Report from the Global Malaria Programme

Malaria Policy Advisory Committee
Geneva, Switzerland

Dr Pedro L. Alonso, Director
14 September 2016
... above all, the spread of Zika, the resurgence of Dengue, and the emerging threat of Chikungunya are the price being payed for a massive policy failure that dropped the ball on mosquito control in the 1970s.

Margaret Chan
DG WHO
Opening Address
69 WHA
May 2016
Global Vector Control Response

- A joint effort between GMP / NTD / TDR
- Steering Committee established
- Co chaired by Prof. Tom Scott and Dr. Ana Carolina Santelli
- Profs. Steve Lindsay and Willem Taken
- To be tabled at WHA 2017
Development of the Vector Control guidelines:

- Steering group and guideline development group, external review group established
- Scope of the guideline, objectives, foreseen recommendations, existing and needed reviews, and key questions to be answered in the guideline have been drafted.
- Guideline planning proposal has been drafted and will be submitted for approval to the Guideline Review Committee
### 1. VCAG EVALUATES NEW CONCEPT or PARADIGMS (NTD/GMP lead, PQ involved)

<table>
<thead>
<tr>
<th>PARADIGM</th>
<th>VCAG EVALUATION</th>
<th>OUTCOME</th>
<th>POLICY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(Product or prototype representing paradigm)</strong></td>
<td>3 step process&lt;br&gt;Step 1: Concept&lt;br&gt;Step 2: Proof of concept – Entomological**&lt;br&gt;Step 3: Proof of concept – Public health / Disease impact</td>
<td>Validated paradigm &amp; Target Product Profile. &lt;br&gt;OR&lt;br&gt;Interim guidance via ERG**</td>
<td>Step 4: WHO Policy Setting (MPAC/STAG)</td>
</tr>
<tr>
<td>RISK ASSESSMENT (ad hoc experts)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPECIFICATIONS (JMPS or ad hoc experts)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development of outcome criteria, testing requirements, risk assessment models and criteria for quality control and any associated guidance documents</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 2. ONCE NEW CONCEPT or PARADIGM ESTABLISHED, PQ EVALUATES ALL SUBSEQUENT PRODUCTS (NTD/GMP involved)

<table>
<thead>
<tr>
<th>PRODUCTS</th>
<th>PQ DOSSIER REVIEW (RHT)</th>
<th>OUTCOME</th>
<th>POLICY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(Product or prototype representing paradigm)</strong></td>
<td>Process&lt;br&gt;Dossier of data according to guidelines/criteria developed during assessment of prototype (Entomological endpoints)</td>
<td>PQ LISTING (2017 on)</td>
<td>Policy for paradigm applies</td>
</tr>
<tr>
<td>RISK ASSESSMENT (PQ)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPECIFICATIONS (JMPS or ad hoc experts)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Notes:**
- ****Potential short normative guidance on use, likely impact, and data requirement for definitive guidance.

---

Global Malaria Programme
Insecticide Resistance

• Current evidence on the Public Health impact of Insecticide Resistance

  • To be presented at ASTMH
  • 5 country study with the support of the BMGF
  • Sleeping under an Insecticide Treated bednet continues to afford protection, including in areas with high levels of pyrethroid resistance
New online mapping tool

INPUTS

- Entomological database
- Antimalarial drug efficacy database
- Pf hrp2/hrp3 deletion database

FILTERS

- Indicator
- Region
- Year
- Vector/parasite
- Insecticide/drug
- Mechanism/deletion

OUTPUTS

- Example map symbology
- Example graphical outputs

➢ To be available: end December 2016
• Diagnostics
  • HRP2 deletions
  • RDT QA and transition to the PQ department
  • NAA
  • G6PD

• Improving Access
  • IPTp
  • RAS
  • SMC

• Safety of antimalarials
• MDA
• New drugs for malaria control and elimination
• Malaria vaccines: RTS,S
Improved access to quality diagnostics

**Guidance on diagnostics**
- Guidance to manufacturers on RDT product labelling and instructions
- **Guidance to RDT manufacturers on transition to PQ for procurement**
- **Guidance booklet on G6PD point of care tests** (collaboration with PATH)
- Policy briefing on G6PD POCT to support anti-relapse therapy
- Road map on RDT implementation in the private sector
- Standards of practice for performing RDTs in different settings
- Printing/dissemination of QA manual for malaria microscopy (2nd Edn)
- Dissemination of SOPs for malaria microscopy

