

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

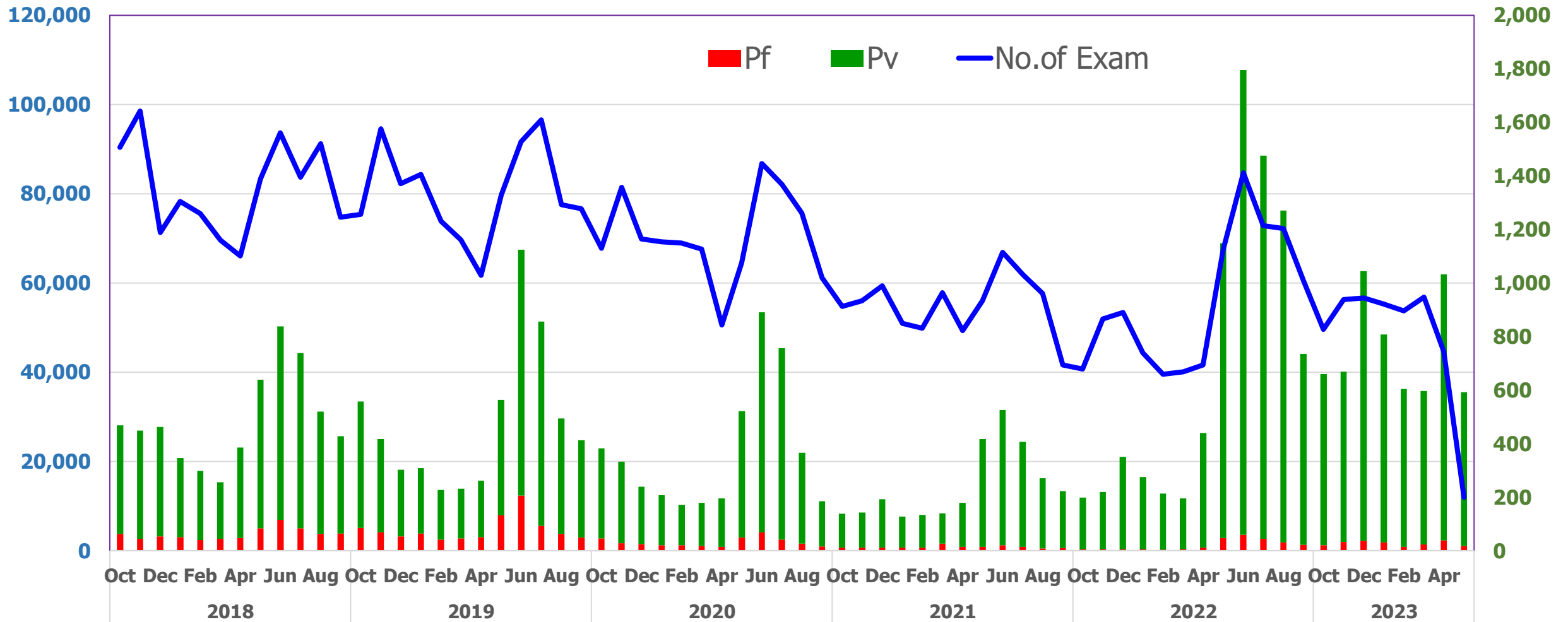
Outline

- 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

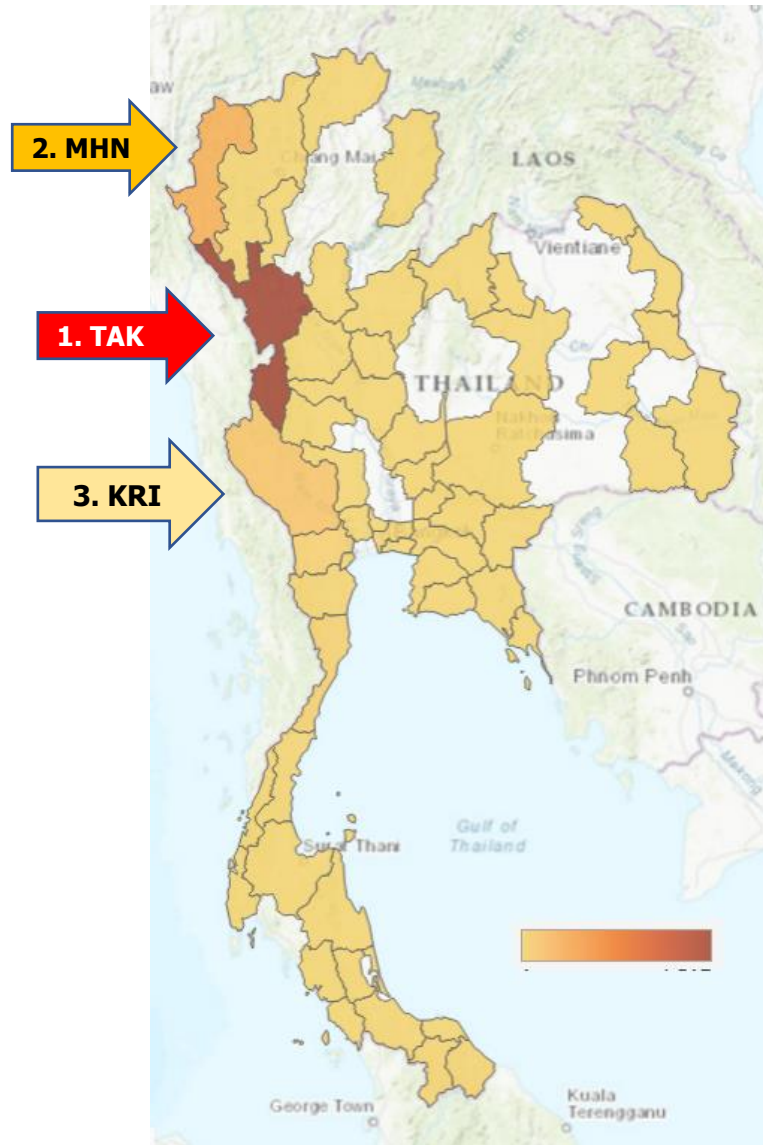
Monthly Malaria Cases and Tests, FY 2018-2023

No. of blood examination

No. of cases



Current Malaria Situation, FY2023 (Oct22-May23)



- **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)

