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THAILAND'S SUCCESSES IN MOBILISING DOMESTIC RESOURCES FOR MALARIA ELIMINATION

APMEN CASE STUDY

Contents

Abbreviations 1

Introduction 2

Efforts in domestic resource mobilisation for malaria 4

- Universal Health Coverage 4
- Local Administrative Organisations 5
- Private sector 6

Impact and challenges 7

- Universal Health Coverage 7
- Local Administrative Organisations 9
- Private sector 9

Recommendations 10

Conclusion 10

References 11

ABBREVIATIONS

APLMA	Asia Pacific Leaders Malaria Alliance
APMEN	Asia Pacific Malaria Elimination Network
CHF	Community Health Fund
CSMBS	Civil Servants' Medical Benefit Scheme
DVBD	Division of Vector Borne Diseases
LAOs	Local Administrative Organisations
MHIS	Migrant Health Insurance Scheme
NHSO	National Health Security Office
NMES	National Malaria Elimination Strategy
POR	Prevention of re-establishment
RAI	Regional Artemisinin-resistance Initiative
SSS	Social Security Scheme
UCS	Universal Coverage Scheme
UHC	Universal Health Coverage
WHO	World Health Organization

ABOUT DVBD

The Division of Vector Borne Diseases (DVBD) manages Thailand's Malaria Elimination Program. The DVBD is under the Department of Disease Control (DDC), Ministry of Public Health, Kingdom of Thailand. The DDC's mission is to research, develop, standardize, apply and transfer knowledge and technologies to prevent and control diseases effectively.

ABOUT APLMA-APMEN

Asia Pacific Leaders Malaria Alliance (APLMA) is an alliance of heads of government committed to achieving a region free from malaria by 2030. APLMA is a distinctive platform facilitating collective regional leadership for malaria elimination and health security.

Asia Pacific Malaria Elimination Network (APMEN) is a network of 22 countries and 54 partner institutions. APMEN facilitates regional and multi-sectoral collaboration around evidence-based practices and fosters innovation. Jointly, APMEN and APLMA act as an 'evidence-to policy' vehicle that links directly to leadership levels across the region.

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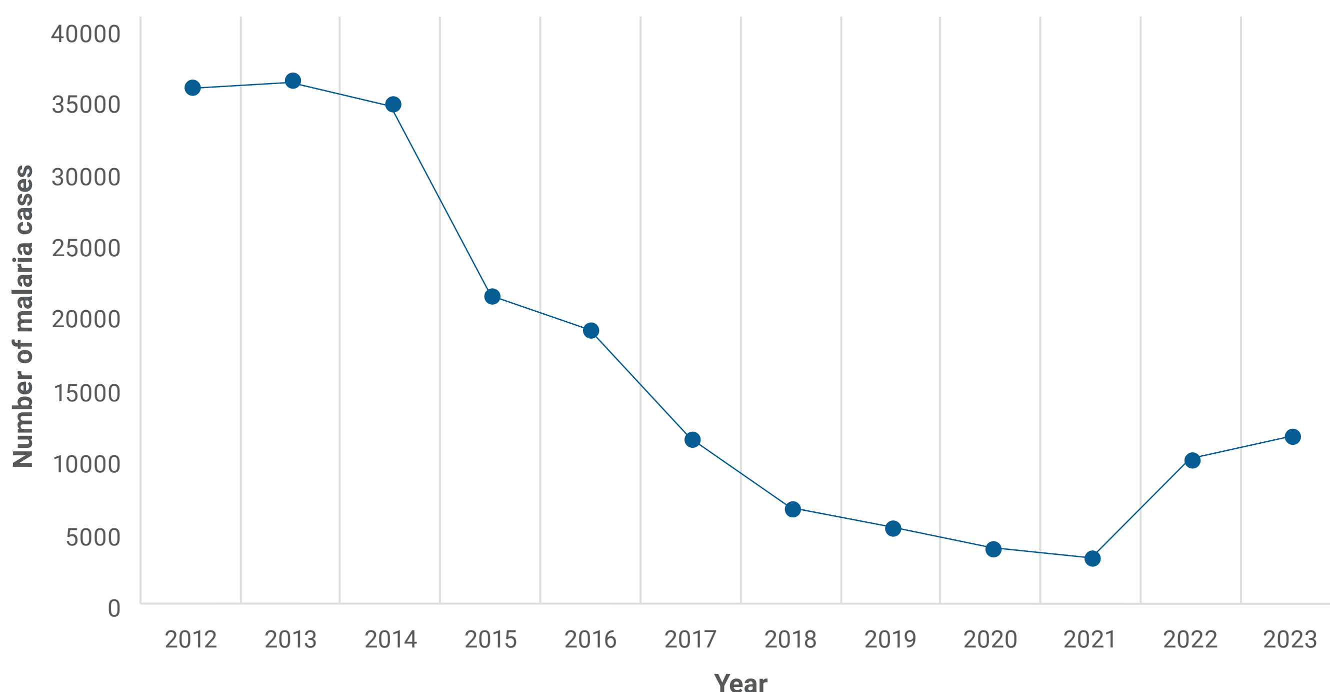
Introduction

