

Inform Asia: USAID's Health Research Program

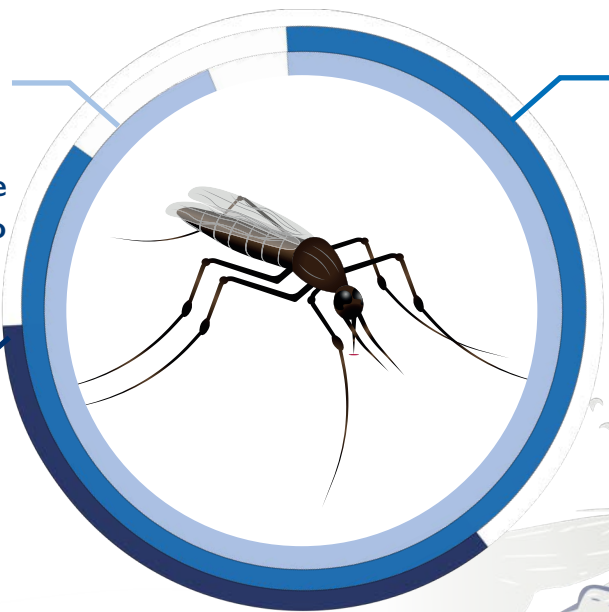
End of Program Summary

8 Years

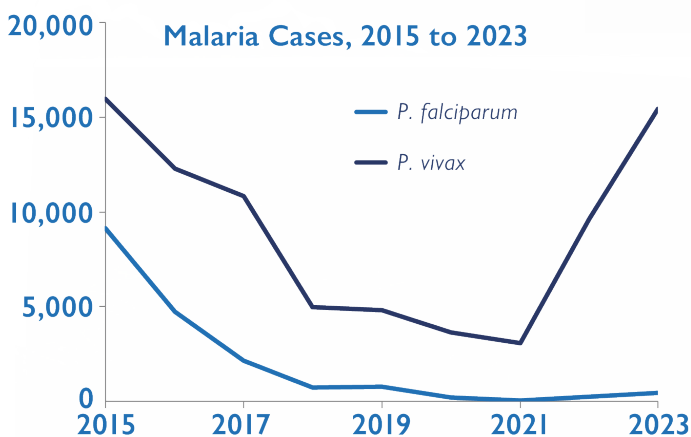
The United States Agency for International Development (USAID) launched Inform Asia, with funding from the U.S. President's Malaria Initiative, to harness the power of data for malaria elimination. From 2015 to 2023, Inform Asia worked hand in hand with Thailand's Ministry of Public Health to strengthen malaria surveillance, assess strategies and tools, and channel evidence into strategic decisions.

A survey conducted in the program's final year found that **>90%** of malaria officers used the surveillance database in the previous two weeks.

In **Inform Asia's** early years, only **35%** of respondents reported analyzing data this frequently.



86% of final year survey respondents felt that the database has sufficient information for planning, monitoring, and evaluating the malaria program.



In 2015, when the Inform Asia program was first established, there were 23,668 malaria cases in Thailand. This number decreased to just 2,949 cases in 2021; however, there has been a recent rebound to 16,524 cases in 2023.

Harnessing data can help Thailand get back on track to malaria elimination by identifying patterns and risk factors in the new outbreak areas.

Deliverables

106 strategic information products*

29 elimination strategies and tools

18 oral conference presentations

15 Scientific poster presentations

12 new surveillance database features

8 peer-reviewed publications

*Including research briefs, infographics, job aids, policy talking points, and success stories.



The electronic database integration is critically valuable for achieving malaria elimination in Thailand. There will need to be more trainings to build local capacity for continuous improvement in malaria surveillance and program implementation.

Dr. Prayuth Sudathip
Former Chief of Malaria Elimination Unit,
Ministry of Public Health



Photo credit: USAID's Inform Asia



A data specialist discusses how she records and uses surveillance data in Tak Province.



Photo credit: USAID's Inform Asia

Women Leaders Driving Malaria Elimination

Women are well represented in the workforce of Thailand's NMP, demonstrating the Ministry of Public Health's commitment to ensuring women are equal partners in the fight to eliminate malaria.

