

PRIVATE SECTOR CASE STUDIES

How Cambodia, Lao PDR and Myanmar have engaged private sector networks to deliver quality diagnosis and treatments in the fight against malaria



ABBREVIATIONS



ACT	Artemisinin-based combination therapy
APLMA	Asia Pacific Leaders Malaria Alliance
ASEAN	Association of Southeast Asian Nations
CHAI	Clinton Health Access Initiative
CMPE	National Centre for Malaria Parasitology and Entomology
DFID	Department for International Development (UK)
DHIS2	District Health Information Software 2
GMS	Greater Mekong Subregion
HMIS	Health Management Information System
MMA	Myanmar Medical Association
NGO	Nongovernmental organization
NMSP	National Malaria Strategic Plan
oAMT	Oral Artemisinin Monotherapy
PSI	Population Services International
PPM	Public-private mix
QDSTM	Quality Diagnosis and Standard Treatment of Malaria Project (Myanmar)
RAI2E	Regional Artemisinin-resistance Initiative 2-Elimination
WHO	World Health Organization

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INTRODUCTION

Progress and challenges for malaria elimination in the Great Mekong Subregion

Malaria control efforts in the Greater Mekong Subregion (GMS)¹ have yielded impressive results in recent years, with incidence down by more than 76% from 2012 to 2017 and deaths down by 91% over the same period. Artemisinin-based combination therapies, rapid diagnostic tests, and insecticide-treated mosquito nets have all contributed to this, as have more targeted efforts to reach vulnerable populations.

However, there are challenges to achieving elimination goals. Resistance of malaria parasites to artemisinin – the core compound of the best available antimalarial medicines – and also to partner drugs of combination therapies, remains a challenge in nearly all GMS countries. Four artemisinin-based combination therapies (ACTs) are failing in Cambodia, and there is increasing evidence of partner drug failures in more provinces of Lao PDR, Thailand and Viet Nam.²

With the lower malaria burden across the region, the disease is increasingly concentrated in hard-to-reach groups, often beyond the reach of public health services. Poverty, language barriers and marginalization limit access to malaria related services and hence increase risk. Unregistered or illegal migrants are of particular concern as they are often reluctant or unable to use public sector services and tend to rely primarily on the unregulated informal private sector. Moreover, migration and mobility are expected to increase across GMS countries following increased cooperation via the Association of Southeast Asian Nations (ASEAN), the ASEAN Free Trade Agreement and the creation of economic corridors to facilitate cross-border trade.³

Malaria and the private sector

Across the GMS, the private sector – including medical practitioners, unlicensed pharmacies and medicine vendors, as well as medical services affiliated with private employers – contributes significantly to malaria diagnosis and treatment. This is especially so in remote areas and among groups at high risk. In these areas, some people also seek to buy drugs from any available

¹ The term “Greater Mekong Subregion” refers to the international region of the Mekong River basin in Southeast Asia which includes six countries (Cambodia, Lao PDR, Myanmar, Thailand, Viet Nam, and Yunnan Province, China).

² Fifth Meeting of the Greater Mekong Subregion (GMS) Therapeutic Efficacy Studies (TES) Network. Ho Chi Minh City, Viet Nam, 28-29 September 2017: meeting report. Manila: WHO Regional Office for the Western Pacific; 2017 (<https://apps.who.int/iris/handle/10665/260008>).

³ McMichael C, Healy J. Health Action, Health equity and migrants in the Greater Mekong Subregion. *Global Health Action*, 2017, 10(1): DOI: 10.1080/16549716.2017.1271594

outlet, including non-medical providers. Between 30% and 70% of people seek treatment from the private sector in the GMS.⁴ As such, engaging private health care providers is critical to malaria elimination.

It is crucial to ensure that the private sector providers' practices are aligned with national treatment guidelines, so as not to exacerbate drug resistance through irrational treatment, distribution of substandard or falsified medicines, and continued use of oral artemisinin monotherapies (oAMT)⁵ which may still exist in some areas. Investigating each and every case of malaria is key to elimination; without complete case data from both public and private sectors, national programmes have limited ability to properly resource and implement an elimination strategy based on transmission intensity. Currently, however, in most areas, private providers do not routinely report cases to the surveillance systems, nor is there a mechanism for them to do so.