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

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

Accelerate malaria elimination

Develop appropriate innovative measures and models

- Research studies and application of research findings

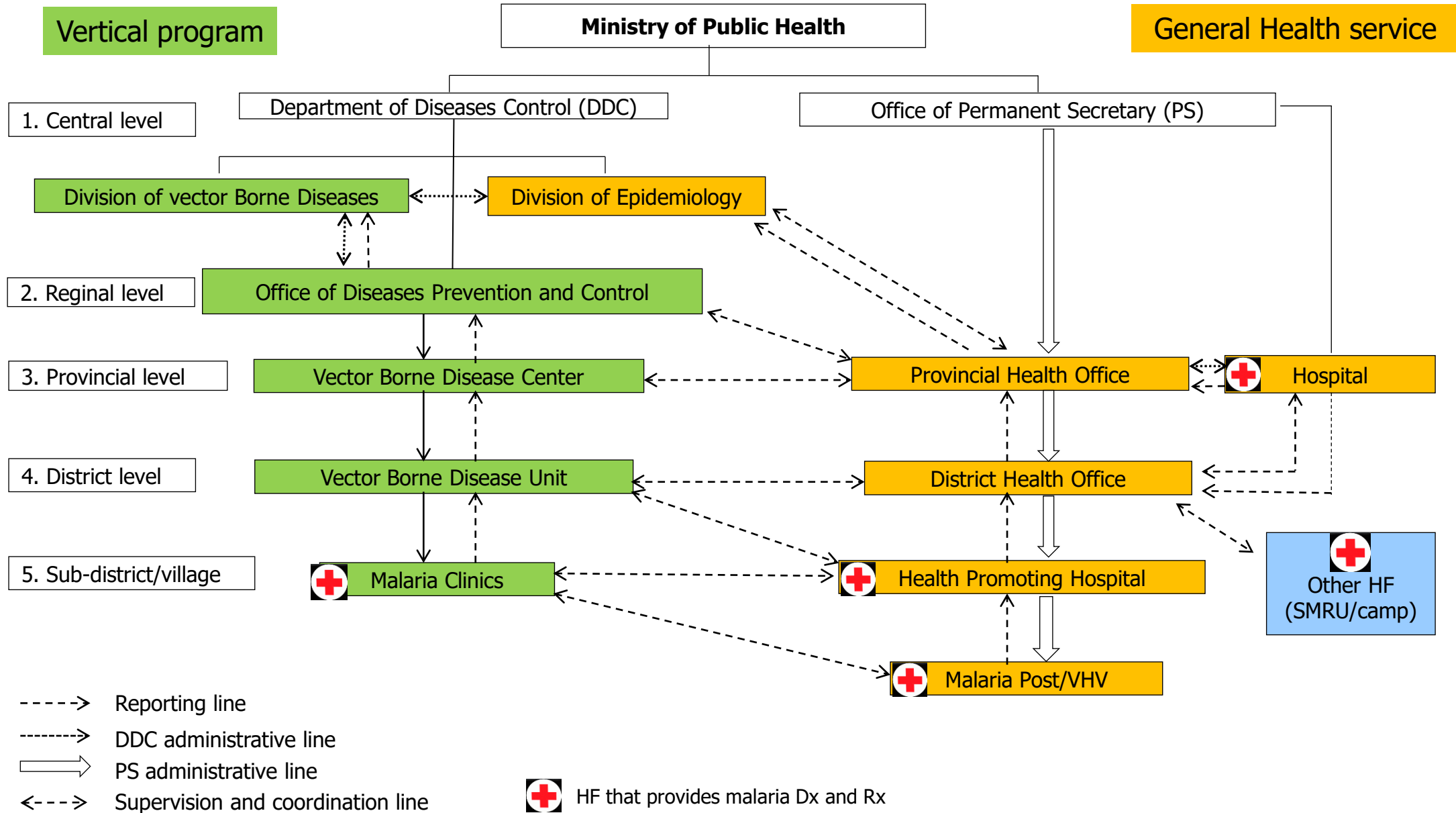
Monitoring and Evaluation

Establish national and international collaboration

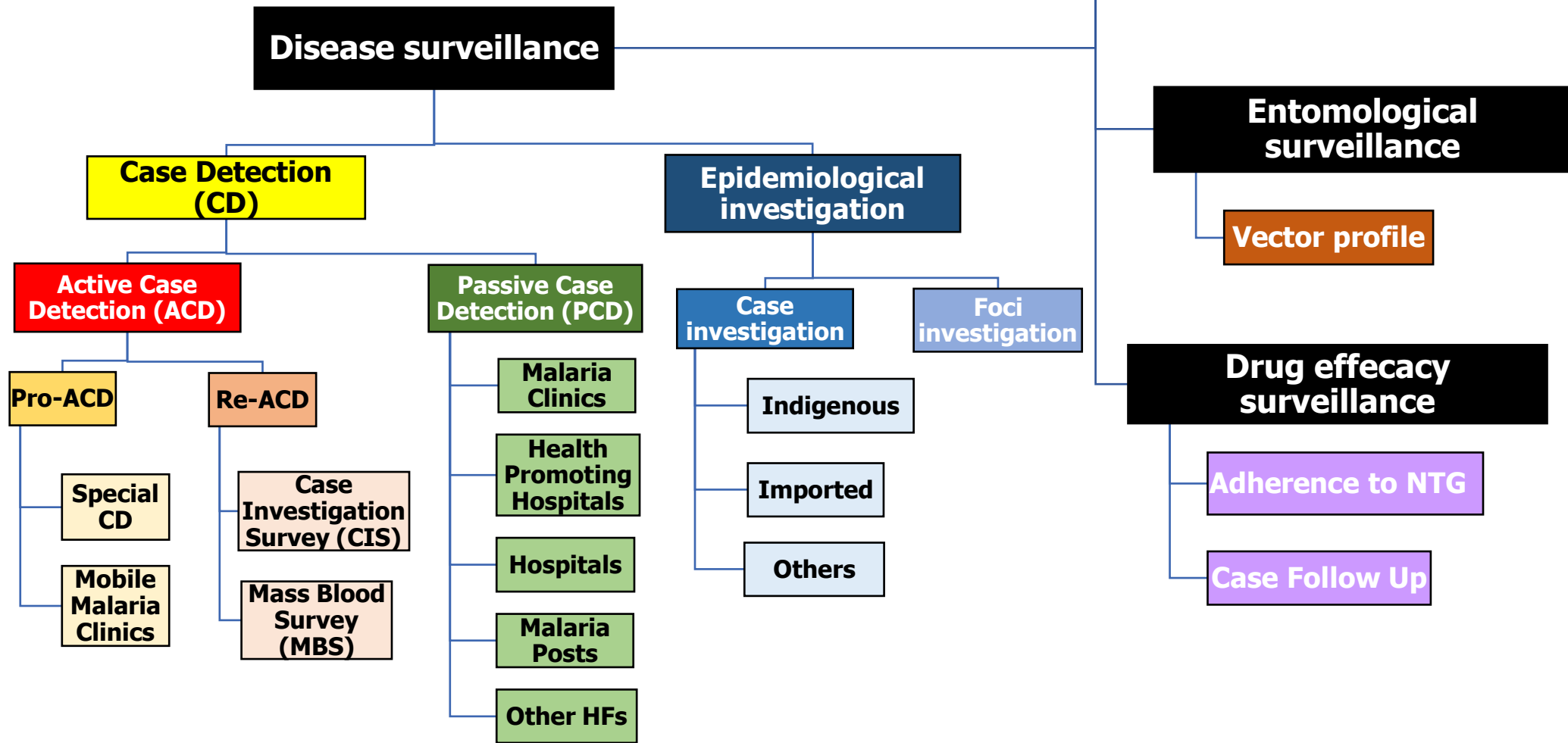
Promote community capacity building

- BCC
- Community participation

Thailand Malaria Elimination Organization



Thailand malaria surveillance system



Thailand's malaria online surveillance system

- **Nearly real-time** information (case-based online system)

includes:

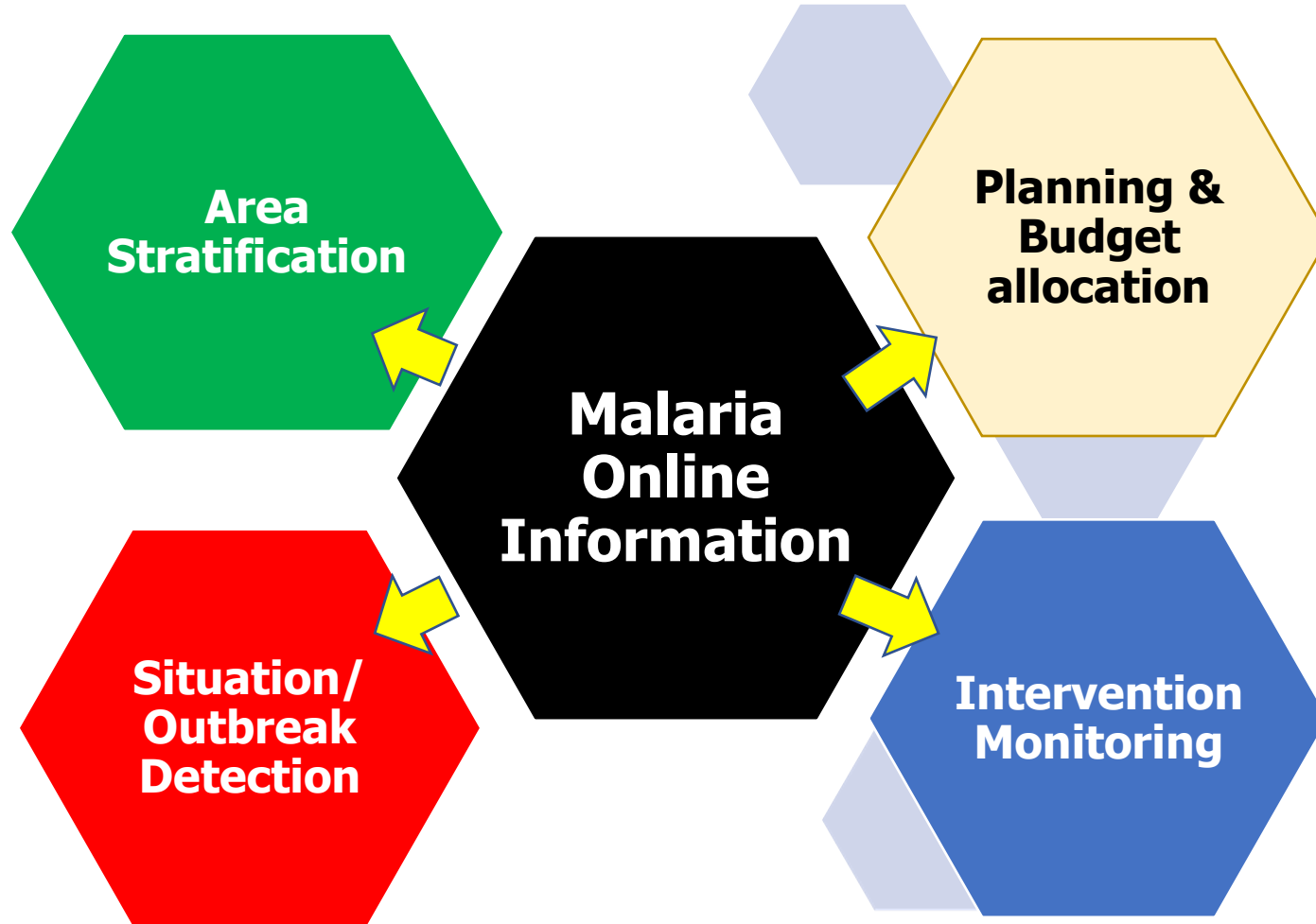
- Malaria situation & epidemic detection
- 1-3-7 strategy monitoring
- Vector control and entomological survey
- Integrated drug efficacy surveillance (iDES)
- Supply chain management (PSM)
- Local fund contribution for malaria

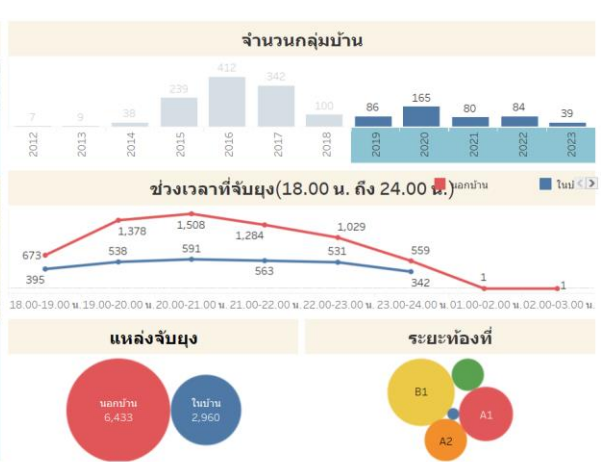
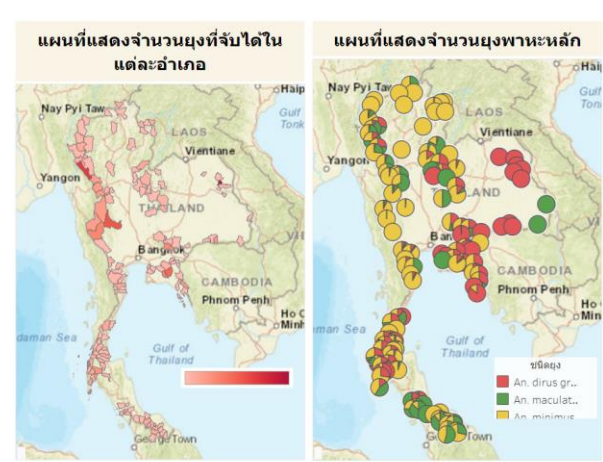
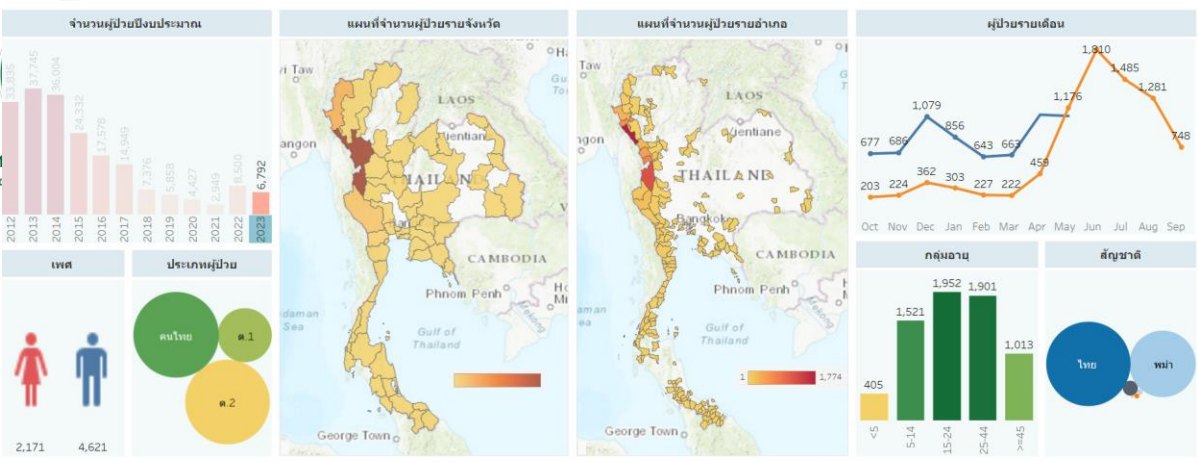
<http://malaria.ddc.moph.go.th>