Their visibility spans from village health volunteers with local expertise to director roles with decision-making authority for Vector-Borne Diseases, National Reference Laboratory, and Entomology teams. Engaging women, youth, and minority communities in management and leadership is crucial for developing high-quality health programs and for promoting equality.

88% of Inform Asia's publications included a woman as lead or senior author.

39% of conference presentations were delivered by women.



Photo credit: USAID's Inform Asia

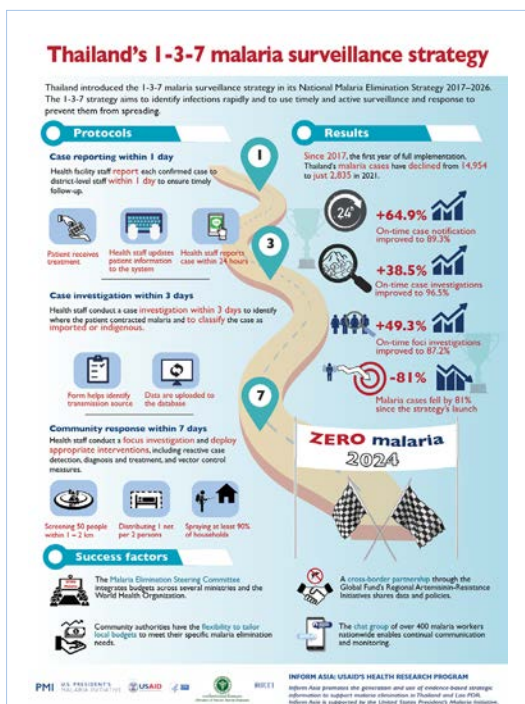
I-3-7 Surveillance Strategy

Inform Asia collaborated with the Division of Vector Borne Diseases (DVBD) to launch and assess the I-3-7 surveillance strategy, under which health officials report every malaria case within 1 day, investigate each case within 3 days, and deploy an appropriate response within 7 days. This strategy has become a cornerstone of malaria elimination across Asia.

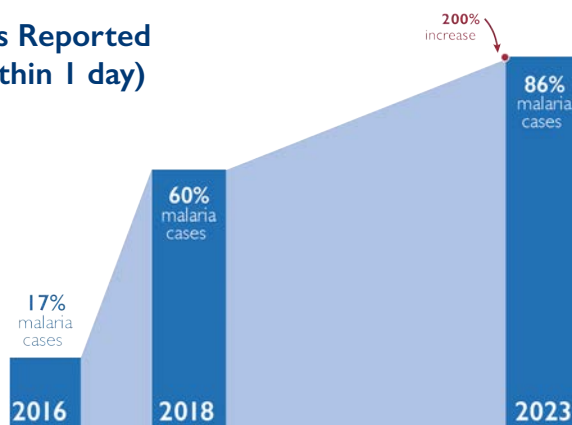
After support from Inform Asia established a I-3-7 dashboard in Malaria Online, on-time reporting of malaria cases within 1 day rose from 17% in 2016 to 60% in 2018, an improvement of more than 200%. This increased to 85.5% by Inform Asia's final year.

Inform Asia later conducted a study that found that the use of the I-3-7 surveillance strategy helped Thailand reduce active malaria areas by 68.5% since 2013, signaling the effectiveness of case investigation combined with focus investigation and response in supporting malaria elimination.

Investing in infectious disease surveillance allows countries to respond well to unanticipated threats, supporting global health security.



Malaria Cases Reported On Time (within 1 day)



Routine Data as Localization

All of the strategic information generated by Inform Asia's partnership with the NMP highlighted routine surveillance data as the central data source. This commitment showcases local leadership and honors the tremendous workforce who record and report on each malaria case. Routine information systems are sustainable, long-term, and country-owned, so investments in these systems are at the heart of localization.

Inform Asia's research on malaria elimination strategies and best practices was always co-designed with the NMP and aligned with the country's strategic priorities. Strategic information is most compelling when produced in local languages.



Photo credits: USAID's Inform Asia



National and subnational malaria officers represented a majority of the authors on each of the program's **8** peer-reviewed publications.