Public-private mix (PPM) strategies can be a very effective way to leverage private providers' reach for diagnosis and treatment services and ensure that they adhere to national treatment guidelines, and report cases consistently. In most parts of the GMS, except Myanmar, efforts to supply quality-assured drugs in the private sector, enrolment of licensed private providers in PPM programmes, and enforcement of the ban on oAMT have nearly eliminated the use of monotherapies. When the private sector is also fully engaged in case reporting, testing and malaria case detection increases. As a result, governments know where cases are, they can act and implement control or elimination protocols. In addition, the national caseload data will become more complete.

This approach aligns not only with national malaria strategic plans, but also global and regional priorities and strategies. The World Health Organization (WHO) Strategy for Malaria Elimination in the GMS, 2015-2030, and the Malaria Global Technical Strategy 2016-2030 both provide clear guidance on the role and contribution of the private sector in achieving elimination targets.^{6,7} Specifically, WHO recommends implementing two sets of complementary interventions: prevention strategies based on vector control and, where appropriate, prophylaxis together with universal diagnosis and prompt, effective treatment of malaria in public and private health facilities and at community level. All cases of malaria infection need to be detected and managed by general health services, both public and private. One of the objectives of the Roll Back Malaria Partnership Strategic

4 Bennett A, et al. Engaging the private sector in malaria surveillance: a review of strategies and recommendations for elimination settings. *Malaria journal*, 2017, 16(1): 252. <https://doi.org/10.1186/s12936-017-1901-1>

5 The continued use of oral artemisinin-based monotherapies is considered to be a major contributing factor to the development of resistance to artemisinin derivatives. WHO has urged the countries to ban oAMT in both public and private sectors. This is of greater concern in the GMS which faces a threat from the rise in drug resistant malaria.

6 Eliminating Malaria in the Greater Mekong Subregion: United to end a deadly disease. Geneva: 2016 (<https://www.who.int/malaria/publications/atoz/eliminating-malaria-greater-mekong/en/>).

7 Global technical strategy for malaria 2016-2030. Geneva: World Health Organization; 2015. (<https://www.who.int/malaria/publications/atoz/9789241564991/en/>)

Plan 2018–2020⁸ is to increase resource mobilisation and engagement of the private sector. Similarly, the Asia Pacific Leaders Malaria Alliance (APLMA) Malaria Elimination Roadmap⁹ also states that the private sector should collaborate with government to improve product quality, extend access to commodities and reduce prices. The government should work collaboratively with the private sector for reporting cases.

According to the APLMA Roadmap, the government's role in engaging the private sector is four-fold:

1. To effectively coordinate different actors in the public, non-government and private sectors;
2. To regulate and motivate the private health sector to promote the use of effective medicines in pharmacy retail outlets and health clinics;
3. To engage private sector organisations in the fight against malaria and leverage their logistics capacity for supply and distribution of malaria commodities
4. To improve the health of workers and their families by encouraging large enterprises to support elimination in their areas of operation, and to promote the wider social good.

Working with the private sector has broader impact too: high-quality and efficient provision of malaria prevention and care in high burden settings – in both the public and private health sectors helps to build stronger health systems through reinforcing the its 6 building blocks.¹⁰

The case studies which follow will provide specific details of the impact contributed by private sector engagement in three countries: Cambodia, Lao PDR and Myanmar.

Case studies

The private sector as it relates to malaria control and elimination consists of a rich and diverse ecosystem of actors, both within and beyond the health sector. In the context of malaria elimination, engagement with the private sector primarily relates to health service delivery as a core business, i.e., clinics, pharmacies, and diagnostic laboratories, as well as private providers of malaria-related diagnostics and medicines.

8 RBM Partnership Strategic Plan 2018–2020. Geneva: RBM Partnership to End Malaria; 2018 (<https://endmalaria.org/sites/default/files/RBM-Strategic-Plan-digital-JVW-220218.pdf>).

9 Asia Pacific Leaders Malaria Alliance Malaria Elimination Roadmap. Mandaluyong City, Philippines: Asia Pacific Leaders Malaria Alliance; 2015 (<https://www.google.com/search?client=safari&rls=en&q=Asia+Pacific+Leaders+Malaria+Alliance+Malaria+Elimination+Roadmap.+Asia+Pacific+Leaders+Malaria+Alliance,+2015.&ie=UTF-8&oe=UTF-8>).