Surveillance → Information → Action

Utilization of Malaria Surveillance Data for Programmatic Actions





รายชื่อกลุ่มบ้านและชนิดยุง

Province	District	Sub-district	Household	Species	An. dirus group	An. maculatus	An. minimus
กาญจนบุรี	ด่านช้าง	หมู่ที่ 4 ชะแล	5				
กาญจนบุรี	ท่าซุง	หมู่ที่ 2 อ่างหิน	7				
กาญจนบุรี	ท่าซุง	หมู่ที่ 3 ไร่ส้ม	10				
กาญจนบุรี	ท่าซุง	หมู่ที่ 4 ท่าซุง	199				
กาญจนบุรี	ท่าซุง	หมู่ที่ 2 ทุ่งหญ้า	9				
กาญจนบุรี	ท่าซุง	หมู่ที่ 3 ไร่ส้ม	11				

ชนิดยุง

Species	Outdoor	Indoor	Total
An. dirus group	1,190	1,797	2,987
An. maculatus	4,307	1,014	5,321
An. minimus	936	149	1,085
An. ac. onit.	546	32	578
An. ba. rufus	32	54	86
An. ca. tris.	1,536	297	1,833
An. m. tris.	469	153	622
An. p. hippo.	139	4	143
An. an. nularis	62	10	72
An. cu. lific.	27	2	29
An. leachi	182	17	199

Malaria situation

Situation/ Outbreak Detection

Vector profile

Thailand Portal [Detect Warning](#) [Malaria Case By Calendar Year](#) [Malaria Case By Fiscal Year](#)

Malaria Detect Warning > Cumulative Report

Site contents

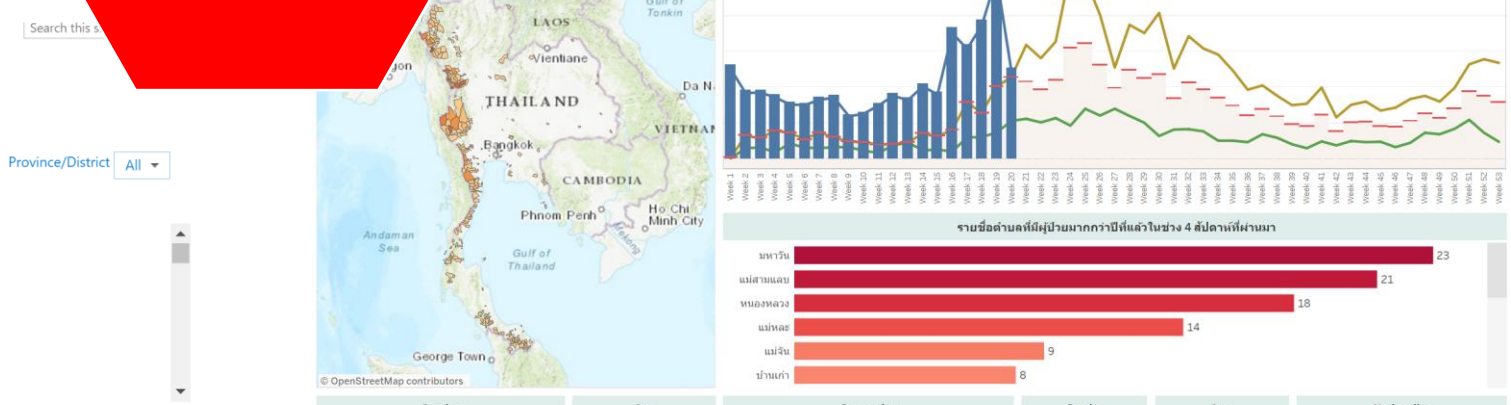
[Cumulative Report](#) | [Cumulative Report District](#) | [Cumulative Report SubDistrict](#)

Year Calendar Weekly

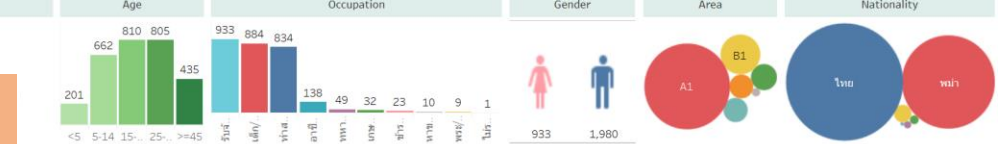
Province/District

Cumulative Report Province

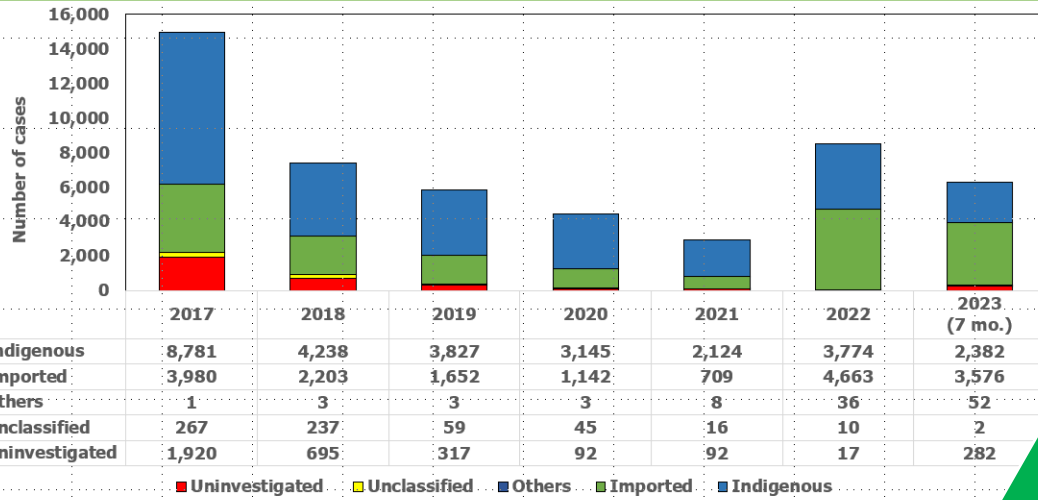
Site Village Province	Calendar 2022		Calendar 2023	
	Cases	Differences	Cases	Differences
All	1,211	623	3,594	2,383
ตาก	684	531	2,435	1,751
แม่ฮ่องสอน	188	134	433	245
กาญจนบุรี	67	23	190	123
นราธิวาส	5	-4	49	44



