Indoor Residual Spraying (IRS) Work Stream 2013-2014

Strengthening Structures, Systems of Malaria Programs for Scaling up Delivery of Total-Universal Coverage with IRS
Towards *Freedom from Malaria Parasites-PF* in the Southern Africa Development Region.

Freedom from *Anopheles arabiensis*?

**Southern Africa Racing Against Malaria Rally (RAM-II)**

April 13-25, 2014

World Malaria Day

Kaka Mudambo
RBM-Southern Africa Regional Network (SARN)
Indoor Residual Spraying (IRS)
Type of needs in IRS

- Countries who **want to start IRS** and are struggling with the piloting. e.g. Malawi, Nigeria, Uganda, Sierra Leone, Bangladesh etc

- Countries that have started and are **now moving to phased expansion**. e.g. Ghana, Gambia, Kenya, Liberia, Senegal, Benin, Tanzania, Equatorial Guinea, Solomons etc

- Countries that have been implementing IRS for number of years and are **scaling up coverage**. e.g. Mozambique, Zambia, Yemen etc

- Countries that have been implementing IRS for a long time but are working to **improve quality**. e.g. India, Ethiopia, Pakistan etc

- Countries that have conducted high quality IRS for some time and need to **target and focus their IRS and combine with targeted LSM to support malaria elimination and prevention of re-introduction**. E.g. Philippines, Zanzibar, South Africa, Zimbabwe, Namibia, Nepal, Bhutan, Sri Lanka, Botswana, Swaziland, Eritrea, Botswana etc
Table 4.2
Adoption of Policies for IRS Programmes by WHO Region, 2012

<table>
<thead>
<tr>
<th>Policy</th>
<th>Africa</th>
<th>Americas</th>
<th>Eastern Mediterranean</th>
<th>Europe</th>
<th>South-East Asia</th>
<th>Western Pacific</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>IRS is recommended by malaria control programme</td>
<td>39</td>
<td>17</td>
<td>6</td>
<td>5</td>
<td>8</td>
<td>6</td>
<td>81</td>
</tr>
<tr>
<td>IRS is used for the prevention and control of epidemics</td>
<td>19</td>
<td>9</td>
<td>3</td>
<td>4</td>
<td>7</td>
<td>4</td>
<td>42</td>
</tr>
<tr>
<td>IRS and ITNs used together for malaria control in at least some areas</td>
<td>30</td>
<td>14</td>
<td>3</td>
<td>5</td>
<td>6</td>
<td>5</td>
<td>58</td>
</tr>
<tr>
<td>DDT is used for IRS</td>
<td>10</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Insecticide resistance monitoring is undertaken</td>
<td>34</td>
<td>11</td>
<td>8</td>
<td>5</td>
<td>9</td>
<td>10</td>
<td>77</td>
</tr>
</tbody>
</table>

*Number of countries/areas with ongoing malaria transmission* 44 21 9 5 10 10 99

*Number of countries/areas with ongoing P. falciparum transmission* 43 18 9 9 9 9 88

Source: NMCP data.
IRS Coverage Decreased Globally in 2012

• Overall protection of at-risk populations with IRS decreased globally from 2011 (5%) to 2012 (4%).
• Relatively high cost (per person per year of protection) of IRS compared to ITNs.
• IRS costs may increase due to the change to a more expensive insecticide in response to insecticide resistance.
• Targeted use of IRS with non-pyrethroids may become increasingly important as an insecticide-resistant management tool, especially given that currently approved LLINs all use pyrethroids
## Malaria Programs Delivery and Performance-MDG 2015