**Malaria microscopy**
- International system for validation of national malaria slide banks
- Center for External Competency Assessment (ECA) of malaria microscopists established @ UCAD/Senegal for Francophone countries
- Collaboration with AFRO, EMRO and WPRO to support inter-country training workshops QA of malaria microscopy and RDTs
Improved access to quality diagnostics (continued)

**Rapid diagnostic tests**
- Technical consultation on surveillance on *pfhrp2* gene deletions
  - Continued Product Testing (PT) and Lot Testing (LT) programme (R7)
  - Prepare new performance evaluation (in vitro, rec_Ags, other) for R8
  - Implementing new LT methods based on rec_Ags in key national labs
  - Support manufacturers in using new rec_Ags for internal quality control
  - Develop web-based systems to monitor PT and LT post 2017

**QA of nucleic-acid amplification based techniques**
- Develop repository for External Quality Assessment @ HTD/London

**QA of G6PD point of care tests**
- Collaboration with WHO/PQDx for laboratory assessment of G6PD POCT
PDT: progress over last six months

Improved access to quality medicines

Red font = in progress

**Guidance on antimalarial medicines**

- **PPC of ivermectin for malaria transmission control**
- Dissemination and translation of WHO Treatment Guidelines
- Updating WHO Treatment Guidelines (e.g. AS-PYR, ACT in 1st trimester)
- ERG on cardiotoxicity of antimalarials
- **Operational manual on mass drug administration**
- Response plan on identified safety concerns for medicines
- Updated EOI of antimalarial medicines for WHO PQP

**Supply of quality antimalarials**

- Ad-hoc management of medicines donations and emergency requests

**Monitoring medicines**

- Monitoring sales/deliveries of prequalified ACTs from manufacturers
- Tracking WHO ban of oral artemisinin-based monotherapies AMTs

Global Malaria Programme

World Health Organization
PDT: progress over last six months

Improved access to quality medicines (continued)

*Intermittent preventive treatment with SP*
- Contribution to multi-Agency multi-country proposal to UNITAID for community delivery of IPTp-SP

*Management of severe malaria*
- Operational research on severe malaria at hospital level (Burkina Faso)
- Contribution to multi-Agency multi-country proposal to UNITAID for pre-referral treatment of rectal artesunate

Improved access to quality vaccines

*Support RTS,S pilot implementation in selected countries*
- Collaboration with IVR in developing a grant proposal and submission to GAVI, UNITAID and Global Fund
- Selection of countries, briefings and preparation of MOH programs

Red font = in progress
**Objectives**

- 1,390,000 children aged 2-59 months living in hard-to-reach areas accessing malaria, pneumonia and diarrhea iCCM services in 5 countries by 2017
- Stimulate policy updates in participating countries and catalyse iCCM scale-up through documentation and dissemination of best practices

**Grant Period:** April 2012 - March 2017

- 5 countries: Malawi, Mozambique, DRC, Niger, Nigeria (2 states)
- MoH provides leadership to the RAcE programme and iCCM is integrated with health services to facilitate sustainability
- Implemented through NGO as sub-grantees under joint guidance of MoH and WHO
Policy-Institutional Strengthening Highlights

- Community-case management of malaria in NSP 2013-2015 of DRC and Niger
- RDTs in RAcE Districts followed by national rollout and implementation of WHO “Caring for Newborn at Home” package in RAcE district in Malawi
- Amoxicillin replaced cotrimoxizole for pneumonia in DRC and Malawi
- Ministerial decree allowing CHWs to use malaria RDTs and amoxicillin in Niger
- National iCCM Guidelines, iCCM and Supervision training tools in Nigeria

Community Health Worker Deployment

- Trained: 8295
- Active: 7271

Case Management (update: June 2016)

- Malaria Cases: 2,163,402
- Pneumonia Cases: 1,197,702
- Diarrhoea Cases: 908,842
Objective:

To identify and address key determinants of sustainability to develop a national iCCM sustainability roadmap and a RAcE project transition plan in each RAcE country.
Core work

- **World Malaria Report:**
  - Summary reports of WMR 2015 released World Malaria Day (25 April 2016) in English, French and Spanish
  - Online data collection for WMR 2016 launched May 2016
  - Planning meeting with regional focal points: 19-21 April, Geneva

- **SME Task force:**
  - Second SME Task Force meeting: 21-23 June 2016, Geneva
  - Monitoring & Evaluation framework for the GTS for malaria 2016-2030 and AIM – prepared for MPAC review

- **P. vivax:**

- Support to Global Fund resource allocation, target setting and elimination scenario planning
- Support to UN for SDG indicator definitions, metadata and reporting
Figure 3.13 Estimated proportion of children aged under 5 years with confirmed *P. falciparum* malaria who received ACTs, sub-Saharan Africa, 2003–2014

Source: Malaria treatment model from the Center for Applied Malaria Research and Evaluation (Tulane University), the Global Health Group (University of California, San Francisco) and the Malaria Atlas Project (University of Oxford).

