MALARIA SITUATION IN ZANZIBAR

Developing the 2nd Global Malaria Action Plan (GMAP2)

Whitesands Hotel
September 4-5th, 2014
Dar-es-salaam, Tanzania
Introduction

United Republic of Tanzania

Zanzibar:
- 1.3 m pop
- 2,500 km²
- Transmission
  - Perennial
  - High seasonality
- Vectors
  - An. Arabiensis
  - An. gambiae s.s
- Parasite
  - P. falciparum (83%)
  - P. malariae & Pf (17%)
History of malaria in Zanzibar:
Household malaria prevalence 1927-2010

<table>
<thead>
<tr>
<th>Period</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colonial era (&lt;1960)</td>
<td>74.2</td>
</tr>
<tr>
<td>Eradication campaign (1960-1969)</td>
<td>6.3</td>
</tr>
<tr>
<td>After eradication campaign (1970-1985)</td>
<td>45.8</td>
</tr>
<tr>
<td>During IRS project (1986-1989)</td>
<td>36.0</td>
</tr>
<tr>
<td>Pre RBM scale up (1990-1999)</td>
<td>45.4</td>
</tr>
<tr>
<td>Early RBM years (2000-2005)</td>
<td>12.5</td>
</tr>
<tr>
<td>After RBM scale up (2006-2010)</td>
<td>1.0</td>
</tr>
</tbody>
</table>
Malaria Control Phases in Zanzibar

Malaria positivity rate 1999-2011

- Evidence from that past 5 years shows that in Zanzibar malaria has been controlled and the country is now in a pre-elimination phase
- Health Facility Data confirm that since 2006 SPR is largely below 5% (threshold for pre-elimination)
- Repeated surveys data from 2006 onwards show an overall prevalence rate of <1%
- Still evidence of increased seasonal transmission in some foci (hot spots) every year
- Evidence of some localized outbreaks (2010)
MEEDS Results: Annual Malaria Confirmed Cases and positivity rate, 2008-14 (157 HF)

Confirmed malaria cases
- <5 yrs
- 5+ yrs
- rainfall

Malaria positivity rate (%)
- <5 yrs
- 5+ yrs
- rainfall

Rainfall (mm)
- 0
- 1,000
- 2,000
- 3,000
- 4,000
- 5,000

Confirmed malaria cases and Malaria positivity rate (%) over the years 2008 to 2014.
Where are the cases in 2013

Unguja

Pemba

Malaria cases
- Index case only
- Index case & 1 secondary case
- Index case & 2 secondary cases
- Index case & 3 or more secondary cases

Rivers
- Paved road
- Unpaved road
- Trail
- Forest

Kilometers

0 15
North B: Distribution of followed-up cases in 2013 (n=218)
Timeliness of notified cases by months and by district (n=1974)

- **Within 24 hours**
- **24-48 hours**
- **More than 48 hours**
- **Target (90%)**

Proportion of cases by month:
- **Jan**: 24%
- **Feb**: 26%
- **Mar**: 50%
- **Apr**: 24%
- **May**: 26%
- **Jun**: 50%
- **Jul**: 24%
- **Aug**: 26%
- **Sep**: 50%
- **Oct**: 24%
- **Nov**: 26%
- **Dec**: 50%

Proportion of cases by district:
- **CHASEKE**: 24%
- **NORTH A**: 26%
- **CENTRAL**: 50%
- **SOUTH**: 24%
- **URBAN**: 26%
- **WEST**: 50%
- **MKOANI**: 24%
- **NORTH B**: 26%
- **WETE**: 50%
- **MICHEWENI**: 24%
Annual Malaria Confirmed Cases from 157 HFs through MEEDS and MCN, 2008-14