Thailand has made substantial progress to reduce its malaria burden. As of 2021, only 3,266 cases were reported nationwide, down from 35,912 cases in 2012[1]. Among the country's 77 provinces, 46 have now been verified to be malaria-free[2]. *Figure 1* showcases the impressive fall in the number of malaria cases since 2012. Thailand's consistent strides towards elimination has made it part of E2025, a cohort of 25 nations identified by the World Health Organization (WHO) that have the potential to eliminate malaria transmission by 2025. This aligns with Thailand's own target of ending transmission of *Plasmodium falciparum* malaria by 2025 and achieve zero local transmission of all malaria by 2026[3].

Figure 1: Number of malaria cases in Thailand, 2012 - present

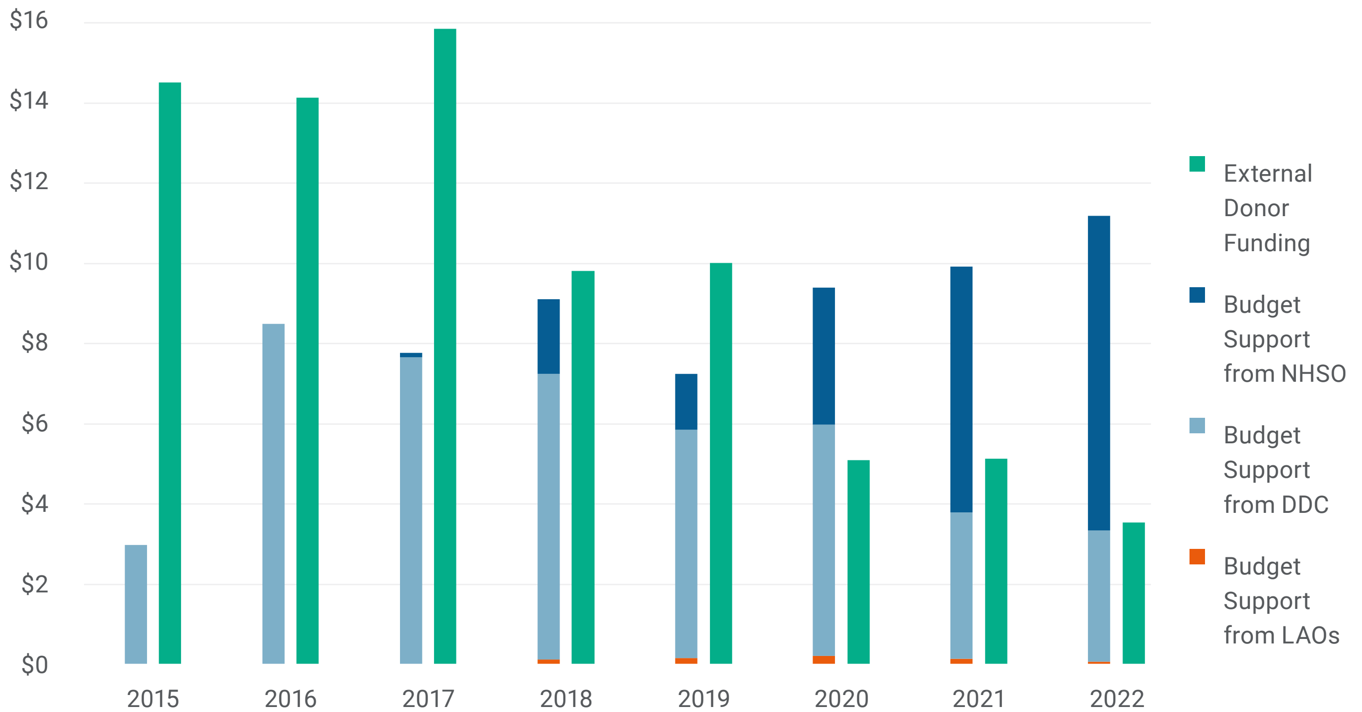


Data Source: Malaria Online (https://malaria.ddc.moph.go.th/malariaR10/index_newversion.php), accessed 8 Aug 2023

As an upper middle-income country with relatively low malaria burden, Thailand is increasingly facing a reduction in international donor financing support. Yet, prevention of re-establishment (POR) and last-mile elimination efforts require substantial funding — of which an increasing share would need to come from domestic sources. Continued funding and focus on elimination are especially important as malaria can stage a comeback at any time. This is well-illustrated by the recent spike in cases along the Thai-Myanmar border due to undermined health services stemming from ongoing unrest in Myanmar, with the number of cases tripling in 2022 to 10,157. Pockets of transmission remain concentrated in the mountainous border regions.