10 WHO framework describes health systems in terms of six core components or “building blocks”: (i) service delivery, (ii) health workforce, (iii) health information systems, (iv) access to essential medicines, (v) financing, and (vi) leadership/governance

CASE STUDY I

CAMBODIA

THE CHALLENGE OF KEEPING SERVICES ACCESSIBLE AND RELIABLE

Summary

Malaria is endemic in Cambodia to different degrees across the country. Parasite resistance to Artemisinin-based combination therapy (ACT) has been increasingly detected with four ACTs failing.¹¹ Many people seek treatment through the private health care sector and, with this in mind, the Ministry of Health has engaged with private providers to secure access to quality diagnosis and treatment for malaria using a PPM model. In 2017, among all reported malaria cases, 40% were reported by private providers. The PPM programme has proven successful, with reliable supplies of subsidized testing kits and medicines, training on treatment guidelines and supervision of private providers through an electronic quality assurance system to ensure high quality of case management. PPMs play a particularly important role in extending access to testing and treatment in high burden areas as well as in elimination provinces. Despite this, the Ministry of Health recently called for an immediate halt to the supply of ACTs and rapid diagnostic tests to private providers due to concerns about potential leakage of free public commodities. This could lead to an increased number of undiagnosed and unreported cases of malaria. This could also lead to increased burden on public providers and increase in presumptive treatment. This would limit the implementation of a control or elimination strategy based on the transmission intensity.

Malaria epidemic and response

Malaria is endemic in 21 of 25 provinces in Cambodia, with highest incidence in the north-east along the southern Lao and central Vietnamese borders. According to 2017 case reporting routine data from DHIS2,¹² 84% of cases are among adult males. This is likely attributable to forest-associated vectors during peak biting hours, as adult males often work in agricultural, forest-related or infrastructural jobs in remote forest or forest-fringe areas. Total cases reported decreased from 181,857 in 2010 to 76,804 in 2017. Artemisinin-based combination therapy was introduced in 2000, but currently four of these therapies are failing in Cambodia. As a result, changes in the national drug policy were made in 2014 and 2016.

¹¹ The Mekong Malaria Elimination Programme, World Health Organisation. Countries of the Greater Mekong are stepping up to end malaria. November 2018.

¹² A new health information system that allows recording and reporting of malaria data from the district level in real time

The Global Fund is the main contributor of malaria funding in Cambodia, with a grant to support elimination of multi-drug resistant *P.falciparum* and malaria. USAID also provides support to Cambodia's malaria elimination efforts through the President's Malaria Initiative. WHO provides technical support to the National Malaria Control Programme and a number of international donor organizations, non-governmental organisations and research institutions are also involved, including the Bill & Melinda Gates Foundation, the Clinton Health Access Initiative (CHAI), and Population Services International (PSI). The Asian Development Bank has a project management unit embedded in the Ministry of Health's Communicable Diseases Control Department and supports the Greater Mekong Subregion Health Security Project (2017-2022). This includes regional cooperation and communicable disease control in border areas, strengthening national disease surveillance and outbreak response and improving laboratory services and hospital-based prevention and control.

The private sector and malaria in Cambodia

In 2001, Cambodia adopted a three-pronged response to malaria through the public, private and community sectors, and today, private providers are still popular with both rural and urban Cambodians. Studies have shown that pharmacies, drug stores and private clinics were most commonly sought for health care services in Cambodia,¹³ and most people will go first to the private sector.

By 2011, the Cambodian government acknowledged the importance of the private sector in dealing with malaria, and initiated a PPM programme to engage private sector providers in malaria control and elimination efforts. Under the programme, licensed private providers were enrolled, trained and monitored for malaria case management services and case load reporting. By the end of 2014, enrolled private providers had treated over 17,300 malaria cases, 24% of the national total, and by 2017, this had risen to nearly 40%.¹⁴ The impact was substantial: efforts to supply quality-assured drugs, enrolment in the PPM programme and enforcement of the artesunate monotherapy ban nearly eliminated the use of monotherapies and substandard drugs nationally.