Active case detection is the best strategy to fight seasonal peaks and outbreaks. However, it cannot work without the right targeting, right time, and right cycle. The sooner we find patients, the faster we can treat them and reduce communal risk.

Preeyaporn Suida
Village Health Volunteer
Yala Province

งานวิจัยการประเมินความคุ้มค่าในการกำจัดโรคไข้มาลาเรียของประเทศไทย

ตั้งแต่ปี 2543 เป็นต้นมา จำนวนผู้ป่วยโรคไข้มาลาเรียในประเทศไทยลดลงอย่างมาก แต่ประชากรครึ่งหนึ่งของประเทศ ยังคงอาศัยอยู่ในเขตที่มีการแพร่เชื้อ

ถ้าเราสนับสนุนการกำจัดมาลาเรียอย่างต่อเนื่อง ภายในระยะเวลา 20 ปี จะสามารถป้องกันการติดเชื้อได้ไม่ต่ำกว่า 3 ล้านราย

คิดเป็นอัตราผลตอบแทนของการลงทุน 1 บาท ได้คืนสูงสุดถึง 15 บาท

ความคุ้มค่าจากการกำจัดโรคไข้มาลาเรีย

เศรษฐกิจในภาพรวม	ค่าใช้จ่ายภาคครัวเรือน	ระบบการสาธารณสุข
13.6 พันล้านบาท	13.7 พันล้านบาท	10.4 พันล้านบาท

หากเราไม่สนับสนุนการกำจัดมาลาเรียอย่างต่อเนื่อง อาจทำให้จำนวนผู้ป่วยกลับมาเพิ่มขึ้นอีกครั้งได้

Research for Action

Inform Asia and the NMP transformed surveillance results into strategic information to harness the power of data to accelerate malaria elimination.

Cost-Benefit Analysis

A cost-benefit analysis found that for every Thai baht invested in malaria elimination, the country could see returns of up to 15 Thai baht in savings from fewer hospitalizations and other impacts. This analysis provided the evidence base to convince the Royal Thai Government to fully fund the National Malaria Elimination Strategy 2017–2026.

Active Case Detection

Thailand uses active case detection to look for malaria cases in communities. In elimination settings, however, this strategy can become laborious and expensive, often yielding few cases. In collaboration with the NMP and partners, Inform Asia designed a protocol to optimize the design, targeting, and implementation of proactive case detection, based on biostatistical, geospatial, and costing analyses. Subnational officers can use the protocol to plan effective, high-quality screenings to disrupt malaria transmission.

School-Aged Children

School-aged children, aged 5–14 years, represent only 12% of Thailand's population but are consistently the highest incidence age group for malaria. Inform Asia combined quantitative analyses with and qualitative results from stakeholders in Tak and Mae Hong Son Provinces, to monitor the situation, identify risk factors for children, and propose innovative solutions. These findings will help the DVBD implement better solutions to protect school-aged children.

A young boy waits for results of a malaria test in Tak Province.



Photo credits: USAID's Inform Asia



iDES lays a
groundwork for all health facilities to
strengthen and sustain malaria elimination
through specific medicines, accurate
diagnoses, and complete and safe treatment.

Dr. Aungkana Saejeng
Senior Professional Public Health Technical Officer,
Chiang Mai Province

Drug Efficacy Surveillance

Thailand was the first country to implement routine drug efficacy surveillance for malaria, important for monitoring malaria treatments. This work is crucial in the Greater Mekong Subregion, where the continued evolution of multidrug-resistant parasites make malaria elimination increasingly urgent.

The NMP had been monitoring treatment outcomes with sentinel site-based therapeutic efficacy studies. As malaria burden declined, however, these studies struggled to recruit sufficient patients for analyses.

In 2017, Inform Asia and other partners supported the NMP to pilot integrated drug efficacy surveillance (iDES) in three provinces. The iDES protocol requires four follow-up visits after confirmed malaria diagnosis to ensure successful parasite clearance. The following year, the program became nationwide, and within 5 years, 77% of malaria patients were reporting for at least one follow-up visit.



