Thailand
Surveillance for elimination –
experience and results

34th Meeting of RBM partnership
Surveillance, Monitoring, and Evaluation Reference Group
22 May 2023

Division of Vector-Borne Diseases
Department of Disease Control
Ministry of Public Health
Thailand
Outline

• Current malaria situation
• Thailand surveillance system
  • Surveillance system for malaria elimination
    • Case-based online surveillance system
  • Utilization of surveillance data for programmatic actions
    • Area stratification
    • Situation/Outbreak detection
    • Interventions monitoring (1-3-7 strategy, iDES, and vector control)
    • Planning
  • Mobile technology for mHealth application
• Challenges and way forwards
Monthly Malaria Cases and Tests, FY 2018-2023

No. of blood examination

No. of cases

Source: malaria online 20 May 23
Current Malaria Situation, FY2023 (Oct 22-May 23)

- **6,792** malaria cases, **2.1 times higher** than the same period of last year (3,176 cases in 2022)
- Majority of cases were clustered at the **Thai-Myanmar border**
- 42% Thai cases, 17% migrant 1, and **41% migrant 2**
- **92%** *P. vivax* (6,242 cases), 3.5% *P. falciparum* (235 cases) and 3.2% *P. knowlesi* (218 cases)
- 68% were **male**
- 72% aged 15 years and over (**28%** under 15 years→ **school-aged children**)
- **39% indigenous cases** (2,516 cases)
- **3** deaths (2 vivax and 1 falciparum)
- **579** active foci, **1.4 times higher** than the same period of last year (411 active foci in 2022)

**Source**: malaria online 20 May 23
National Malaria Elimination Strategy, 2017-2026

Targets:
2024: Thailand is free from malaria
2023: Pf Elimination

New interventions, 2021
• Prevention of reintroduction (PoR)
• Outbreak response
• Pf elimination
• School based intervention
• People centered approach (VHVs)

• Real-time notification/investigation/response (1-3-7 strategy)
• Improving Dx and Rx at HPHs MPs/BMPs/MCs
• Intensifying ACD
• Increasing ITN coverage (1 net: 2 persons)
• iDES

Monitoring and Evaluation

Accelerate malaria elimination

Develop appropriate innovative measures and models

• Research studies and application of research findings

Establish national and international collaboration

• Enforcing national and international policies & implementation
• Enhancing investment and resource sharing

Promote community capacity building

• BCC
• Community participation
Thailand Malaria Elimination Organization

Vertical program

1. Central level
   - Department of Diseases Control (DDC)
     - Division of vector Borne Diseases
     - Division of Epidemiology

2. Regional level
   - Office of Diseases Prevention and Control

3. Provincial level
   - Vector Borne Disease Center

4. District level
   - Vector Borne Disease Unit

5. Sub-district/village
   - Malaria Clinics
   - Health Promoting Hospital
   - Malaria Post/VHV

General Health service

1. Central level
   - Office of Permanent Secretary (PS)

2. Regional level
   - Provincial Health Office
   - Hospital

3. Provincial level
   - District Health Office

4. District level
   - Other HF (SMRU/camp)

--- Reporting line
----- DDC administrative line
------ PS administrative line
<-- Supervision and coordination line

HF that provides malaria Dx and Rx
Thailand malaria surveillance system

Disease surveillance

Case Detection (CD)

Active Case Detection (ACD)
- Pro-ACD
- Re-ACD
- Special CD
- Mobile Malaria Clinics

Passive Case Detection (PCD)
- Malaria Clinics
- Health Promoting Hospitals
- Hospitals
- Malaria Posts
- Other HFs

Epidemiological investigation

Case investigation
- Indigenous
- Imported
- Others

Foci investigation

Entomological surveillance

Vector profile

Drug efficacy surveillance

Adherence to NTG

Case Follow Up

In 2012, paper-based transformed into the electronic-based surveillance system
Thailand’s malaria online surveillance system