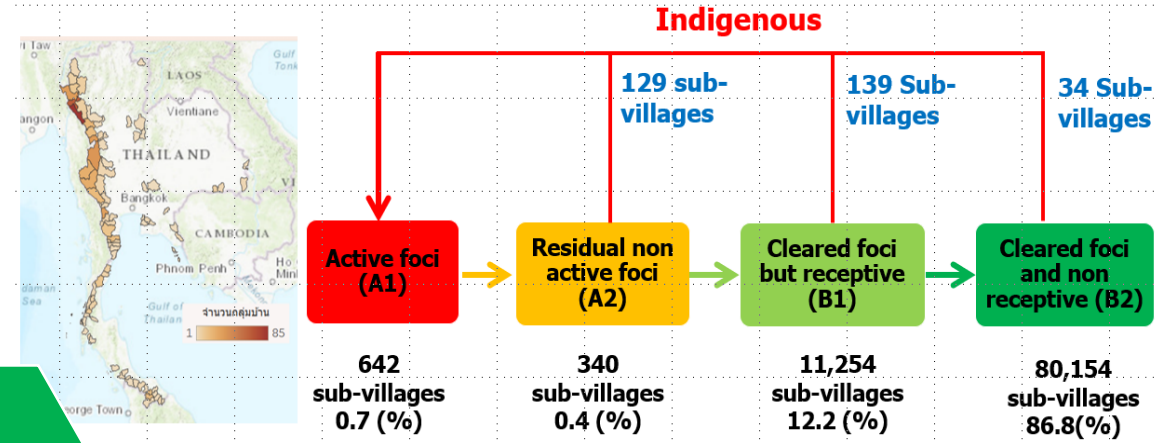
Outbreak detection



Case classification

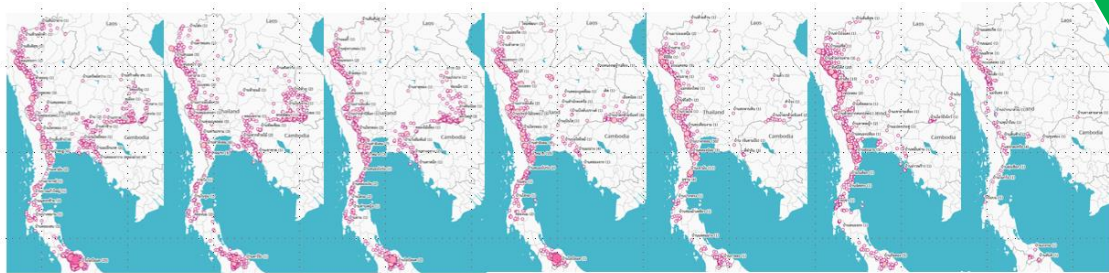


Foci classification



Area Stratification

Active foci mapping



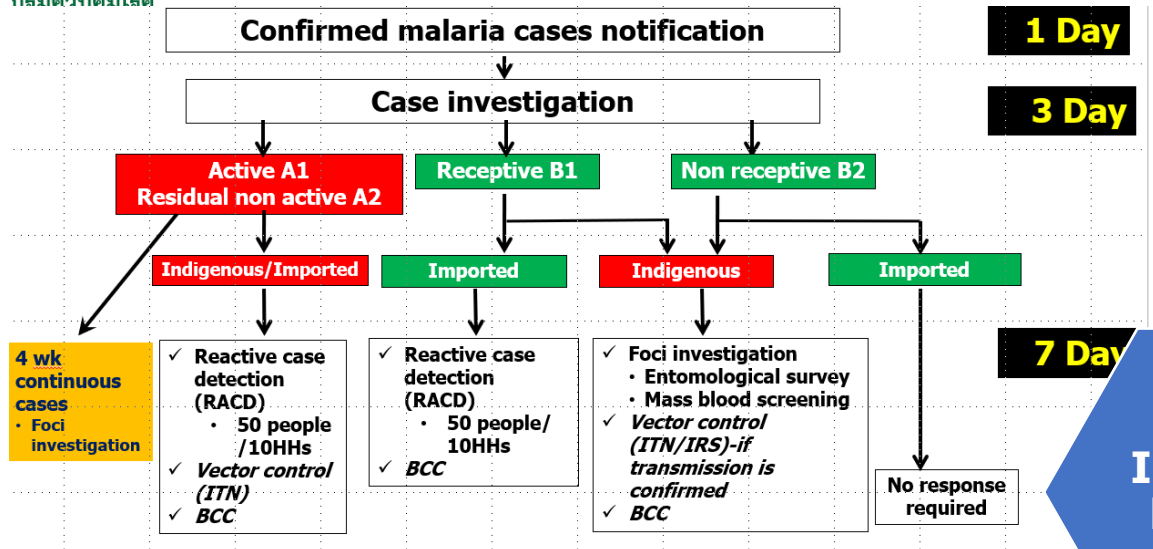
Stratifying foci and intervention packages

Intervention	Active Foci (A1)	Residual non active Foci (A2)	Receptive foci (B1)	Non receptive foci (B2)
Case detection	<ul style="list-style-type: none"> PCD Community (RDT/Microscope) Hospitals (microscope) ACD PACD 2 rounds and persistent indigenous 	<ul style="list-style-type: none"> PCD Community (RDT/Microscope) Hospital (Microscope) ACD PACD 1 round 	<ul style="list-style-type: none"> PCD Hospital 	<ul style="list-style-type: none"> PCD Hospital
Treatment & Follow up	<ul style="list-style-type: none"> Supervise treatment Follow Up 	<ul style="list-style-type: none"> Supervise treatment Follow Up 	<ul style="list-style-type: none"> Supervise treatment Follow Up 	<ul style="list-style-type: none"> Supervise treatment Follow Up
Surveillance	<ul style="list-style-type: none"> 1-3-7 strategy Foci Investigation with entomological surveillance (persistent indigenous) 	<ul style="list-style-type: none"> 1-3-7 strategy Foci Investigation with entomological surveillance (if active) 	1-3-7 strategy	1-3-7 strategy
Vector control	ITNs (at least 90% coverage)	ITNs (at least 90% coverage)	-	-

FY	2017	2018	2019	2020	2021	2022	2023 (7 mo.)
Transmission sub-villages (Active foci)	2,742 (953 active foci)	2,310 (796 active foci)	1,676 (699 active foci)	1,382 (596 active foci)	1,187 (470 active foci)	1,023 (549+87 active foci)	884 (495+65 active foci)
Pf active foci	382	220	166	91	48	67	51
Pop at risk (PAR)	940,966	766,547	614,494	505,836	436,762	423,222	325,415

