Overview of Malaria Status in Zanzibar & National Strategic Plan - 25 April 2014

Zanzibar Malaria Elimination Programme
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Outline

- Malaria epidemiology
- Surveillance Systems
  - Malaria Early Epidemic Detection System - MEEDS
  - Malaria Case Notification – MCN
  - Entomological surveillance
- Preparedness and Response
- National Strategic Plan 2013 - 2018
Malaria epidemiology

• Dramatic decrease in endemicity
  • Newly low-endemic setting
  • ? Seasonal transmission

• Prevalence of *Plasmodium falciparum* infection is estimated to be below 0.03% (2013)
Annual Malaria Incidence rates per 1000 pop. by age groups, 2008-13 (157 MEEDS sites)
Surveillance System

Malaria Early Epidemic Detection System (MEEDS)

- Is a weekly reporting system of aggregated data by the health facility workers using mobile phone
- **Data parameters**: # of visits; # of Positive cases; # of Negative cases;
- **Indicators**: positivity and test rates disaggregated by age group
- 157 facilities reporting as of 2014
MEEDS Results: Annual Malaria Confirmed Cases and positivity rate, 2008-13 (157 HF)

**Confirmed malaria cases**

- **Rainfall (mm)**
- **Confirmed Malaria Cases**

**Malaria positivity rate (%)**

- **<5 yrs**
- **5+ yrs**
- **rainfall**

![Graph showing confirmed malaria cases and malaria positivity rate over years 2008 to 2013, with rainfall as a variable.]
MCN - Case Based Response

- District Malaria Surveillance Officers follow up confirmed malaria case and investigate
- Package includes
  - Testing and treatment of HH members
  - LLIN coupon distribution
  - BCC on early testing, adherence to treatment, net use, and environmental management including IEC materials
  - Identifying visible larval sources
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>
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<tbody>
<tr>
<td>2008</td>
<td>4000</td>
</tr>
<tr>
<td>2009</td>
<td>3000</td>
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<tr>
<td>2010</td>
<td>2500</td>
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<td>2014</td>
<td>3000</td>
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20% (510) active detection in 2013
37% (130) active detection in 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
Distribution of followed-up cases in North B, 2013 (n=218)
Entomological Monitoring
Analysis of MEEDS/MCN data from 2009 to 2012 indicated areas of persistent malaria transmission.

Entomological monitoring was then expanded to 22 sentinel sites to cover areas of persistent transmission “hotspot...
Entomological monitoring methods

- From January to October 2013 mosquito collections were carried out fortnightly.
- In November 2013, collections were modified to monthly to cover the expanded sentinel sites.
- Four collection methods were used:
  - Man-landing catches (MLC): 2 houses/site; indoor and outdoor.
  - Light-trap catches using CDC-light traps: 2 light traps/site (indoor).
  - Pyrethrum-spray collections: 5 houses/site (Indoor).
  - Pit-trap collection: 2 pit traps/site (outdoor).
Man biting profile for *An. gambiae* s.l. in Zanzibar, 2013

Pemba

Unguja

Indoor starts from 18.00 to 06.00 hrs
Outdoor starts from 18.00 to 00.00 hrs
Mosquito biting behaviour in 2013 (18.00-00.00hrs)

Pemba

- Indoor: 4%
- Outdoor: 96%

Unguja

- Indoor: 50%
- Outdoor: 50%
Results: mosquito identification

- PCR results show that of 82 samples from Unguja and Pemba (2012-2013) were analyzed by IHI
  - *An. gambiae s.s* = 0
  - *An. arabiensis* = 71
  - Not amplified = 11
PREPAREDNESS AND RESPONSE ACTIVITIES
Preparedness and Response

- **District Response Teams in place one per district**
  - **Composition**
    - DMO - 1
    - DMSOs - 2
    - Lab technician - 1
    - Clinician - 1
    - Environmental Health Officers – 2
    - Health Promotion – 1
    - Co-opted member from any sector (District Authorities, etc)
  - **Training materials in place**
  - **Training of the teams**
Strategic Direction by 2018

Vision: Zanzibar free of malaria

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

Long term Goal: Malaria elimination in Zanzibar

Medium Goal Term: To consolidate the malaria control achievements towards pre-elimination by 2018
1. All suspected malaria cases will have a confirmatory test using the recommended parasitological test by 2015

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

3. Maintain universal coverage (100%) with appropriate prevention measures up to 2017.
1. Expand malaria surveillance; conduct active case detection and investigate 100% of confirmed malaria cases up to 2018
2. Establish functional coordination structures for malaria elimination at national, district and Shehia levels by 2018
3. Conduct relevant operational research to evaluate and optimize ongoing activities and monitor resistance to anti-malarials and insecticides up to 2018
Challenges

- **Technological**
  - Limited Airtel network coverage - solution is switching to Zantel

- **Data management**
  - Timely reporting from the facilities
  - Data cleaning: too much info available
  - Data reliability from the private facilities
Key messages

- Parasitological based diagnosis is critical not only for the better management of patient but also for quality reporting of malaria cases
- Malaria elimination requires robust epidemiological and entomological surveillance
  - T3 – Test, treat and track
  - Case based investigation
  - Entomological monitoring
  - Time consuming and expensive
- Presence of skilled fully equipped district response teams is vital for epidemic mitigation
- Continued funding is vital
Thank you for your attention

Acknowledgements
To all malaria partners and communities in Zanzibar