• Nearly real-time information (case-based online system) includes:
  ▪ Malaria situation & epidemic detection
  ▪ 1-3-7 strategy monitoring
  ▪ Vector control and entomological survey
  ▪ Integrated drug efficacy surveillance (iDES)
  ▪ Supply chain management (PSM)
  ▪ Local fund contribution for malaria

http://malaria.ddc.moph.go.th
Utilization of Malaria Surveillance Data for Programmatic Actions

- Area Stratification
- Planning & Budget allocation
- Malaria Online Information
- Intervention Monitoring
- Situation/Outbreak Detection
Malaria situation

Outbreak detection

Vector profile
Stratifying foci and intervention packages

Active foci mapping

Case classification

Foci classification

Area Stratification

Active foci (A1)
Residual non active foci (A2)
Cleared foci but receptive (B1)
Cleared foci and non receptive (B2)

Indigenous

129 sub-villages
139 Sub-villages
34 Sub-villages

642 sub-villages 0.7 (%) 340 sub-villages 0.4 (%) 11,254 sub-villages 12.2 (%) 80,154 sub-villages 86.8 (%)
Case notification, investigation, and response (1-3-7 strategy)

Confirmed malaria cases notification

Case investigation

Active A1
Residual non active A2

Receptive B1

Non receptive B2

Indigenous/Imported
Imported
Indigenous
Imported

4 wk continuous cases
Foci investigation

✓ Reactive case detection (RACD)
  • 50 people /100K
✓ Vector control (ITN)
✓ BCC

✓ Reactive case detection (RACD)
  • 50 people /100K
✓ Foci investigation
  • Entomological survey
  • Mass blood screening
✓ Vector control (ITN/IPRS)-if transmission is confirmed
✓ BCC

No response required

1 Day
3 Day
7 Day

Intervention Monitoring

1-3-7 results

Vector control coverage

Integrated drug efficacy surveillance
Planning & Budget allocation

Subnational verification

Prevention of re-establishment (PoR)

Local fund investment

LAO contribution from FY 2017-2020 as reported from PHO

<table>
<thead>
<tr>
<th>Health Region</th>
<th>Fiscal Year 2017</th>
<th>Fiscal Year 2018</th>
<th>Fiscal Year 2019</th>
<th>Fiscal Year 2020</th>
<th>Total</th>
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<tbody>
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<td>1</td>
<td>78,525</td>
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<td>101,890</td>
<td>563,864</td>
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<td>207,200</td>
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<td>25,000</td>
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<td>333,500</td>
<td>143,400</td>
<td>389,550</td>
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<td>12</td>
<td>169,270</td>
<td>272,250</td>
<td>872,139</td>
<td>2,066,019</td>
<td>3,380,778</td>
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</tbody>
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Total: 1,604,197, 1,276,274, 2,881,266, 5,066,281, 10,828,018
Mobile Technology for foci management

**Objectives**
- To use maps to target and guide health staff to deliver appropriate services and commodities to the community level
- To monitor in-field progress and intervention coverage & make adjustments as needed

"Rapid response with quality interventions to targeted population"
Challenges and way forward:

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Way forward</th>
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<tr>
<td>Migration of refugees across porous borders and implementation of outbreak response along the western border</td>
<td>▪ Develop and implement a Preparedness and Response Plan from routine to “proactive” approaches, with foci targeted activities including worksites, temporary camps/shelters, migrant workers</td>
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<td></td>
<td>▪ Develop a contingency planning (risk of outbreaks increasing in magnitude!) and resource mobilization – HR, commodities etc. including flexibility in funding</td>
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<td>▪ New interventions i.e. Chemoprevention, m-health, foci covered all high risk groups</td>
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<td>▪ Intensify coverage of prevention measures through engagement of volunteer networks, CSOs and military</td>
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### Challenges and way forward:

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<td>Effective intervention of <strong>foci management</strong> (1-3-7 approach)</td>
<td>▪ Implement Foci-targeted approach (i.e., responses should cover the entire foci beyond Thai border)&lt;br&gt;▪ Improve mHealth features to be better quality of foci management and RACD&lt;br&gt;▪ Enhance more roles of health volunteers, CSOs, and relevant ministries</td>
</tr>
</tbody>
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Thank You