Thailand has made great efforts in mobilising domestic resources to finance for malaria elimination. *Figure 2* provides an overview of the malaria funding landscape by source and year. While external donor funding has steadily decreased since 2017, domestic funding for malaria has increased over the past few years, especially since 2019. The most dramatic increase in domestic funding support has come from the National Health Security Office (NHSO). With a proportional share of domestic funding at 0.5% in 2017 and 53.4% in 2022, the NHSO has become the largest single domestic funding source in Thailand. Additionally, since 2018, local administrative organisations (LAOs) have also begun contributing to the domestic budget, although their contributions thus far have been comparatively modest at less than 2% of total contributions. These efforts correspond to Thailand's commitment to the long-term sustainability of its malaria elimination programme, as highlighted in its National Malaria Elimination Strategy (NMES) 2017–2026[3].

Figure 2: Malaria funding (in USD millions) in Thailand, by source and year



Note: External donor funding includes Global Fund, USAID, WHO, bilateral aid (JICA), other contributions with unspecified sources.

Data Source: Global Fund 7th Replenishment, Funding Request Narrative Table 11

This case study spotlights three successful initiatives from Thailand which have enabled the mobilisation of domestic resources for malaria elimination: the development of Universal Health Coverage (UHC), engagement with LAOs, and engagement with the private sector.

[i] Local administrative organisations are local government units of Thailand. There is a total of 7,853 LAOs, which consist of a mix of provincial administrative organisations (PAOs), sub-district administrative organisations (SAOs), municipalities, as well as special units like Bangkok Metropolitan Administration (BMA) and the City of Pattaya[34]

