IRS SCALING UP: PERFORMANCE, PROGRESS AND PARTNERSHIPS

Republic of Uganda
National Malaria Control Program (NMCP)/ Ministry of Health
Malaria in Uganda

MALARIA ENDEMICITY IN UGANDA
Primary malaria vectors

- *An. gambiae s.s.*, *An. funestus*, *An. arabiensis*
- Sentinel sites (PMI sponsored activities)
  - Susceptibility surveillance sites: 6 (once every 2 years)
  - Mosquito collections done pre/post IRS PSC: species composition, density, behaviour, infection rates, resistance mechanism
  - Vector bionomics study, monthly in two IRS districts and one non-IRS district
Insecticide resistance patterns

Map of mortality of Anopheles gambiae s.l. after exposure to Pyrethroids, Organophosphates, carbamate and Organochlorine in six sites in Uganda, October to November 2011
Purpose of IRS

Reducing transmission high prevalence areas, and preventing epidemics
## IRS Target (Where and Who)

<table>
<thead>
<tr>
<th>Year</th>
<th>Implementer</th>
<th>No Districts targeted IRS</th>
<th>Insecticide used</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>PMI (RTI)</td>
<td>1 District South</td>
<td>Lambda-cyhalothrin</td>
</tr>
<tr>
<td>2007</td>
<td>PMI (RTI)</td>
<td>2 Districts South, 3 Districts North</td>
<td>Lambda-cyhalothrin</td>
</tr>
<tr>
<td>2008</td>
<td>PMI (RTI)</td>
<td>5 Districts North</td>
<td>DDT Alpha-cypermethrin</td>
</tr>
<tr>
<td></td>
<td>NMCP</td>
<td>1 District East</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>PMI (RTI/Abt)</td>
<td>5 Districts North</td>
<td>Alpha-cypermethrin</td>
</tr>
<tr>
<td>2010</td>
<td>PMI (Abt)</td>
<td>10 Districts* North</td>
<td>Alpha-cypermethrin Bendiocarb</td>
</tr>
<tr>
<td>2011</td>
<td>PMI (Abt)</td>
<td>10 Districts* North</td>
<td>Bendiocarb</td>
</tr>
<tr>
<td>2012</td>
<td>PMI (Abt)</td>
<td>10 Districts* North</td>
<td>Bendiocarb</td>
</tr>
<tr>
<td></td>
<td>NMCP</td>
<td>1 District East</td>
<td></td>
</tr>
</tbody>
</table>

* In 2010, large districts underwent district subdivision
IRS when

- Twice a year in PMI Districts.
- Kumi IRS was done once a year (2008, 2012)

<table>
<thead>
<tr>
<th>District</th>
<th>Spray Cycle</th>
<th>Spray Date</th>
<th>Spray Cycle</th>
<th>Spray Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulu</td>
<td>Round 6</td>
<td>October 2012</td>
<td>Round 7</td>
<td>April 2013</td>
</tr>
<tr>
<td>Amuru/Nwoya*</td>
<td>Round 6</td>
<td>October 2012</td>
<td>Round 7</td>
<td>April 2013</td>
</tr>
<tr>
<td>Kitgum/Lamwo*</td>
<td>Round 9</td>
<td>Oct-Nov 2012</td>
<td>Round 10</td>
<td>Apr-May 2013</td>
</tr>
<tr>
<td>Pader/Agago*</td>
<td>Round 9</td>
<td>Oct-Nov 2012</td>
<td>Round 10</td>
<td>Apr-May 2013</td>
</tr>
<tr>
<td>Apac/Kole*</td>
<td>Round 7</td>
<td>Nov-Dec 2012</td>
<td>Round 8</td>
<td>May-June 2013</td>
</tr>
<tr>
<td>Oyam*</td>
<td>Round 7</td>
<td>Nov-Dec 2012</td>
<td>Round 8</td>
<td>May-June 2013</td>
</tr>
</tbody>
</table>

* Newly formed districts.
Insecticides for IRS

- Regulatory body IRS insecticides MoH
- Last years: Lambda-cyhalothrin, DDT, alpha-cypermethrin, **Bendiocarb**
- WP 80% Bendiocarb
- Estimated requirements
  - PMI 2011: 630,000 sachets (2 rounds)- 900,000 HH
  - Kumi 2012: 24,000 sachets (1 round)- 67,000 HH
Hand compression pumps for IRS

• Hudson Expert pumps
• Quantities in use:
  – Approximately 300 in Kumi NMCP
  – 3670 pumps Abt
• Storage in Government stores at District levels.
• Trained people maintain and service pumps regularly
IRS Policy and Guidance

• Under national malaria control and prevention policy, 2010-11/2015.