<table>
<thead>
<tr>
<th>Region</th>
<th>Transmission Countries</th>
<th>On track 75% Reduction</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>African Region</strong></td>
<td>43</td>
<td>8</td>
<td>Botswana, Cape Verde, Eritrea, Namibia, Rwanda, Sao Tome and Principe, South Africa and Swaziland and the island of Zanzibar (United Republic of Tanzania)</td>
</tr>
<tr>
<td><strong>South East Asia</strong></td>
<td>10</td>
<td>7</td>
<td>Bangladesh, Bhutan, the Democratic People’s Republic of Korea, Nepal and Sri Lanka</td>
</tr>
<tr>
<td><strong>Western Pacific Region</strong></td>
<td>10</td>
<td>8</td>
<td>Cambodia, China, Malaysia, Philippines, Republic of Korea, Solomon Islands, Vanuatu and Viet Nam.</td>
</tr>
<tr>
<td><strong>Eastern Mediterranean Region</strong></td>
<td>10</td>
<td>3</td>
<td>Islamic Republic of Iran, Iraq and Saudi Arabia</td>
</tr>
<tr>
<td><strong>Americas</strong></td>
<td>21</td>
<td>13</td>
<td>Argentina, Belize, Bolivia, Costa Rica, Ecuador, El Salvador, French Guiana, Guatemala, Honduras, Mexico, Nicaragua, Paraguay and Suriname;</td>
</tr>
<tr>
<td><strong>European Region</strong></td>
<td>8</td>
<td>8</td>
<td>All countries</td>
</tr>
</tbody>
</table>
IRS areas of interest of stakeholders & Partners

• IRS Policy
• IRS evidence & Experience
• IRS advocacy
• IRS insecticides
• IRS Spray equipment,
• IRS Geographic reconnaissance, IRS planning, estimates and proposal development,
• IRS M&E, Indicators and reporting,
• IRS financing
• IRS capacity building
• IRS training,
• IRS program supervision& evaluation
IRS Work stream 2013-2014

• Africa-MIM conference- IRS Symposium

• Private Public Partners- GBC heath with Anglo Gold Ashanti-Syngenta and other partners

• Reaching out more to Middle East and Asia. Sudan, Yemen, Iran, Pakistan, Afghanistan, India
<table>
<thead>
<tr>
<th>SYMPOSIUM TITLE</th>
<th>Indoor Residual House Spraying (IRS) old and new tool for rapid malaria control and elimination</th>
</tr>
</thead>
<tbody>
<tr>
<td>ORGANISER INFORMATION</td>
<td>Shiva Murugasampillay &amp; Manuel Lluberas</td>
</tr>
<tr>
<td>Full name and title</td>
<td>IRS Work Stream- RBM Vector Control Working Group</td>
</tr>
<tr>
<td>Affiliations</td>
<td>Roll Back Malaria Partnership</td>
</tr>
</tbody>
</table>
GBCH's Corporate Alliance on Malaria in Africa (CAMA), in partnership with Roll Back Malaria (RBM) Vector Control Working Group, will convene a two-day private-sector targeted workshop in Accra, Ghana, to help companies examine the challenges and opportunities related to initiating and improving IRS activities in the workplace and community at large.

Private- Public Partnership In malaria Control and Elimination

Business case for IRS
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Speaker(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:30 - 9:00</td>
<td>Coffee and tea</td>
<td></td>
</tr>
<tr>
<td>9:00 - 9:05</td>
<td>Introductions to day sessions</td>
<td>Shiva Murugasampillay</td>
</tr>
<tr>
<td>9:05 - 9:35</td>
<td>IRS for malaria control and elimination in India</td>
<td>R.S. Sharma</td>
</tr>
<tr>
<td>9:35 - 10:05</td>
<td>Tools for monitoring and evaluation and quality control of IRS in Pakistan</td>
<td>Muhammad Mukhtar</td>
</tr>
<tr>
<td>10:05 - 10:15</td>
<td>IRS for malaria control &amp; elimination in Swaziland</td>
<td>Teclar Maphosa</td>
</tr>
<tr>
<td>10:15 - 10:30</td>
<td>Community based IRS in Tanzania</td>
<td>Joshua Mutagahywa</td>
</tr>
<tr>
<td>10:30 - 10:45</td>
<td>Morning break / coffee and tea</td>
<td></td>
</tr>
<tr>
<td>10:45 - 11:10</td>
<td>Public-private partnership for IRS</td>
<td>Sancia Dalley</td>
</tr>
<tr>
<td>11:10 - 11:35</td>
<td>Building capacity for IRS in Africa (PMI)</td>
<td>Allison Belemvire Kristen George</td>
</tr>
<tr>
<td>11:35 - 11:45</td>
<td>IRS commodities-registration, calculation, financing, ordering, quality control, storage and stock control</td>
<td>Manuel Lluberas</td>
</tr>
<tr>
<td>11:45 - 12:00</td>
<td>Benefits of flow control valves in hand compression pumps for IRS</td>
<td>Iñigo Garmendia</td>
</tr>
<tr>
<td>12:00 - 13:00</td>
<td>Lunch</td>
<td></td>
</tr>
<tr>
<td>13:00 - 14:00</td>
<td>Group work on IRS 2014-2015 products and plans</td>
<td>All</td>
</tr>
</tbody>
</table>
US-PMI-FY 2012 Results