“Fifteen years ago, the whole principle was to bring public health into private facilities.”

*Doung Socheat, Former Director,
National Center for Parasitology
Entomology and Malaria Control*

¹³ Out-of-Pocket and Catastrophic Expenditure on Health in Cambodia. Phnom Penh: Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH; 2014 (http://giz-cambodia.com/wordpress/wp-content/uploads/CambodianSocio-EconomicSurveys200420072009Analysis_english.pdf).

¹⁴ Public Private Mix Operations Manual. Phnom Penh: National Centre for Parasitology, Entomology and Malaria Control; 2016.

BOX 1: BEYOND PUBLIC-PRIVATE MIX: PROVIDING SERVICES IN SPECIFIC WORKSITES

As Cambodia moves towards elimination, the new hot spots have moved from plantations to specific worksites in forest areas. These areas are the potential last bastions of cases because they tend to be forested, dark, damp areas that are ideal for mosquito breeding, and because the workers are often from mobile migrant groups who may be traveling from other malaria endemic areas.

In 2013, Population Services International (PSI) Cambodia designed its first worksite program and by the end of 2017 was supporting 161 worksites with over 200 embedded volunteers. Recent testing on worksites has found relatively little malaria, yet cases in these remote areas are still sometimes detected through other private sector channels, indicating that more needs to be done to find and treat the last cases of malaria in the GMS.

PSI has experimented with different approaches to increase case detection, primarily by increasing testing, and more recently, by better targeting testing as the understanding of risk profiles improves case

detection. The programme has successfully increased detection rates, for example, as a result of contact tracing and treating on arrival at the worksite.ⁱ

The key challenge going forward is balancing the risk that workers are exposed to with the cost effectiveness of proposed interventions in order to select the most appropriate strategy. PSI's most recent work has focused on trying to better understand where the risk is coming from, and to use this information when designing the intervention.ⁱⁱ Research was completed in 2018 that resulted in a better understanding of the habits, attitudes and practices of forest goers, resulting in a new co-designed strategy to engage the community in improving access to and use of malaria testing and treatment services.

ⁱ Worksite Programs for Malaria Elimination: Best Practices & Lessons Learned from Cambodia. GEMS Best Practices Series. Washington, D.C.: Population Services International; 2017 (<https://www.psi.org/wp-content/uploads/2017/05/GEMS-Worksite-Program-Best-Practices-Mar-17.pdf>).

ⁱⁱ Malaria Elimination: Who is Really at Risk? GEMS Emerging Learning Series. Washington, D.C.: Population Services International; 2017 (<https://www.psi.org/wp-content/uploads/2017/05/GEMS-Learning-Paper-Who-is-Really-at-Risk-Mar-17.pdf>).

The public-private mix programme

The PPM programme proved very successful with reliable supplies of subsidized testing kits and medicines, training on treatment guidelines and supervision of private providers through an electronic quality assurance system to ensure high quality of case management. All private providers have also been mapped to determine whether unlicensed private providers are treating malaria patients.¹⁵ PPMs have been playing an important role in extending access to testing and treatment in high burden areas as well as in elimination provinces.

In 2017, private participants in the PPM programme reported over 40% of Cambodia's malaria caseload (31,188 cases) and tested 178,402 suspected cases of malaria.¹⁶ The reporting rate for positive cases was 90%, with 99% of suspected cases receiving a rapid diagnostic test and 96% of positive cases receiving ACT. PSI Cambodia, which conducts quality assurance assessments with private providers under the PPM program, has rolled out an app-based quality assessment system to cover the 680 private providers within its supported network. Providers' scores have dramatically improved, demonstrating the effectiveness of consistent, structured assessments and follow up.

Recent Challenges

On April 13, 2018, the Ministry of Health called for an immediate halt to the supply of artemisinin-based combination therapy and rapid diagnostic tests to private providers registered in the PPM programme. This was due to concerns about potential leakage of free public commodities to private providers, and patients being charged for testing and treatment of malaria using free or subsidized commodities from the Global Fund. There were also concerns about public servants migrating to the private sector or pressuring patients to come to their private practice.

The result of this ban has been a suspended supply of quality-assured testing kits and medicines, and a halt to the provision of testing and treatment services for malaria at private health facilities. As of now, private providers will not be allowed to sell antimalarials or diagnostics, nor will they be allowed to provide malaria diagnosis or treatment.