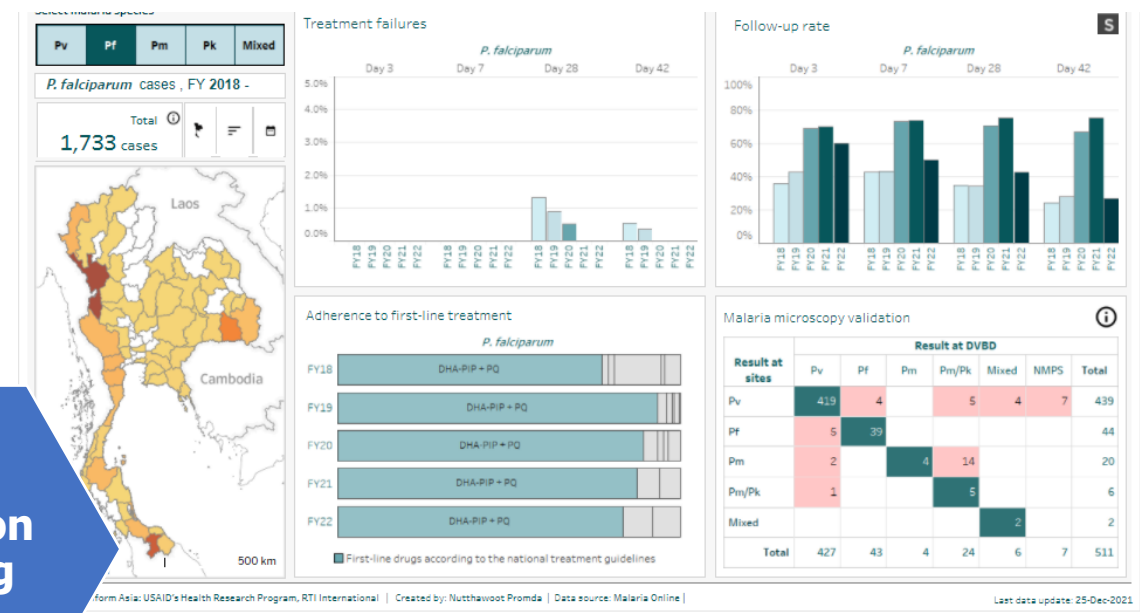
Case notification, investigation, and response (1-3-7 strategy)

กรมควบคุมโรค



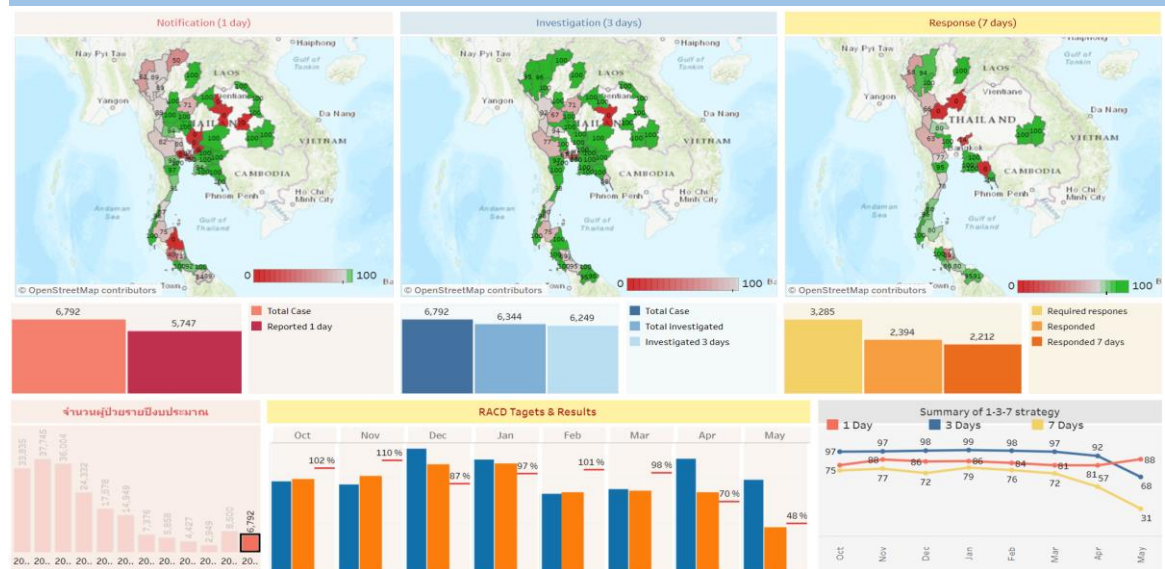
4 wk continuous cases
• Foci investigation

