textsuperscript{th} July 2013 to discuss and finalize these papers and propose recommendations for MPAC in September 2013 for a decision.

The MPAC is invited to provide input to the four topics under consideration above, as well as to suggest other areas of focus or specific question for the Vector Control TEG to address in the near future.