There may be impacts of the ban on PPM providers testing and treating for malaria, including:

- **A possible increase in malaria transmission:** There is little evidence that a sudden limitation of services within the private sector, even when coupled with strong social behaviour change messaging will, in the short-term, shift treatment seeking toward public sector facilities or village malaria workers. Eliminating PPM services is most likely to affect those populations that have substantial geographic and financial limitations, and highly at-risk forest workers whose concerns about immigration and work status may prevent public sector utilization.

¹⁵ Public Private Mix Operations Manual. Phnom Penh: National Centre for Parasitology, Entomology and Malaria Control; 2016.

¹⁶ National Centre for Parasitology Entomology and Malaria Control data are provided by PSI and CMEP. The private providers under CMEP area tested 5,600 suspected cases and treated 969 malaria patients and the rest is from DHIS2.

- **A resurgence of monotherapy or use of unofficial first-line treatments:** The PPM ban risks private sector providers reverting to poor prescription and treatment practices. It might also lead to an increase in presumptive treatment as RDTs can't be purchased on the market. The ban might lead to heightened risks of patients obtaining substandard or falsified treatments from unlicensed providers, given the reduced accessibility to quality assured treatments. This may contribute to the increasing drug resistance.
- **An increased burden on public health facilities:** If public health facilities absorb even a moderate proportion of patients who previously visited private providers for malaria services, this will lead to increased waiting times and increased demand on public sector staff that may affect quality of care. This, in turn, could result in patients losing trust and prolonging the delay for testing and treatment, thus exacerbating transmission.
- **Incomplete reporting of confirmed cases of malaria:** Ninety per cent of PSI-enrolled PPM providers were reporting confirmed cases of malaria to the national surveillance system. If these cases go undiagnosed, or are incorrectly treated and unreported, the national program will be limiting its ability to properly resource and implement an elimination strategy based on transmission intensity.

The issue is as yet unresolved at the time of drafting this paper. Civil society organizations and government partners are in the process of devising options which may address the government's concerns while enabling the PPM to continue. Some of the ideas include raising the entry barrier to the PPM programme, precluding entry of those who are also employed in public facilities; providing resources and strengthening the capacity of the Department of Drugs and Food to enforce new regulations on the sale of antimalarial drugs and diagnosis in the private sector.

CASE STUDY 2

LAO PDR

AMBITIOUS PLANS TO INTEGRATE PUBLIC AND PRIVATE SURVEILLANCE AS PART OF ITS PUBLIC-PRIVATE MIX RESPONSE TO MALARIA ELIMINATION

Summary

Approximately 52% of Lao PDR's population of 6.8 million are at high risk of contracting malaria.¹⁷ For many years, the private sector was unregulated, and medicines deemed no longer effective as a first-line treatment for malaria in Lao PDR (e.g. chloroquine) were available through private sector outlets. In recent years, Lao PDR effectively increased access to early diagnosis and treatment, particularly for underserved and hard-to reach communities, providing malaria diagnostics and treatment in southern high endemic provinces through its PPM programme. The PPM model improves the collection of national malaria data from underserved locations that is hard to reach. In terms of service quality, PPM is performing well, although there is room for improvement. The Ministry of Health can be credited with the introduction of DHIS2. DHIS2 is currently in operation in 22 out of 141 districts, capturing passive case detection from all health facilities, village workers, mobile malaria teams and PPM facilities. Of the total suspected cases tested, 5.5% were tested through PPM providers and 6.5% of total reported positive cases were identified via the PPM network. The aim of the various partners in the malaria response is to achieve a surveillance-driven response in Lao PDR, with complete case data from both the public and private sectors. Efforts are underway to introduce case-based reporting throughout the country and 24-hour case notification in elimination targeted areas.