Integrated drug efficacy surveillance

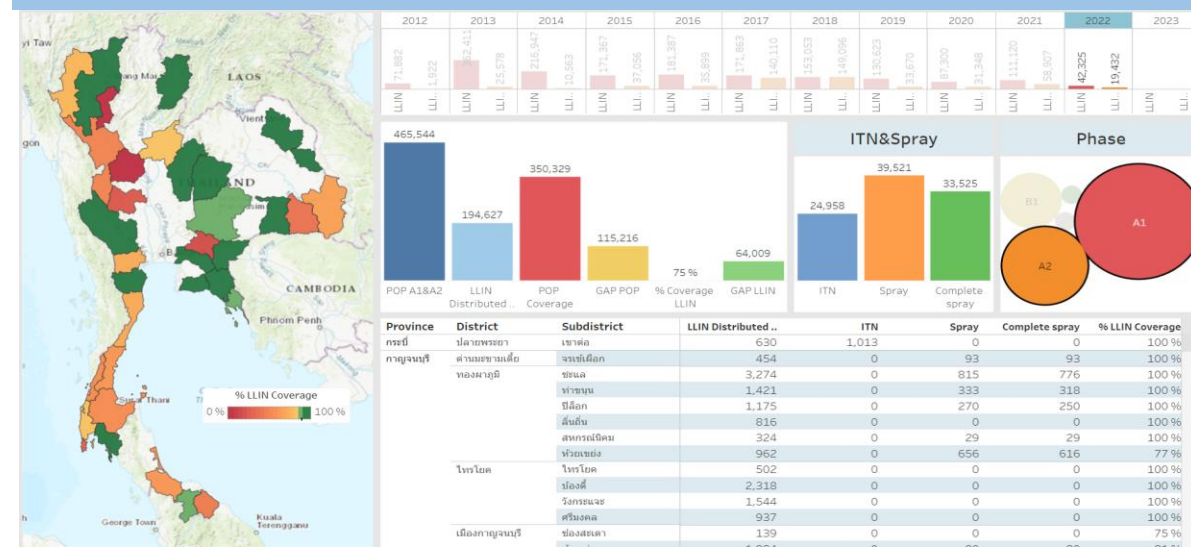


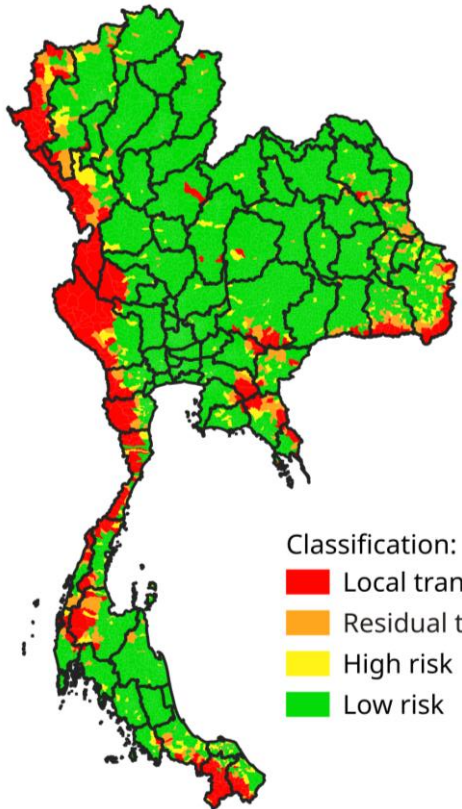
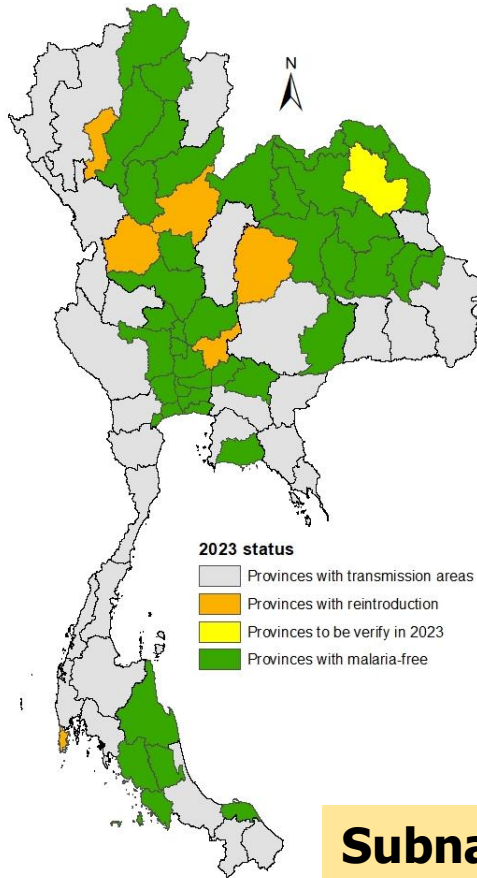
form Asia: USAID's Health Research Program, RTI International | Created by: Nutthawoot Promda | Data source: Malaria Online | Last data update: 25-Dec-2021

1-3-7 results



Vector control coverage





Planning & Budget allocation

Local fund investment

38
จำนวนจังหวัดแพร่เชื้อ

21
จังหวัดที่มีความร่วมมือกับ อบท.

3
มีความร่วมมือผ่านเกณฑ์ตัวชี้วัด

18
มีความร่วมมือถึงไม่ผ่านเกณฑ์ตัวชี้วัด

17
ไม่มีข้อมูลความร่วมมือถึงไม่ผ่านเกณฑ์ตัวชี้วัด

เลือกปีงบประมาณ
2564

จังหวัดแพร่เชื้อ ปีงบประมาณ 2564

สตร.1	1. เชียงใหม่	●
	2. น่าน	✗
	3. แม่ฮ่องสอน	●
	4. ลำปาง	✗
สตร.2	5. ตาก	✗
	6. พิษณุโลก	✗
	7. เพชรบูรณ์	✓
สตร.3	8. อุทัยธานี	✗
สตร.5	9. กาญจนบุรี	✗
	10. ประจวบคีรีขันธ์	●
	11. เพชรบุรี	●
	12. ราชบุรี	●
สตร.6	13. จันทบุรี	●
	14. ฉะเชิงเทรา	✗
	15. ชลบุรี	●
	16. ตราด	●
	17. ปราจีนบุรี	✗
	18. ระยอง	✗
	19. สระแก้ว	●
สตร.7	20. กาฬสินธุ์	●
	21. สกลนคร	✗
	22. ร้อยเอ็ด	✗
	23. นครราชสีมา	●
	24. สุรินทร์	●
สตร.10	25. นครราชสีมา	✗
	26. ยโสธร	✗
	1. ศรีสะเกษ	●
	27. อุบลราชธานี	✗

2564

จังหวัดศรีสะเกษ

การสนับสนุนจากอบท. ในพื้นที่ค่าบแพร่เชื้อ ปีงบประมาณ 2564

10%
%ค่าบแพร่เชื้อที่มีความร่วมมือ

1
ค่าบแพร่เชื้อที่มีความร่วมมือ

10
ค่าบแพร่เชื้อในพื้นที่

฿29,100
งบประมาณที่ได้รับสนับสนุน (บาท)

1
จำนวนโครงการภาคี

ส่วบ	#	ช่บ	จำนวนโครงการภาคี (โครงการ)	จำนวนงบประมาณที่ได้รับโครงการภาคี (บาท)
กันทรลักษ์	1.	ร่ง	0	0
	2.	ละล่าย	0	0
	3.	เส่งชัย	0	0
ขุขันธ์	4.	บรือใหญ่	1	29,100
ขุนท่าย	5.	กัทรอม	0	0
	6.	บักดอง	0	0
	7.	น่วยจันทร	0	0
อุลิ่งท	8.	โกลดล	0	0
	9.	ดงร็ก	0	0
	10.	โพทรลณ	0	0
		รวม	1	29,100

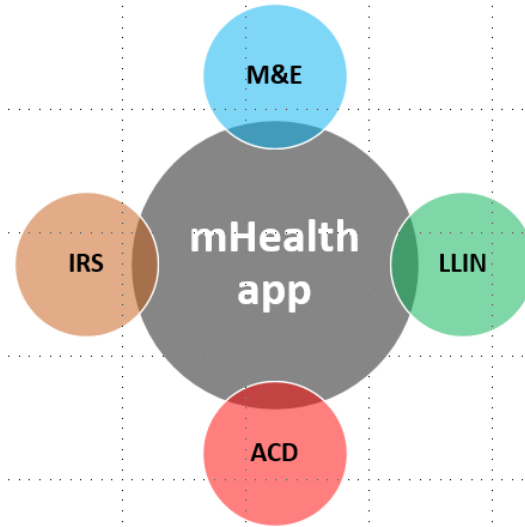
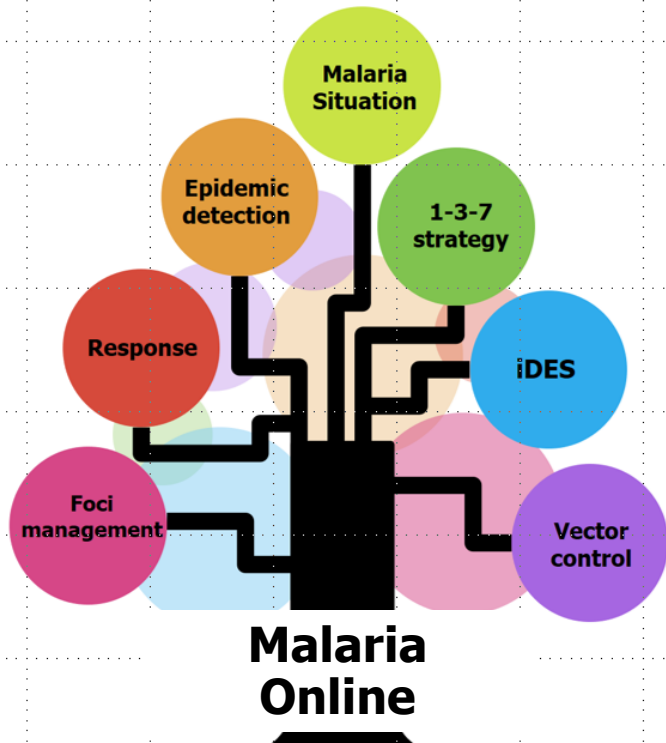
Subnational verification

