Update on the WHO evaluation process for vector control tools, technologies and approaches

Marion Law, PQ - VCT
Anna Bowman, GMP
Outline

- Evaluation Pathway for vector control products
- Update on prequalification for vector control products
- Update on Vector Control Advisory Group (VCAG)
Evaluation Pathway for vector control products

1. Consisting of staff from PQT, GMP and NTD
Evaluation Pathway: next steps

- Update WHO evaluation process for vector control products, taking into account GMP review of policy-making


- Develop short video to provide overview of updated WHO evaluation process for vector control products
PQT-VC- Update

Marion Law,
WHO Prequalification – Vector Control
Introduction

- As of June 2018, the WHO evaluation of vector control products has fully transitioned to Prequalification Team within the Prequalification Team of Regulation of Medicines and other Health Technologies (RHT).
- This meeting is an opportunity to share recent updates and progress regarding the work of PQT-VC.
- 2018 PQT-VC priorities were:
  - Staffing
  - Initiate the PQ process for product applications
  - Assessors Group Sessions
  - Conversion of products from WHOPES recommendation to prequalification listing
  - Ongoing development of requirements (data, format, etc.) guidance and operational policy
  - Establishment of roles, responsibilities and relationships with WHO partners
  - Focused communication and engagement with stakeholders, especially Member States and manufacturers
Mandate

Increase access to safe, high quality, efficacious vector control products (VCPs)

- Prequalify VCPs that are safe, effective and manufactured to a high-quality, and publish a list of these prequalified products
- Ensure prequalification validity of products throughout their life-cycle
- Contribute to building assessment capacity of member states (NRAs)
  - Training of assessors from Member States through the actual WHO assessments
  - Harmonizing quality and regulatory systems
  - Supporting collaborative registrations
- Guiding principles established and integrated into our work
Key Updates

– Staffing
– Applications Statistics
– Inspection activities
– Outputs and ongoing work from the Assessment Sessions held in Arusha May 2018, Rome, Nov 2018.
– Since June 2018, PQT-VC is the co-secretariat with FAO for the JMPS WHO/FAO committee responsible for setting chemical specifications for pesticides.
Application statistics

 Requests for Determination of Pathway
   – 98 actions to date – result:
     • 56 PQ Pathway
     • 30 New Intervention Pathway

 Protocol Reviews
   – 23 submissions – 13 completed, 3 withdrawn, 7 pending

 Post PQ Change (PPQC)
   – 10 submission – 4 completed, 6 pending
Objective of the inspection is to assess the facility’s ability to provide vector control products that consistently meet the set specifications and applicable requirements.

- Inspections started in May 2018
- Inspections conducted in India, Tanzania, Vietnam, Pakistan, next China
- 16 inspections have been conducted to date
- ? inspections planned to the end of the year
Outputs and ongoing work from Assessment Session, Rome 2018

New product applications
Prequalified
– Cielo
– Fludora Fusion
– Aquatain

Assessment initiated May 2018
– Royal Sentry 2.0
– DuraActive
– Autan
– Aquastrike

Assessment initiated Nov 2018
– RoyalGuard
– Sylando 240 SC
– Tsara
– Mkito Net

Other activities
– Post prequalification changes
– Presubmission review
– Protocol review
Outputs and ongoing work from Assessment Session, Rome 2018

Policies

- Product Labelling
- Accepting publicly available information to support applications
- Re-evaluation of active ingredients

Activities

- RA model assessment
- Label improvement plan
- Comprehensive Review of Chlorpyrifos
- Product review of combination of active ingredients
- Advance discussion on periodic re-evaluation program and label improvement program for PQ listed products.
- Regulation framework- Data requirements for a gene drive mosquito product.
PQT-VC is the co-secretariat with FAO for the JMPS WHO/FAO committee responsible for setting chemical specifications for pesticides

- WHO/FAO Specifications, 9 published, 4 ongoing assessment in 2018
- 18 WHO/FAO Specifications expected in 2019

Meetings PQT-VC participation in:

- Eighteenth FAO/WHO Joint Meeting on Pesticide Specifications (JMPS) to be held in Braunschweig, Germany - from 11 to 15 June 2019.
Priorities for 2019

• Application assessment (new applications, protocols, changes)

• Post market activities
  – Label declaration/ label improvement plan
  – Complaint Process
  – Targeted oversight-surveillance & monitoring
  – Post-market product review.

• JMPS & CIPAC procedures
  – Specification submission review

• Capacity building in countries- fact finding
Vector Control Advisory Group

Update

Anna Bowman, VCAG Project Manager
Outline

• Role of VCAG
• Product classes
• Evolving VCAG
• Meetings
• Publications and resources
The role of VCAG

- VCAG is an advisory body to WHO on new tools, technologies and approaches for the control of vectors of malaria and other vector-borne diseases.

- To assist WHO in developing policy recommendations on new tools, VCAG assesses the public health value of new interventions and provides guidance on developing the evidence base required to inform such assessments by the group.

- Public health value is defined as: proven protective efficacy to reduce or prevent infection and/or disease in humans.

- Cross-departmental collaboration of the WHO Global Malaria Programme (GMP), the Department of Control of Neglected Tropical Diseases (NTD), and the WHO Prequalification Team (PQT) for vector control products.
Within WHO, VCAG assesses the public health (PH) value of new product classes.