- >7.1 Million Houses sprayed in 16 countries
- >30.2 Million Residents protected by IRS
- >34,000 Personnel Trained as spray operators, team leaders, or supervisors
- High Coverage >92% coverage of targeted structures achieved in all countries
US-PMI-FY 2014 Program Focus

Proposed total IRS budget: $89.7 million
US-PMI-Capacity Building

• Training

• Joint supervision

• Country-level capacity and implementation plans

• South-to-south technical assistance

• Direct government funding for IRS
Main distinguishing features of CBIRS

• IRS was organized and implemented at the village level

• Construction of sub-sites

• Recruitment of sub-site supervisor for sub-sites with more than one spray team

• Recruitment of spray operators by village governments

• Recruitment of village IEC mobilizer

• Spray operators switched from using vehicles to using bicycles for transportation

• Water for spray sub-sites were supplied by the village
Schematic representation of CBIRS
Organogram for the sub site management

Standard site managed by site manager

Multiple sub-site managed by sub-site supervisor

Team Leader
Spray Operator
Spray Operator
Spray Operator
Spray Operator
Spray Operator

Team Leader
Spray Operator
Spray Operator
Spray Operator
Spray Operator

Single sub-site managed by team leader

Team Leader
Spray Operator
Spray Operator
Spray Operator
Spray Operator
Spray Operator
Spray Operator

Team Leader
Spray Operator
Spray Operator
Spray Operator
Spray Operator
Spray Operator
Spray Operator
The benefits of using CFV are ...

1. **NO INSECTICIDE DEPOSIT VARIATION** on the wall due to pressure variation in the tank

2. **INSECTICIDE LOSS** reduction of 50%

3. **OPERATOR’S CONTAMINATION RISK REDUCTION** (7 times)