Efforts in domestic resource mobilisation for malaria

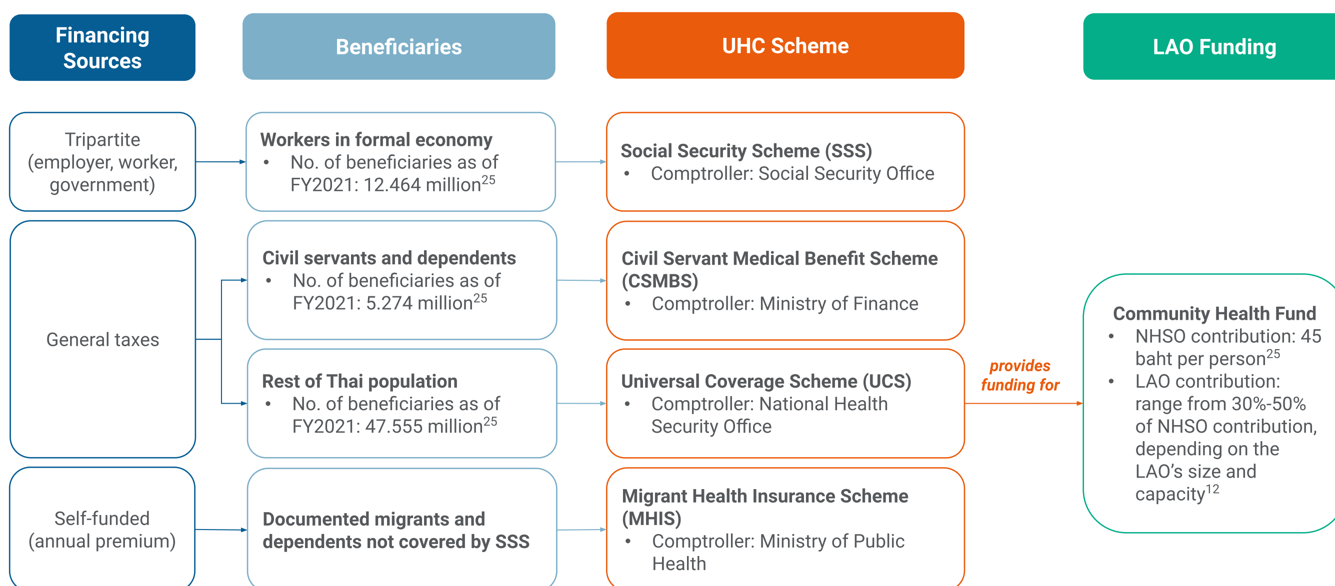
UNIVERSAL HEALTH COVERAGE

The development of UHC in Thailand has been instrumental in improving access to malaria-related care, as well as mobilising domestic resources to support its malaria elimination programme. Prior to 2002, only 70% of the Thai population had health coverage through four fragmented insurance or welfare programmes: the Social Security Scheme (SSS) for formal sector employees, the Civil Servants' Medical Benefit Scheme (CSMBS) for active and retired civil servants, the Medical Welfare Scheme which catered to the poor, elderly, disabled, and children under twelve, as well as the Voluntary Health Card Scheme, a contributory health insurance with government support for individuals working in informal sectors. However, approximately 18 million people, mainly informal sector workers with lower incomes, lacked any form of coverage[4]. Health-related expenses paid directly out of pocket constituted 33% of the total healthcare spending[4].

In a significant overhaul of the healthcare system in 2002, Thailand passed the National Health Security Act and established the NHSO. The Act enshrined the view that healthcare is a right of all Thai citizens and called for all Thais to be covered by some form of public insurance. The Universal Coverage Scheme (UCS) was therefore introduced in the same year[5], with the aim of achieving nationwide coverage. On the other hand, the NHSO became responsible for centrally purchasing health services and distributing funds to public healthcare facilities based on the population they serve and the services they provide[6].

The UCS replaced the Medical Welfare and Voluntary Health Card schemes, simultaneously extending coverage to all previously uninsured individuals. The scheme is funded through taxes and provides a comprehensive range of benefits, with a strong emphasis on primary care services. The current public schemes in Thailand's present UHC are summarised in *Figure 3*.

Figure 3: Current public schemes in Thailand's UHC



Results from the latest Thai National Health and Welfare Survey show that 99.3% of the population is covered by one of the three health insurance schemes[7], not accounting for the population covered by other smaller schemes[8]. The UCS is the biggest scheme in terms of population coverage, encompassing 72% of Thai population.

Outside of the formal UHC structure, several other schemes exist to improve health access for the estimated 4.9 million migrants that reside in Thailand, many of whom are undocumented[9]. Migrants who are not formally employed and covered by the SSS can opt in for the Migrant Health Insurance Scheme (MHIS), which includes compulsory health screening annually. Since 2013, this scheme has been expanded to include migrant children up to the age of seven years[10].