**ASSESSMENT OF PUBLIC HEALTH VALUE:**

**Step 1:** Credible case for impact in disease control and definition of key measurements to indicate impact (i.e. propose concept)

**Step 2:** Laboratory, semi-field and small-scale field data show the basic product claims can be achieved and will have the anticipated entomological impact (proof of concept – entomological)

**Step 3:** Randomized controlled field trials demonstrate the efficacy of the product with pathogen-specific outcomes (proof of concept – epidemiological)

- **Product class without WHO policy recommendation**
- **Assess public health value**
- **PH value confirmed**
- **Develops policy recommendation**
- **WHO policy rec. to MS**

4 at step 1; 2 at step 2; 11 at step 3
<table>
<thead>
<tr>
<th>Intervention</th>
<th>Product class</th>
<th>Prototype / product</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insecticide-treated nets</td>
<td>Non-pyrethroid insecticide net</td>
<td>Yorkool LN (OP)</td>
<td>VCAG Step 1</td>
</tr>
<tr>
<td></td>
<td>Pyrethroid plus non-pyrethroid insecticide net</td>
<td>Interceptor® G2 (pyrethroid-chlorfenapyr)</td>
<td>VCAG Step 3</td>
</tr>
<tr>
<td></td>
<td>Pyrethroid plus insect growth regulator net</td>
<td>Royal Guard LN (pyrethroid-pyriproxifen)</td>
<td>VCAG Step 3</td>
</tr>
<tr>
<td></td>
<td>Pyrethroid plus piperonyl butoxide (PBO) net*</td>
<td>Olyset® Plus</td>
<td>VCAG Step 3</td>
</tr>
<tr>
<td></td>
<td>LLIN supplement</td>
<td>SmartPatch</td>
<td>VCAG Step 1</td>
</tr>
<tr>
<td>Spatial Repellents</td>
<td>Spatial Repellents</td>
<td>Transfluthrin passive emanator</td>
<td>VCAG Step 3</td>
</tr>
<tr>
<td>Attractive Targeted Sugar Baits</td>
<td>Attractive Targeted Sugar Bait (ATSB)</td>
<td>ATSB®, mosquitoes’ bait station</td>
<td>VCAG Step 3</td>
</tr>
<tr>
<td>Peridomestic residual spray</td>
<td>Outdoor spraying of residual chemical for killing sand fly vectors</td>
<td>Spaying of exterior walls and boundary fences of dwellings with residual insecticide formulations</td>
<td>VCAG Step 3</td>
</tr>
<tr>
<td>Peridomestic combined repel and lure devices</td>
<td>Repel and lure strategy for malaria control</td>
<td>The approach consists of two devices: 1) repels mosquitoes from houses and immediate surroundings (the “push”) and 2) lures mosquitoes towards odor-baited traps (the “pull”)</td>
<td>VCAG Step 3</td>
</tr>
<tr>
<td>Vector traps for disease management</td>
<td>Adulticidal Oviposition Traps</td>
<td>Vector traps including AGO trap and Trap-N-kill ® trap</td>
<td>VCAG Step 3</td>
</tr>
<tr>
<td></td>
<td>Auto-dissemination devices</td>
<td>In2Care® Mosquito Trap</td>
<td>VCAG Step 2</td>
</tr>
<tr>
<td>Genetic manipulation of vectors for disease control</td>
<td>Population reduction – gene-drive approach</td>
<td>CRISPR/Cas9 - suppression construct in \textit{An gambiаe}</td>
<td>VCAG Step 1</td>
</tr>
<tr>
<td></td>
<td>Population alteration – gene-drive approach</td>
<td>Cas9- based gene drive - anti-P. falciparum and/or anti-P. vivax constructs</td>
<td>VCAG Step 1</td>
</tr>
<tr>
<td>Sterile insect technique (SIT) combined with microbial infection</td>
<td>Sterile Insect Technique / Incompatible Insect Technique</td>
<td>Sterilized male \textit{Ae. aegypti} and \textit{Ae. albopictus} infected with Wolbachia spp.</td>
<td>VCAG Step 2</td>
</tr>
<tr>
<td>Microbial control of human pathogens in adult vectors</td>
<td>\textit{Wolbachia}-based population alteration</td>
<td>wMel strain \textit{Wolbachia} in \textit{Aedes aegypti}</td>
<td>VCAG Step 3</td>
</tr>
<tr>
<td>Systemic insecticides and endectocides</td>
<td>Systemic cattle treatment for vector control</td>
<td>Fipronil bolus</td>
<td>VCAG Step 3</td>
</tr>
<tr>
<td>Housing modification</td>
<td>Lethal House Lures</td>
<td>In2Care®EaveTube with electrostatically charged coating for delivery of powder formulations</td>
<td>VCAG Step 3</td>
</tr>
</tbody>
</table>

*Note: VCAG will review further epidemiological trial data, as per rec. 4, page 3, Conditions for deployment of mosquito nets treated with a pyrethroid and piperonyl butoxide.
Evolving VCAG

• Changes include:
  • Streamline running of meetings (option for off-cycle reviews)
  • Clarify processes: Updating ToRs and developing SoPs
  • Improving communications (Updates, website)

• Next Steps:
  • Diversifying VCAG membership
  • Update “How to design vector control efficacy trials” document
  • Continue improving running of VCAG meetings

• Ideas are welcome vcag@who.int
VCAG meetings

• Plan to publish November 2018 meeting report in February 2019
  • Documentation from the open session is published on the VCAG website https://www.who.int/vector-control/vcag/en/

• VCAG meetings planned for:
  • 13-15 May 2019
  • 11-13 November 2019
Publications and resources

• Updated Terms of Reference
• Overview of products under VCAG review
• Standard Operating Procedures for VCAG applicants

Can be found at: http://www.who.int/vector-control/vcag/en/