- **Passively detected**
- **Active detection - MCN**

<table>
<thead>
<tr>
<th>Year</th>
<th># of confirmed cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>4000</td>
</tr>
<tr>
<td>2009</td>
<td>3000</td>
</tr>
<tr>
<td>2010</td>
<td>2500</td>
</tr>
<tr>
<td>2011</td>
<td>3000</td>
</tr>
<tr>
<td>2012</td>
<td>200</td>
</tr>
<tr>
<td>2013</td>
<td>100</td>
</tr>
<tr>
<td>2014</td>
<td>100</td>
</tr>
</tbody>
</table>

- 20% (510)
- 37% (130)
Timeliness of cases follow-up by months and by district (n=1974)

- **Jan**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Feb**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Mar**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Apr**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **May**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Jun**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Jul**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Aug**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Sep**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Oct**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Nov**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Dec**: 100% followed-up cases
  - 24% within 48 hrs
  - 22% 48 hours to 1 week
  - 54% More than 1 week

- **Districts**:
  - WEKO
  - MKOANI
  - CHACKACHAKE
  - NORTH A
  - CENTRAL
  - WEST
  - MICHEWENI
  - NORTH B
  - URBAN
  - SOUTH
Travel history by district and by month in 2013 (n=722 - 27%)

Overall history of travel among malaria cases investigated 29%
MCN-Achievements

• Additional of DMSOs - (2 per district – trained and equipped)
• Remarkable case follow up > 70%: 76% of detected cases have been followed-up
• Community willingness and involvement in malaria outreach services
• Data cleaning processes and reinforcement for preventive measures is at early implementation stages (including adding controls)
• Information dissemination through Quarterly reports
• Initiates village mapping for focal and intensive implementation of various interventions (ACDs, IRS etc)
• Assist in Decision making at Programme level (focusing resources)
Introduction cont..

Malaria Confirmed Cases by Week, 2008-12

Confirmed malaria cases

Malaria positivity rate (%)
Revised-STRATEGIC PLAN

• **Vision:** Zanzibar free of malaria

• **Mission:** To provide quality, affordable and cost effective anti-malarial interventions to all people in Zanzibar

• **Mediam Term:** To consolidate the malaria control achievements towards pre-elimination by 2018

• **Long term Goal:** Malaria elimination in Zanzibar
Objectives:

- **Obj 1**: All suspected malaria cases will have a confirmatory test using the recommended parasitological test by 2015

- **Obj 2**: All confirmed malaria cases will be treated with an effective antimalarial medicine. In addition an anti-gametocytocidal drug will be added to the treatment for its transmission blocking effect by 2017

- **Obj 3**: Maintain universal coverage (100%) prevention measures up to 2018

- **Obj 4**: Expand malaria surveillance; conduct active case detection and investigate 100% of confirmed malaria cases up to 2018

- **Obj 5**: Establish functional coordination structures for malaria elimination at National, district and Shehia levels by 2018

- **Obj 6**: Conduct Operational Research to evaluate and optimize ongoing activities and monitor resistance to anti-malarials and insecticides up to 2018

- **Obj 7**: By 2018, 90% of Zanzibar population will have correct knowledge and good practices towards malaria elimination continuum
<table>
<thead>
<tr>
<th>Indicators</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>LLINs utilization</td>
<td>52</td>
<td>58</td>
<td></td>
<td>72 - IRS</td>
</tr>
<tr>
<td>IRS coverage</td>
<td>96</td>
<td>93</td>
<td>88</td>
<td>95</td>
</tr>
<tr>
<td>% of health facilities with no stock out of nationally recommended antimalaria drugs continuously for one week during the last 3 months</td>
<td>100</td>
<td>100</td>
<td>79</td>
<td>100</td>
</tr>
<tr>
<td>% of households having at least three ITN</td>
<td></td>
<td></td>
<td></td>
<td>37.2</td>
</tr>
<tr>
<td>% pregnant women on anti-malarial chemoprophylaxis according to national policy</td>
<td></td>
<td></td>
<td></td>
<td>49.2</td>
</tr>
</tbody>
</table>
**Impact**

Malaria Prevalence from Household Surveys, 2002-10

![Graph showing malaria prevalence from 2002 to 2010 with indicators ACTs, IPTp, LLINs, IRS, RDT.](image)