4. **NOZZLE TIP ABRASION** reduction of 50%
3.6.5 Flow Rate control device

A flow rate control device shall be fitted and its type declared. The device shall maintain a uniform output at the nozzle ±5% of the specified discharge rate, when subjected to the method outlined in section 2.10.4.
1 km buffer from the external boundary of Karima, village
<table>
<thead>
<tr>
<th>S.No.</th>
<th>Category</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Category 1</td>
<td><strong>States</strong> with <strong>API less than one</strong>, and all the <strong>districts</strong> in the state with API <strong>less than one</strong></td>
</tr>
<tr>
<td>2</td>
<td>Category 2</td>
<td><strong>States</strong> with <strong>API less than one</strong> and few <strong>districts</strong> reporting <strong>API more than one</strong></td>
</tr>
<tr>
<td>3</td>
<td>Category 3</td>
<td><strong>States</strong> with <strong>API more than one</strong> and either all the <strong>districts</strong> with <strong>API more than one</strong> or few <strong>districts</strong> with <strong>API less than one</strong> and <strong>few</strong> with <strong>API more than one</strong></td>
</tr>
<tr>
<td>Category</td>
<td>Strategies</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>------------</td>
<td></td>
</tr>
</tbody>
</table>
| 1.       | • Case based Quality surveillance with focus on active, passive and sentinel surveillance  
           • Integrated Vector Management (IVM) by involvement of Village Health and Sanitation Committees, other PRIs and MNREGA schemes  
           • Supportive interventions including IEC and BCC activities |
| 2.       | • Epidemiological Surveillance and Disease Management (3 Ts—Test, Treat and Track)  
           • Screening of migrants in these areas  
           • Integrated Vector Management (IVM) by source reduction through minor engineering, environmental management and focal spray  
           • Supportive interventions including IEC and BCC activities with the involvement of private health care providers, community involvement and NGOs |
| 3.       | • Epidemiological Surveillance and Disease Management: by EDTC  
           • Management of severe malaria cases by strengthening of district and sub-district hospitals and quality referral services  
           • Integrated Vector Management (IVM) by IRS and LLIN distribution so as to saturate the entire high risk population  
           • Supportive interventions. |
National V/C Guidelines and Strategy
Challenges for IRS Operation

Generally, poor performance of IRS is mainly due to;

- **Technical**
- **Managerial**
- **Financial**
- **Social & cultural**
GBCHHealth-Coordinated Malaria Platforms

Focal Point for the Private Sector Delegation (PSD) to The Global Fund and Private Sector Constituency (PSC) to the Roll Back Malaria Partnership

Coordinates and supports the Private Sector voice and perspective to The Global Fund and Roll Back Malaria, providing constituency members the ability actively engage in policy and strategy matters presented to the Boards of both institutions.
GBCHHealth-Coordinated Malaria Platforms

- Secretariat function for the Corporate Alliance on Malaria in Africa (CAMA):
  - Launched by Marathon Oil and Chevron Corporation in 2006, with GBCHHealth as implementing partner starting in 2007.
  - Currently Co-Chaired by Chevron and Bayer.
  - Provides a forum for:
    ✓ cross-sector exchange of best practices
    ✓ support of country-level capacity development
    ✓ collaboration on projects and partnerships

- GOAL OF DRIVING PARTNERSHIPS TO CONTROL AND ELIMINATE MALARIA
IRS Work stream 2014-2015

• Mobilize more active core members of the work stream.

• Mobilize more active core countries and partners to the IRS work stream. Tanzania & Zanzibar, Uganda, Nigeria, Ghana, South Africa, Swaziland, RBM-SARN, Hudson, Arysta-Syngenta, Goizper MRC-Durban, RTI, Anglo Gold Ashanti, GBCHealth, Bayer, IVCC, PMI
IRS Work Stream-2014-Priority work plan areas

• **RBM led grand negotiations on financing of new IRS products** from market to delivery and quality control to break resistance and break malaria transmission. (Kenya & Ghana)

• **Role of IRS in elimination and prevention of re-introduction** and thresholds and guidance to transform IRS from blanket approach in control to target and focus IRS. (India and Swaziland)

• **Excel Tools** for improving the planning, targeting, quality, monitoring and reporting of IRS & IRS Commodity Calculator. (Pakistan & Manuel Lluberas)

• **Mobile Phones and IEC messages to public & Remote sensing for GIS target**

• **Combination of IRS with LSM and LLIN** (India, Swaziland)

• **Control Flow Valves-Insecticide sachets** aligning the compression pumps with the labelling of sachets.

• **Decentralization of IRS & Malaria Program** to villages level with support for supervision to ensure timing, coverage and quality (Tanzania & Ethiopia)- Community based IRS

• **Private-Public partnership** on malaria and mother and child health. MDG 4&5&6 (Nigeria. Angola, DRC, Ghana)

• **Expanding Anglo- Ashanti Model**-Ghana to Rio Tinto-Guinea & AGM-Tanzania & Ilovo- Malawi

• **New US-PMI-IRS paradigm** with new contract of building national program capacity structures and systems and sustainability.