Prevention of re-establishment (PoR)

LAO contribution from FY 2017-2020 as reported from PHO

Health Region	Fiscal Year				Total
	2017	2018	2019	2020	
1	78,525	143,012	240,557	101,890	563,984
2	-	-	31,470	36,200	67,670
3	-	-	-	125,600	125,600
5	646,752	400,512	424,775	576,560	2,048,599
6	240,200	435,500	598,525	1,146,292	2,420,517
9	-	-	-	207,200	207,200
10	76,000	25,000	380,300	662,520	1,143,820
11	392,950	-	333,500	143,400	869,850
12	169,770	272,250	872,139	2,066,619	3,380,778
Total	1,604,197	1,276,274	2,881,266	5,066,281	10,828,018

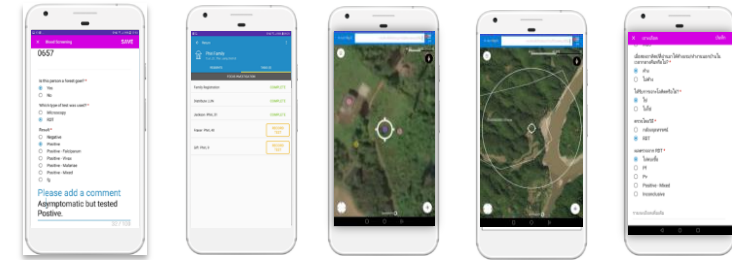
Mobile Technology for foci management



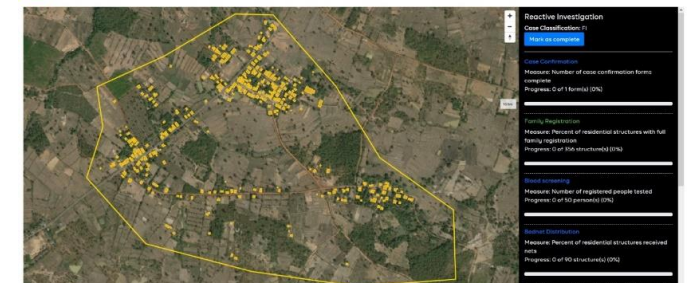
“Rapid response with quality interventions to targeted population”

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



A1 - บ้านท่าทาง หมู่2 (3421030201) - สถิติสี - 2019-10-23 - [Source] Investigation

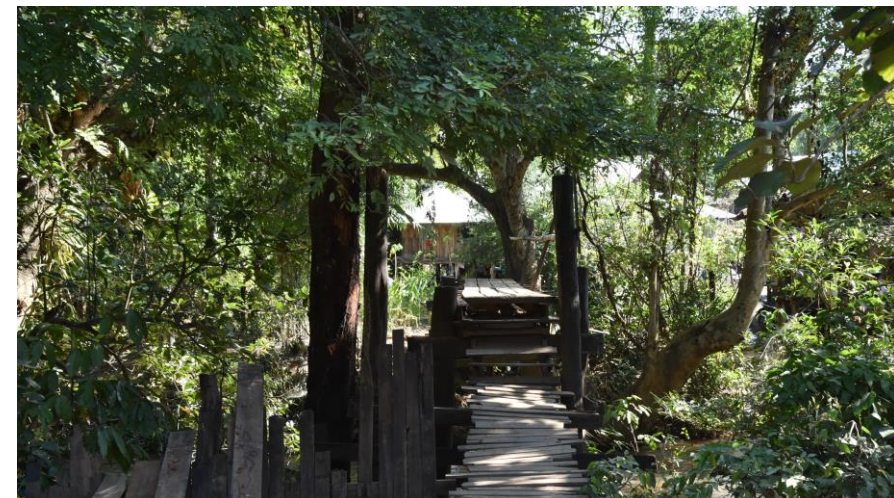
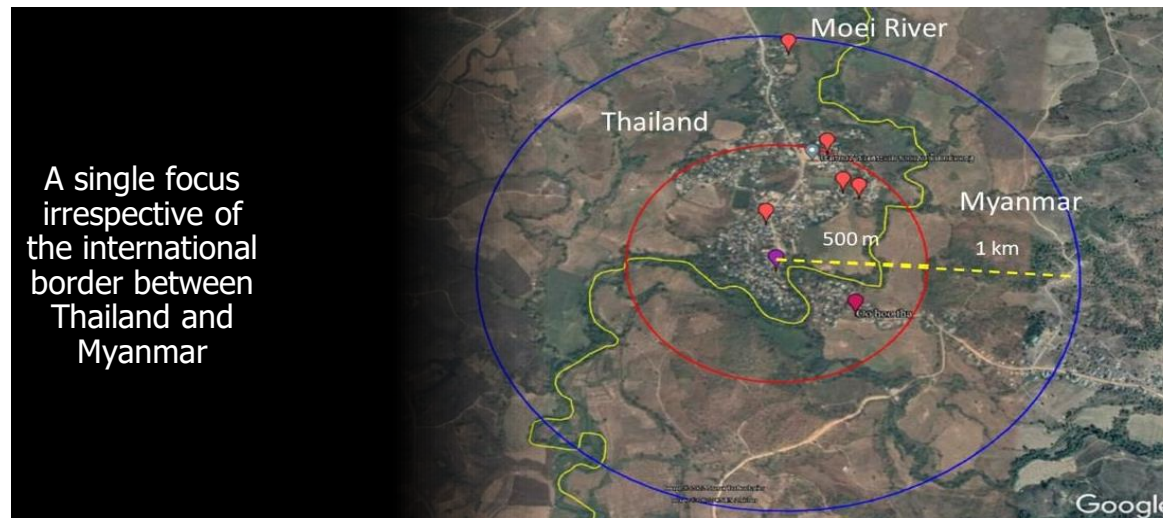


Challenges and way forward:

Challenges	Way forward
<p>Migration of refugees across porous borders and implementation of outbreak response along the western border</p>	<ul style="list-style-type: none"> ▪ Develop and implement a <u>Preparedness and Response Plan</u> from routine to “proactive” approaches, with foci targeted activities including worksites, temporary camps/shelters, migrant workers ▪ Develop a contingency planning (risk of outbreaks increasing in magnitude!) and resource mobilization – HR, commodities etc. including flexibility in funding ▪ New interventions i.e. Chemoprevention, m-health, foci covered all high risk groups ▪ Intensify coverage of prevention measures through engagement of volunteer networks, CSOs and military

Challenges and way forward:

Challenges	Way forward
<p>Effective intervention of foci management (1-3-7 approach)</p>	<ul style="list-style-type: none"> ▪ Implement Foci-targeted approach (i.e., responses should cover the entire foci beyond Thai border) ▪ Improve mHealth features to be better quality of foci management and RACD ▪ Enhance more roles of health volunteers, CSOs, and relevant ministries





Thank You