WORLD MALARIA REPORT 2015
Problem statement – Testing and treatment

• Great progress in extending the coverage of malaria diagnostic testing and treatment (with appropriate antimalarial medicines) between 2000 and 2015.

• Data are limited but current estimates suggest large gaps in programme coverage remain.

• A better understanding of
  • why these gaps occur,
  • who is affected by these gaps, and
  • what strategies can be used to overcome them

• ... will help ensure universal access to care and enable the targets outlined in the Global technical strategy for malaria, 2016-2030 to be attained.
WHO review and consultation

• To characterize access to and utilization of malaria diagnostic testing and treatment services, identify bottle-necks in service provision (e.g. global supply, management of supplies, access to health facilities, availability of staff and equipment etc).

• To identify particular population sub-groups or risk factors associated with gaps, and relate the results to delivery channels (public sector, private sector, community based programmes).

• To review methods to estimate access to malaria testing and treatment from routine HMIS, health facility and household surveys and provide recommendations.

• To identify strategies to increase access to, and utilization of, diagnostic testing and treatment services and elaborate a global response plan.
Surveillance, Monitoring & Evaluation

• Priority areas for biennium:
  • updating surveillance guidance and epidemic guidance,
  • developing an analytical report on status of surveillance systems in malaria endemic countries to define priority countries
  • Undertaking detail routine information systems assessment in selected high burden countries
  • country support and training
• GMS data hub has been established with all countries now reporting monthly sub-national data. These data were used to develop the ERAR bulletin
• Reconstitute the SME-TEG by Q4 2016
Technical Support and Capacity Building

- Supported countries in accessing and in implementing GF grant:
- Worked with partners, including GF, in preparing proposals for catalytic funding:
- Supported mobilization of additional resources
- Post-ebola follow-up actions in Guinea and Sierra Leone
- Desk review and identification and resolution of bottlenecks in 25 countries in Africa (ongoing)
### Malária no HPDB no 1º Trimestre 2015-2016

<table>
<thead>
<tr>
<th>Meses</th>
<th>Malária no ano 2015</th>
<th>Malária no ano 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Casos</td>
<td>Obito</td>
</tr>
<tr>
<td>Janeiro</td>
<td>365</td>
<td>44</td>
</tr>
<tr>
<td>Fevereiro</td>
<td>178</td>
<td>18</td>
</tr>
<tr>
<td>Março</td>
<td>318</td>
<td>24</td>
</tr>
<tr>
<td>Total</td>
<td>861</td>
<td>86</td>
</tr>
</tbody>
</table>
Technical Support and Capacity Building

- Malaria elimination training in Zanzibar (26 Sept – 1 Oct 2016)
- Malaria elimination training in E8 countries (Nov 2016)
- IPO/NPO training in AFRO
  - focus on WHO recommendations, GTS and its implementation in Africa, malaria program reviews, national strategy development and Global Fund concept note development (10 – 14 Oct 2016 in Ethiopia; 24 – 28 Oct in Benin)
- IPO/NPO training in PAHO
  - focus on malaria elimination (28 Nov – 2 Dec 2016)
- Establishment of a global consultant roster
  - Orientation of consultants in AFRO on WHO policies, GTS and its implementation in Africa, malaria program reviews, national strategy development and Global Fund concept note development (in Brazzaville; dates TBD)
- Malaria surveillance and data management training (AFRO; in Nov)
- Malaria program reviews (Afghanistan, Bhutan, Bangladesh, Indonesia, Mozambique, etc)
In recent years, more countries have been moving towards elimination

- In 2000, 13 countries had fewer than 1000 cases of malaria. By 2015, 33 countries had achieved this milestone.

- The number of countries with fewer than 100 cases of malaria, and with fewer than 10 cases of the disease, has also increased sharply since 2000.

Figure 2: Country progress towards malaria elimination, 2000-2015
Since the early 1960s, 33 countries and territories have been certified and entered in the WHO official register.


The Maldives was certified in 2015 but has not yet been added to the WHO official register.