*current “Malaria Prevalence in Zanzibar is < 1%.”*

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<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malaria positivity rate</td>
<td>2868 (2.0%)</td>
<td>2454 (1.5%)</td>
<td>3161 (1.2%)</td>
<td>2145 (1.1%)</td>
</tr>
<tr>
<td>Malaria incidence per 1000 population</td>
<td>2.3</td>
<td>1.9</td>
<td>2.4</td>
<td>1.6</td>
</tr>
<tr>
<td>Mortality attributed to malaria (all ages)</td>
<td>0</td>
<td>0</td>
<td>3 (1.2%)</td>
<td></td>
</tr>
<tr>
<td>Mortality attributed to malaria (under five)</td>
<td>0</td>
<td>0</td>
<td>1 (0.7%)</td>
<td></td>
</tr>
</tbody>
</table>
Progress: strengths

• Malaria prevalence and incidence has significantly declined and has been maintained at low levels for over five years, feasible for malaria elimination

• Mortality attributed to malaria is almost inexistence (2009:0, 2010: 0, and 2011:3: cases)

• Robust surveillance system in place; Re- & Pro-Active Case Detection, and follow up of index cases ongoing

• Intensive vector control activities in place

• Production of Surveillance reports from 2008 to date
Weaknesses

• Low proportion of domestic financing for malaria activities – ?sustainability
• Lack of external quality assurance scheme
• Lack of Death audit scheme
• No short-term and medium term forecasting for early warning of epidemics
Priorities

In September 2011, a comprehensive Malaria Programme Review was conducted in all thematic areas. Key issues and recommendations (programmatic and operational) were raised to improve programme performance.

High priority

1. Surveillance guidelines in line with malaria elimination strategies
2. Geographical reconnaissance to facilitate recognition of areas for targeted interventions
3. Death Audit Scheme
4. Introduction of more sensitive diagnostic tool
5. Introduction of targeted LSM to complement IRS&LLINs
6. Therapeutic efficacy of ACT
Priorities cont..

Less but important (could be done as time goes on)

1. To estimate malaria importation rate

2. No Insecticide Resistance Management Plan in place following an emergence of Pyrethroid resistance (in pipeline)
   - Maintaining the delivery of commodity
     - 824,882 LLINs required in 2015
     - **536,123** RDTs required in 2015
   - Keep up strategy for LLINs (172,000LLINs required)
Priorities cont...

- Conduct periodic comprehensive Malaria Programme Review
- Conduct Intervention coverage survey every year
- Conduct household survey to determine the prevalence of G6PD-Deficiency, 2013 (Glucose-6-Phosphate Dehydrogenase Deficiency)
- Monitoring vector species, densities, and behaviour
- Monitor quality of IRS using bioassay test
- Monitoring efficacy and durability of LLINs
- Regular monitor the vector susceptibility to insecticides
- Regular monitor and evaluate BCC interventions and strategies
- Monitor the pharmacovigilance activities on all antimalarial medicines
- Conduct mid-term and end-term programme evaluation based on new malaria elimination strategy
- Continue implementing surveillance systems
Critical to achieve impact

• Strengthen the QC/QA system for malaria diagnostic **tests in public and private sector**
• Introduce primaquine for **gametocytes clearance**
• Timely, replacement of LLINs **after every three years**
• Implementation of LLINs **Keep-up strategy**
• Mobilization of resource from both domestic and external sources (timely)
• The rest nice to do – facilitate program operation
New and revised approaches

- Establish functional **Malaria Elimination Multi-sectoral Committees** at all levels including private sectors
- Empower district health management teams to conduct **surveillance activities** - active case detection
- Introduce malaria **screening on arriving passengers** in major ports
- Update the Malaria Community Strategy in line with malaria elimination
- Incorporate IEC/BCC in the curriculum of health professionals training institutions and train mobile populations such as travelers, fishermen, and seasonal workers on the importance of malaria elimination
Acknowledgments