Photo by John Rae

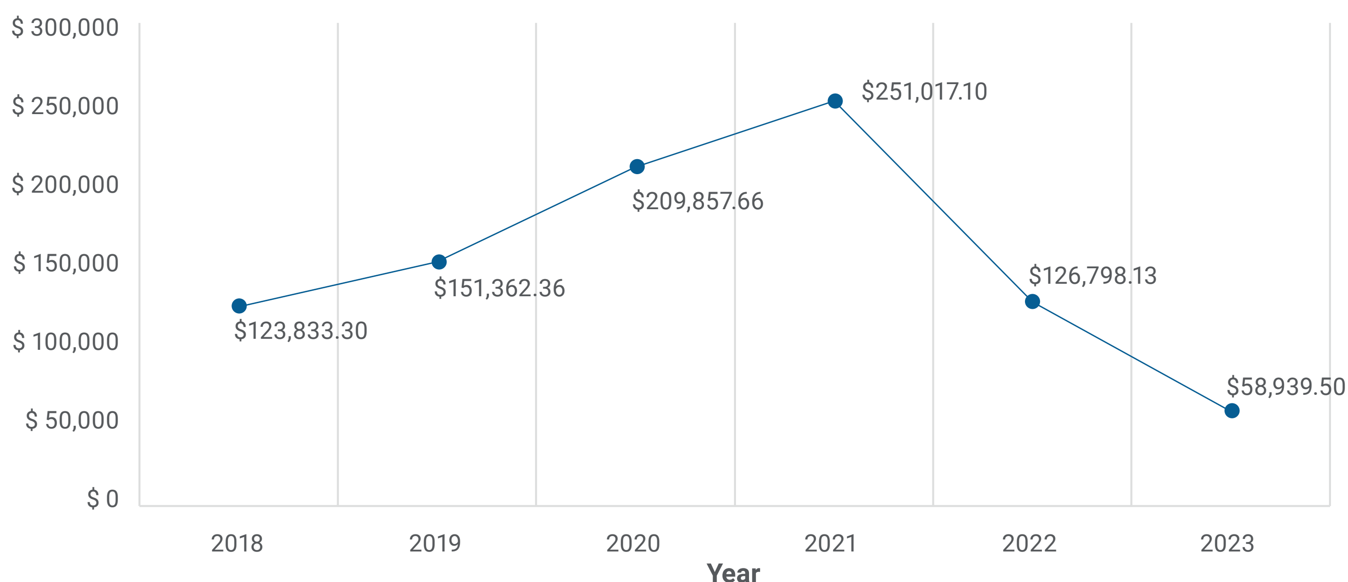
LOCAL ADMINISTRATIVE ORGANISATIONS

In 2006, as an extension of the National Health Security Act, Thailand introduced the Community Health Fund (CHF) as an innovative fund for community-based health promotion and disease prevention activities that also aimed to engage local governments in Thailand's UHC development[11]. LAOs could choose to opt into the initiative, whereby the NHSO would provide THB45 (~USD1.50) per capita per year for each resident in the community. In return, LAOs should commit a percentage of matching contributions. Originally set to a minimum of 10% of the NHSO's contribution, the matching contribution proportion has since gradually increased to 30–50% of NHSO's contribution,[12] depending on each LAO's size and financial capacity.[11,12] LAOs are also required to propose community health projects that relate to primary care, community-based care or health promotion, and disease prevention for residents regardless of their registered healthcare schemes[13]. As a result, Thailand effectively created an innovative mechanism in which local authorities could actively contribute to malaria prevention and elimination activities.

Figure 4 summarises the financial support from LAOs towards malaria elimination activities by year. Between 2018 and 2021, total contributions from LAOs towards malaria increased by 102.7% from USD123,833 to USD251,017. While these contributions represent only about 1% of Thailand's overall yearly malaria funding, the process of engaging LAOs has yielded further non-financial benefits. To further improve engagement with LAOs, public health officials from the Division of Vector Borne Diseases (DVBD) collaborated with and received technical support from the Malaria Elimination Initiative at the University of California, San Francisco to design an engagement strategy[12]. This strategy provided LAOs with a deeper understanding of the current malaria situation in their local areas as well as sub-foci transmission data and corresponding risk levels that enable LAOs to tailor malaria interventions to local situations. Additionally, LAOs have also learned technical knowledge and skills from public health officials, empowering them to actively take on vector control responsibilities[12]. This has been done through training workshops, as well as creation of a dedicated guide for LAOs on malaria elimination[14].

[ii] A conversion rate of 1 USD = 30 Thai Baht (THB) is used throughout this article.