• National IRS guidelines and training -WHO manuals/ Abt manuals.
IRS Partnerships/Collaborations

• MoH (NMCP) engagements with different sectors:
  – Ministry of Finance, National Environmental Management Authority, National Drug Authority
  – Civil society advocacy activities
  – Bilateral development agencies: PMI (Abt)
IRS planning and training

- Planning meetings take place pre-intervention at all levels (Ministry, District, Sub-County, Parish)
- Training of trainers (VCOs, DHTs, supervisors), facilitated by MoH, Abt, partners
- Trainers Train spray personnel
  - VHTs recruited, respected community

Courtesy from Abt 2010 report
IEC and Community Mobilization

• Key IEC materials and media
  – Printed materials, electronic messages (local radio, tv), film vans, community health workers

• Activities take place pre-and during intervention

• Mobilize traditional, local government leaders and members of parliament
IRS reporting and M&E

• Indicators being used:
  – No of houses sprayed, No population protected, No sachets used, No pregnant women/< 5s protected.
  – Outcome: OPD attendance from HMIS data

• House spray card: daily record spray operator activities. Entered daily in database to map progress

• Annual IRS program reporting
  – PMI/Abt bi-annual reports
  – NMCP activity reports
# IRS Outcome

IRS protected approximately 8% of total at risk population in 2012

<table>
<thead>
<tr>
<th>Year</th>
<th>No of Districts targeted</th>
<th>IRS</th>
<th>Malaria risk population protected</th>
<th>No of HH protected (% coverage)</th>
<th>Insecticide used</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1</td>
<td></td>
<td>488,502</td>
<td>103,329 (96%)</td>
<td>Lambda-cyhalothrin</td>
</tr>
<tr>
<td>2007</td>
<td>5</td>
<td></td>
<td>1,865,956</td>
<td>446,117 (98%)</td>
<td>Lambda-cyhalothrin</td>
</tr>
<tr>
<td>2008</td>
<td>6</td>
<td></td>
<td>1,550,061</td>
<td>579,913 (93%)</td>
<td>DDT, Alpha-cypermethrin</td>
</tr>
<tr>
<td>2009</td>
<td>5</td>
<td></td>
<td>2,262,578</td>
<td>568,995 (96%)</td>
<td>Alpha-cypermethrin</td>
</tr>
<tr>
<td>2010</td>
<td>10</td>
<td></td>
<td>2,794,839</td>
<td>879,326</td>
<td>Alpha-cypermethrin, Bendiocarb</td>
</tr>
<tr>
<td>2011</td>
<td>10</td>
<td></td>
<td>2,839,173</td>
<td>908,627</td>
<td>Bendiocarb</td>
</tr>
<tr>
<td>2012</td>
<td>11</td>
<td></td>
<td>~3.000,000</td>
<td>~910,000 (95%)</td>
<td>Bendiocarb</td>
</tr>
</tbody>
</table>
IRS quality

Assured through
• Following WHOPES guidelines
• Training and supervision, supervision at parish level increased control
• Community vigilant observing operators empty sachets into tank when requested water
• Entomological monitoring
  – PSC pre and post IRS
  – Wall bioassays
IRS Impact

Aduku HCIV (Apac District), High EIR: 1600 (2005)
IRS Challenges and Solutions

• Funding for
  – Scaling up IRS
  – Support for vector control work to increase monitoring insecticide resistance to inform IR strategy

Solution
  – Advocate for more funding
IRS Priorities and Plans for 2013

• Sustain IRS in the 11 districts with 2 rounds of spraying with bendiocarb/ longer lasting OP
• Discuss IRS future in Northern districts
• UC LLINs in IRS districts in 2013 GF R7P11