Photo credits: USAID's Inform Asia

A patient awaits a blood sample to confirm
whether he is cleared of malaria parasites.

Blood slides identify malaria parasites.



Photo credits: USAID's Inform Asia



I learned how to use
the national malaria information
system to help me plan my work. The
[iDES dashboard] helps me to ensure that
each malaria patient receives complete
treatment and cure.

Kanyarat Lausatianragit
Technical Officer, Sisaket Province

Inform Asia and the NMP also developed a new iDES dashboard in Malaria Online to track both clinical and laboratory data. The interactive visualizations present key indicators, including treatment adherence, follow-up completeness, and recurrent cases, in addition to identifying areas and communities where results are lagging.

Later, the NMP and Inform Asia found the efficacy of the recommended treatment was waning in two eastern provinces through routine analysis of iDES data triangulated with external surveillance results. The two provinces accounted for just 14% of national malaria cases, but 67% of treatment failures. This information prompted Thailand to revise its treatment policy in the affected provinces to ensure full recovery for all malaria patients.

Subnational Verification

In 2019, Thailand launched a subnational verification program to recognize provinces that have interrupted local malaria transmission. In the program's first year, 33 provinces were designated "malaria free," representing nearly half of the country's 77 provinces.

Inform Asia supported the NMP to strengthen the nascent program by developing a suite of verification tools, including a self-assessment checklist and timeline to prepare provincial officers to confidently lead their jurisdictions toward elimination.

Inform Asia and the NMP worked with provincial officers to localize data analysis to ensure that eligible provinces provide the documentation required to affirm, beyond reasonable doubt, that they are free from local malaria transmission. This included helping provinces prepare data review briefs, detect missing data and primary sources, and identify other surveillance challenges, such as unclassified malaria cases that could jeopardize their verification as malaria free.



Inform Asia's support has helped provinces meet the elimination criteria by explaining which datasets were needed and how to prepare those data accordingly and to the same standard. This work is important as Thailand nears elimination and can also help other countries in this region without experience on subnational verification processes.

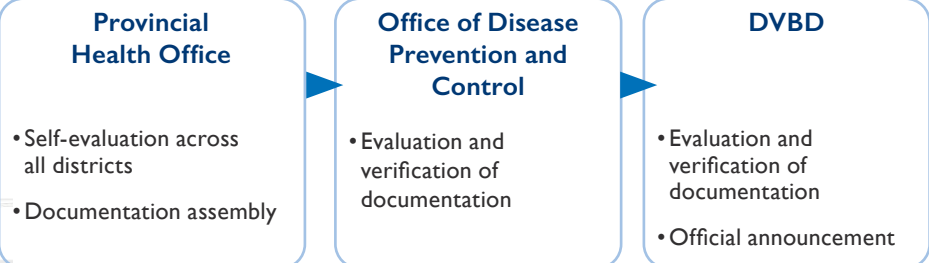
Niparueradee Pinyajeerapat
Public Health Specialist, USAID



Photo credit: USAID's Inform Asia

There are currently **46** malaria free provinces, as Thailand gains ground toward elimination.

Levels of review in Thailand's subnational verification program



Partnerships to Expand Usable Data and Build Resilience

Malaria relies on humans, mosquitos, and the environment for sustained transmission. To better track these relationships, advanced analyses increasingly incorporate varied data sources. Inform Asia partnered with the SERVIR-Mekong project supported by USAID, NASA, and implemented by the Asian Disaster Preparedness Center, to collate climate and environment datasets to analyze with epidemiological data, thereby building resilience to climate uncertainty. Through a special initiative between USAID and the Thailand International Cooperation Agency to jointly lead regional development assistance, Inform Asia supported cross-border learning on entomology for malaria elimination.

This work led to Inform Asia's stratification for prevention of reestablishment planning. The analysis categorized Thailand's 7,425 sub-districts into 4 strata, based on epidemiological, demographic, and environmental data, to reduce the risk of renewed transmission in malaria-free areas. The Ministry of Public Health can manage the stratification and update results with new data using a user-friendly module that Inform Asia developed in the Jamovi open-source software.