Figure 4: Budget support (in USD) from LAOs by year



Note: Conversion rate of 1 USD = 30 THB was used

Data Source: Malaria Online (https://malaria.ddc.moph.go.th/malariaR10/index_newversion.php), accessed 26 Jul 2023

Local authorities such as LAOs have played an increasingly important part in public service delivery since the establishment of the 1997 Constitution[15]. Besides defining decentralisation as a basic national policy, the 1997 Constitution also led to the implementation of the Decentralization Plan, in which over two hundred government functions previously conducted centrally were transferred to local governments. At the same time, LAOs also received more budget as part of fiscal decentralisation[15,16]. Such decentralisation has meant that LAOs are an increasingly active partner in malaria elimination and POR efforts in Thailand. By actively engaging with LAOs and building their capacity on malaria control activities, Thailand has set a strong foundation for its future financing sustainability and meeting the needs of its malaria programme.

PRIVATE SECTOR

Ad-hoc contributions by Thailand's private sector, such as the Dhanin Tawee Chearavanont Foundation and Golf Aid Charity, have also played a role in increasing domestic funding towards malaria.

To illustrate, the corporate foundation Dhanin Tawee Chearavanont Foundation contributed USD 2 million between 2019 to 2021 to support the Regional Artemisinin-resistance Initiative (RAI), a large regional initiative by the Global Fund to eliminate drug-resistant malaria in the Greater Mekong subregion[17]. Between 2019 and 2021, this contribution funded for the screening tests of 44,612 residents in five malaria hotspot provinces, as well as enabled capacity building for 10,296 public health workers and volunteers[18].

Separately, the Golf Aid Charity has also raised funds to make mosquito net shirts to reduce the risk of malaria and other vector-borne diseases among foresters in Thailand. As part of the initiative, between 16 April and 31 May 2023, members of the public could apply to play at selected golf courses around the country, and the corresponding green fees would be donated to the project[19].

Dhanin Tawee Chearavanont Foundation was the first private sector partner to support active case finding and surveillance of drug-resistant malaria among hard to reach, mobile and migrant populations living along the Thai-Myanmar border via the RAI. The Foundation was motivated by its mission to help underprivileged and vulnerable groups access high-quality public healthcare by working with national, regional, and global partners with experience and expertise.

By contributing to the RAI, the Foundation sought to boost the capacity of Thailand's health networks to control the spread of drug-resistant malaria. In doing so, it hoped the initiative would improve the lives and well-being of people in remote border areas such as those close to Malaysia, Myanmar, and Cambodia.

Impact and challenges

Photo by John Rae

UNIVERSAL HEALTH COVERAGE

The development of UHC has had a significant impact on Thailand's progress towards malaria elimination in two major ways. First, UHC has ensured **sustainable domestic funding for malaria elimination**. Malaria services which were previously primarily provided through the vertical malaria programme and financed by global donors such as the Global Fund are currently being integrated into the domestically-funded general health system, improving the sustainability of malaria-related treatment. In turn, domestic funding for malaria has steadily increased in the recent years through the NHSO, which provides malaria treatment and related care through the UCS. Funding for elimination activities is also now included under the National Health Security Fund, which is also under the governance of the NHSO, further reducing Thailand's reliance on external funding. This can be seen in *Figure 1* as the percentage of annual budget support from the NHSO has steadily increased from 2018.

Second, UHC has been key to **improving access to malaria-related care**. In Thailand, without accounting for the impact of COVID-19, the latest UHC Service Coverage Index (SCI) of essential health services was 82%, five percentage points higher than the average of other Upper Middle-Income Countries (UMICs)[20]. Implementation of UHC priorities drastically reduced financial barriers which had previously prevented care-seeking behaviours among the Thai population; healthcare spending accounted for about 35% of all Thai household expenses before the UCS was created in 2002, compared to 10% of all household expenses 17 years later[21]. In addition, health services have been made increasingly accessible for vulnerable populations; UHC was expanded to include stateless people in 2010,[22] and today mobile and migrant workers from neighbouring countries are also able to access malaria clinics in Thailand for free treatment[23]. By ensuring all individuals can access malaria treatment and care without financial hardship, **UHC enables Thai residents to seek timely care, which can improve early malaria detection and prompt treatment leading to reduced malaria transmission rates**.

