Public Health

- Socio economic burden
- GNP in Africa < 20% over the past 15 years
- Progression of other diseases
- No effective vaccines
- No mass malaria chemoprophylaxis for technical and economic reasons
- Drug resistance
Insecticides are considered the most important element of any integrated approach.

“WHO promotes the safe and targeted use of insecticide along with and integrated approach including biological management and environmental control”
Integrated Vector Management (IVM)

- LLIN’s
- IRS
- LARVICIDING
- REPELLENTS
- ENVIRONMENTAL MANAGEMENT
LLIN’s

• Majority of the nets contain pyrethroids to which there is resistance
• New resistance fighting nets work against certain modes of action only
• Newer nets with new actives ?????
IRS

- Resistance to the Pyrethroids
- New Formulations
  - Actellic 300 CS
- New Actives
  - Chlorfenapyr
  - Others
    - 5 – 10 years
Casos de Malaria em maior de 5 na localidade de Maciana/2012 e 2013

<table>
<thead>
<tr>
<th>Mes</th>
<th>2012</th>
<th>2013</th>
<th>A diferença entre 2012 e 2013</th>
<th>Taxa de evolução (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Janeiro</td>
<td>1240</td>
<td>377</td>
<td>258</td>
<td>-21%</td>
</tr>
<tr>
<td>Fevereiro</td>
<td>750</td>
<td>674</td>
<td>-76</td>
<td>-12%</td>
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<tr>
<td>Março</td>
<td>604</td>
<td>337</td>
<td>-257</td>
<td>-44%</td>
</tr>
<tr>
<td>Abril</td>
<td>554</td>
<td>450</td>
<td>-77</td>
<td>-17%</td>
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<tr>
<td>Maio</td>
<td>465</td>
<td>247</td>
<td>-218</td>
<td>-48%</td>
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<tr>
<td>Junho</td>
<td>290</td>
<td>104</td>
<td>-186</td>
<td>-77%</td>
</tr>
<tr>
<td>Total</td>
<td>3933</td>
<td>2389</td>
<td>-1544</td>
<td>-40%</td>
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</table>
Casos de malária em menor de 5 anos na localidade de Maciana - 2012 e 2013

<table>
<thead>
<tr>
<th>Meses</th>
<th>2012</th>
<th>2013</th>
<th>Variação</th>
<th>Taxa de Evolução</th>
</tr>
</thead>
<tbody>
<tr>
<td>Janeiro</td>
<td>497</td>
<td>484</td>
<td>-3</td>
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<tr>
<td>Fevereiro</td>
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<tr>
<td>Março</td>
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<td>877</td>
<td>-100</td>
<td>-10%</td>
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<tr>
<td>Abril</td>
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<td>-149</td>
<td>-19%</td>
</tr>
<tr>
<td>Maio</td>
<td>183</td>
<td>57</td>
<td>-126</td>
<td>-68%</td>
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<tr>
<td>Junho</td>
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<td>65</td>
<td>-96</td>
<td>-59%</td>
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<tr>
<td>Total</td>
<td>2528</td>
<td>932</td>
<td>-1596</td>
<td>-63%</td>
</tr>
</tbody>
</table>

Fonte: ABC-Maciana (Ministério da Saúde de 2013/2014)
LARVICIDING

- New/old solution
  - Misunderstood
  - Resistance management
  - Cold/dry season
  - Population suppression
REPELLANTS

- Outdoor biting
- Compliance
Conclusion

• Diseases carried by mosquitoes will continue to exact a huge economic toll particularly in Africa

• Control of the Mosquito primarily rests on the use of chemicals either as IRS, or in nets or to the environment.
• Problems associated with these interventions include:
  – Resistance development
  – User uptake
  – Management

• New technologies hold out some hope
  – Vaccines
  – Genetic engineering
For the foreseeable future we must conserve what we have and use it in combination with all the principles of IVM namely;

- Strategic and focussed treatments
- Environmental control of breeding sites
- Disease management
- Reproduction interference (SIT)
- Modification of vectorial capacity
Thank you