Sri Lanka was certified malaria free on 5 Sept. 2016

Kyrgyzstan: final reported being reviewed

Argentina: awaiting final mission
Countries certified as malaria-free and future elimination targets

### TABLE I.
Countries certified as malaria-free by WHO (1955–2015) and future elimination targets

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GLOBAL MALARIA ERADICATION PROGRAMME</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>15 COUNTRIES AND 1 TERRITORY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bulgaria, Cyprus, Dominica, Grenada, Hungary, Italy, Jamaica, Netherlands, Poland, Romania, Saint Lucia, Spain, Taiwan, Trinidad and Tobago, United States of America, Venezuela</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>7 COUNTRIES AND 1 TERRITORY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia, Brunei, Cuba, Mauritius, Portugal, Réunion, Singapore, Yugoslavia (Bosnia Herzegovina, Croatia, The Former Yugoslav Rep. of Macedonia, Montenegro and Serbia)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>NONE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>5 COUNTRIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Armenia, Moldavia, Morocco, Turkmenistan, United Arab Emirates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AT LEAST 10 COUNTRIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AT LEAST 20 COUNTRIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>AT LEAST 35 COUNTRIES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**GTS elimination targets:** The Global Technical Strategy for Malaria (GTS) calls for the elimination of malaria in at least 10 countries by 2020. To meet this target, a country must achieve at least one year of zero indigenous cases by 2020. According to the WHO analysis presented in this report, 31 countries have the potential to reach this target: Algeria, Bangladesh, Burundi, Cameroon, Côte d’Ivoire, Cuba, Costa Rica, Dominican Republic, Egypt, Iran (Islamic Republic of), Malaysia, Mexico, Nepal, Paraguay, Republic of Korea, Saudi Arabia, South Africa, Suriname, Switzerland and Timor-Leste.

**Certification of malaria elimination:** Countries that achieve at least three consecutive years of zero indigenous cases are eligible to apply for a WHO certification of malaria-free status. Between 1955 and 2015, 27 countries and two territories received the WHO certification. Three countries have recently started the certification process: Argentina, Kyrgyzstan and Sri Lanka.

*Zero indigenous cases:* In 2014, 13 countries reported 0 indigenous cases of malaria. They are: Argentina, Azerbaijan, Costa Rica, Georgia, Iraq, Kyrgyzstan, Oman, Paraguay, Sri Lanka, Syrian Arab Republic, Tajikistan, Turkey and Uzbekistan.
Recent trends in malaria cases

**FIGURE 3.**
Countries with fewer than 100 indigenous malaria cases in 2014

Countries with 100 to 1000 indigenous malaria cases in 2014

Countries with 1000 to 10 000 indigenous malaria cases in 2014

Global Malaria Programme
## Countries with the potential to eliminate local transmission of malaria by 2020

<table>
<thead>
<tr>
<th>WHO Region</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>African Region</td>
<td>Algeria, Cabo Verde, Comoros, Botswana, South Africa, Swaziland</td>
</tr>
<tr>
<td>Region of the Americas</td>
<td>Belize, Costa Rica, Ecuador, El Salvador, Mexico, Paraguay, Suriname</td>
</tr>
<tr>
<td>Eastern Mediterranean Region</td>
<td>Iran (Islamic Republic of), Saudi Arabia</td>
</tr>
<tr>
<td>South-East Asian Region</td>
<td>Bhutan, Nepal, Timor-Leste</td>
</tr>
<tr>
<td>Western Pacific Region</td>
<td>China, Republic of Korea, Malaysia</td>
</tr>
</tbody>
</table>
Multi drug resistance

*P. falciparum* resistance to artemisinins has been detected in five countries in the Greater Mekong subregion. Chloroquine resistance in *P. vivax* has been confirmed in 10 countries.
From the ERAR framework to the Mekong Malaria Elimination Project

- Bulletin 5 on WHO’s emergency response to artemisinin resistance released September 2016
  - 6 GMS countries have cut malaria incidence by more than 54% between 2012 and 2015
  - 84% drop in deaths reported since 2012
- Partners Forum – 21-22 November in Phnom Penh, Cambodia
News recruits to the WHO Malaria Team

**Prof. Abdisalan Noor** - Team Leader
Surveillance, Monitoring & Evaluation unit

**Prof. Fred Binka** - Coordinator
Mekong Malaria Elimination Project

**Dr Gawrie Galapaththy** - Technical Officer
Elimination Unit

**Prof. David Schellenberg**
Scientific Advisor

Global Malaria Programme

World Health Organization