Photo by John Rae

A few improvements can further strengthen the effectiveness of UHC towards malaria elimination efforts. The MHIS is the only governmental scheme that allows migrants outside of the formal economy to gain access to UHC. However to date, only one-third of the expected eligible applicants have signed on to the MHIS.[24] This is likely due to the cost of the scheme — the THB2,200 per year (~USD73.33 per year) price point is a significant sum for many migrants, especially at the Thai-Laos border where 64.3% of migrants earn THB3,000 or less per month[23]. While migrants are currently able to access free malaria care through malaria clinics via the vertical programme, such access may be at risk as the vertical programme is increasingly integrated into the wider health system. Therefore, **steps must be taken to ensure that malaria care remains free and available to mobile and migrant populations**.

At the same time, integration of the vertical programme has also brought challenges to the **sustainability of malaria-related expertise in general health services,** especially as many vertical programme staff retire but not replaced as per Ministry of Public Health policy. It is anticipated that the vertical malaria programme will lose 48% of its staff due to retirement by 2024[25] — such a large attrition of malaria-related expertise in its health workforce can threaten Thailand's progress towards malaria elimination. In its NMES, the Ministry of Public Health has acknowledged the loss of malaria expertise as a strategic challenge[3]. Thus there is a need to continually train general health staff on malaria to achieve elimination and maintain prevention of re-establishment.

Due to segmented development of UHC in Thailand, the three government health insurance schemes have different histories, features, objectives, and administrative management. As a result, inequalities exist between the different schemes. For example, CSMBS beneficiaries enjoy free choice of healthcare providers without gatekeeping, whereas SSS and UCS beneficiaries can only access registered contracted providers; CSMBS beneficiaries are also able to access non-essential medicines on a fee-for-service basis without ceiling, whereas coverage for SSS and UCS beneficiaries is limited to medicines under the National List of Essential Medicines (NLEM)[5,26]. In addition, despite only having 5.2 million beneficiaries, the CSMBS utilises 17% of the global government healthcare expenditure, whereas the UCS, which covers 47.5 million beneficiaries, only utilises 28%[20,27]. It is estimated that the expenditure per capita for the CSMBS is four times higher than that of the UCS[28]. **More is needed to harmonise the three schemes and ensure equity, a key principle in Thailand's UHC**. Encouragingly, Thailand has established a committee in 2020 with a goal of improving integration of the three schemes[27].

Nevertheless, the interplay between UHC and Thailand's malaria elimination efforts has demonstrated a mutually reinforcing relationship. By ensuring access to healthcare services for all citizens, UHC has contributed significantly to early detection, prompt treatment, and effective prevention strategies against malaria. The success of Thailand's malaria control efforts serves as a remarkable example of how comprehensive healthcare policies can synergistically enhance public health interventions.

LOCAL ADMINISTRATIVE ORGANISATIONS

The engagement of LAOs has **enabled capacity building and activation of local administrations on malaria interventions**, meaning that malaria-related interventions are now more **community-centred and context-specific**. This in turn has led to enhanced surveillance and reporting as well as more tailored malaria elimination approaches. Local public health officials have conducted joint training workshops with LAO staff which, according to feedback from the LAO staff, have enabled the staff to learn about their local malaria situation, recommended interventions, and — importantly — that Community Health Funds can be utilised towards malaria prevention efforts[12]. Public health officials then worked with LAO members to operationalise these interventions in the field, tapping on LAOs' localised knowledge to ensure timely and optimised resource allocation. LAOs are also able to customise malaria control approaches to address local challenges, such as geographical factors and cultural practices, which improves the effectiveness of interventions and enhances community cooperation.

However, while the DVBD actively engages with LAOs and encourages the inclusion of malaria on LAOs' budget agendas, **contributions from LAOs towards malaria elimination have been unstable**, which can threaten prevention efforts. *Figure 4* shows the budget support from LAOs towards malaria elimination efforts by year — while total contributions increased between 2018 to 2021, they nosedived from 2022 onwards. This may be due to competing health priorities which LAOs are also responsible for, such as control efforts of the COVID-19 pandemic. Overall, contributions from LAOs constitute on average 1% of the annual malaria funding in Thailand.

LAOs also face **challenges in deploying funds for malaria control efforts**. A recent study conducted among funding committees of LAOs in a northeastern Thai province found that committee members felt they lacked the confidence and knowledge in managing funds; members also reported avoiding fund deployment due to fear of audit agencies[11]. This has resulted in a widespread build-up of unspent CHFs, despite the intention to be used annually. One study estimated that more than THB4 billion — equivalent to USD120 million — was left unutilised in national CHFs in the fiscal year 2017[29]. This represents a missed opportunity as these are domestic funds that could have been used towards malaria prevention and elimination activities.

As critical stakeholders in Thailand's malaria elimination efforts, LAOs have not only contributed to reducing malaria cases but have also strengthened overall public health infrastructure through community-centred approaches, tailored interventions, and engagement strategies. These efforts showcase the importance of localised engagement in sustaining progress towards elimination goals.

PRIVATE SECTOR

At present, contributions from Thailand's private sector remain ad-hoc, which represents **an untapped funding source that can be further explored**. While Thailand's NMES for 2017–2026 seems to motivate LAOs, civil society and private sector by providing awards for "outstanding and sustained performance"[3], it does not appear that such a strategy is effective for engaging the private sector, as few thus far have come forward in support.

A possibility that can be considered is to leverage the existing tax exemption policy for malaria elimination efforts. Thai companies are currently 'exempted from income tax for twice the amount of donations, whether paid in money or property', if they donate to any of the 13 public health foundations set out by the Ministry of Finance[30]. None of the current 13 public health foundations are related to malaria at present. Therefore, the addition of a malaria–focused organisation, for example the Shoklo Malaria Research Unit (SMRU), to the list may help to motivate private sector to donate to the cause. Separately, another possibility would be to leverage on Thai Health Promotion Foundation (ThaiHealth), an autonomous government health promotion agency that is innovatively funded through a 2% surcharge of excise taxes on tobacco and alcohol through producers and importers[31]. At present, ThaiHealth works with over 20,000 multisectoral partners, many of whom are in the private sector, to support implementing health promotion programmes [32]. While malaria and other communicable diseases are not currently a priority area for ThaiHealth, its vast network can still be invaluable in mobilising the private sector towards this cause.

Photo by John Rae

Recommendations

Thailand has made great progress in sustaining malaria elimination and POR efforts. To further enhance these initiatives, Thailand can:

Maintain free and available malaria testing and treatment at cross border areas. Care needs to be taken to ensure that malaria-related testing and treatment remains free and available for mobile and migrant populations, even for those who do not possess MHIS as cross-border malaria remains the last major hurdle towards malaria elimination in Thailand.

Build financial management capacity among LAOs. Besides transferring technical knowledge on malaria elimination, capacity building among LAOs in the domain of budget management and fund utilisation strategy is crucial to build confidence in fund deployment.

Ensure prioritisation of malaria elimination at the highest levels. There is a need for high-level leadership and clear statements of intent that can spotlight the importance of malaria elimination. For example, the 1999 royal statement by His Majesty King Bhumibol Adulyadej, "The project to combat mosquitoes has been ongoing for a long time and the danger is still very much present. I want it to be strictly suppressed. The danger of dengue fever will be alleviated,"[33] has been used extensively for public education on dengue fever. Public health officials have noted that such high-level statements are particularly impactful in focusing public attention on health priorities.

Clearly define and recognise the contributions of all actors. With so many actors key to malaria elimination, clear roles among actors should be clarified and partners should be recognised as equal peers. In particular, LAOs have called to be publicly recognised as partners on malaria education materials, further legitimising their efforts.

Explore other domestic mechanisms to narrow the funding gap. Thailand can explore other domestic mechanisms to narrow the remaining malaria funding gap. For example, further engagement of Thailand's private sector or allowance of in-kind contributions can be considered. Thailand International Cooperation Agency (TICA) can further help to coordinate malaria-related projects between government agencies, private sector, and NGOs.

Conclusion

As countries progress towards malaria elimination and POR remains a key requirement to be WHO-certified as malaria free, there is an increasing need for a comprehensive and sustainable malaria financing strategy. While a funding gap for malaria remains in Thailand, efforts to mobilise its domestic resources are commendable and offer potential funding strategies that other Asia Pacific countries can look to as they plan for sustainability in their own malaria programmes. In addition, this case study demonstrates that in the process of increasing domestic funding support, countries can reap additional benefits such as a strengthened health system, increased local knowledge and capacities, as well as actively engaged stakeholders.

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