Malaria epidemic and response

Approximately 31% of Lao PDR's population of 6.6 million live in areas of high malaria transmission. The vast majority (95%) of the malaria burden is concentrated in the southern five provinces. In 2011, a large malaria epidemic in southern provinces of Lao PDR led to an increase in malaria incidence that reached a peak in December 2012, and continued at high level through 2014. The epidemic was likely associated with climatic conditions as well as changes in population movements due to increased economic activity including unregulated deforestation and large-scale development projects. Outbreak investigations have concluded that the surveillance system failed to detect

¹⁷ World Health Organisation. World Malaria Report 2018

and report the outbreak, that outbreak response methods were inadequate, and that there was no effective system to provide protection to the highest risk groups, including forest workers and soldiers.¹⁸

The country has set the goal of eliminating *P. falciparum* malaria by 2025 and all forms of malaria by 2030. The Center for Malaria Parasitology and Entomology (CMPE) leads the implementation of the National Malaria Strategic Plan 2016-2020, with support from WHO and technical partners. CMPE has devoted significant resources in recent years to ensuring that public health facilities are stocked with appropriate first-line artemisinin-based combination therapies and malaria rapid diagnostic tests. The Community Health Worker programme for malaria case management was introduced in 2005 and by 2016, there were 5825 workers with malaria case management training and equipment.

The private sector and malaria in Lao PDR

The private sector plays an important role in malaria case management in southern Lao PDR and is responsible for approximately 60% of all antimalarial distribution.¹⁹ Lao PDR's PPM programme began in 2008. Participating pharmacies and private, for-profit facilities were supplied with testing kits and medicines through the existing government supply chain. Participating outlets were permitted to supply the products free of charge or at a small profit. By 2012, the programme covered 16 clinics and 245 pharmacies from 22 districts across eight provinces.²⁰ The government acknowledged, in its last two national strategies, that the PPM programme effectively increased access to early diagnosis and treatment, particularly for underserved and hard-to reach communities.²¹ Outlets which were part of the PPM programme had higher availability of first-line treatment and confirmatory blood testing compared with non-PPM districts. One issue of concern was that chloroquine is widely available in 64% of PPM and 97% of non-PPM district outlets. It was the most commonly distributed anti-malarial among private outlets in both types of areas even though it has not been recommended as a first-line treatment for *P. falciparum* malaria since 2005 or for *P. vivax* since 2011.

Despite the clear importance of the private sector and the success of the PPM intervention, the intervention ran into funding constraints and was unable to provide continued training and supportive supervision to private outlets after 2015. This is now being addressed in the current country strategy.

¹⁸ Briggs M, Fukuda M, Shafique M. Evaluation of increases in reported malaria cases in the six southern provinces of Laos, 2011-2013. Vientiane, Lao PDR: 2013.

¹⁹ ACTwatch Group, Phanalasy S. The malaria testing and treatment landscape in the southern Lao People's Democratic Republic (PDR). Malaria Journal, 2017, 16(1):169 (DOI 10.1186/s12936-017-1769-0).

²⁰ CMPE. Public-private mix initiative for the diagnosis and treatment of malaria in Lao PDR; 2012.

²¹ ACTwatch Group, Phanalasy S. The malaria testing and treatment landscape in the southern Lao People's Democratic Republic (PDR). Malaria Journal, 2017, 16(1):169 (DOI 10.1186/s12936-017-1769-0).

Addressing the challenges

Learning from the weaknesses exposed by the 2011 outbreak, the National Malaria Strategic Plan (NMSP) recognises that an adequate response to future outbreaks will require some changes, including better understanding of the distribution and movement patterns of the mobile and migrant populations, and upgrading the malaria information system to improve timeliness of outbreak response. The plan calls for all private sector facilities and outlets providing malaria diagnosis and treatment to be included in the national surveillance system to generate a more complete picture of the outbreak situation, as well as establishing an electronic logistics management information system to better manage supplies.

Given the fact that several of the required changes identified in the NMSP relate to the private sector, there are plans to strengthen existing PPM facilities and expand the PPM programme to all qualified providers in the five southern provinces. The plan envisages CMPE working with partners to provide annual training to PPM facilities on diagnosis, treatment, stock management and reporting. In exchange for free commodities, PPM facilities will be expected to report all relevant malaria data according to the national surveillance system and comply with all regulations. The strategy states that partners will collect reporting forms, distribute additional stock, and conduct supportive supervision visits on a quarterly basis to all PPM facilities to ensure compliance with national diagnosis and treatment guidelines and reporting protocols.

The 2016-2020 NMSP also focuses on ensuring timely and complete reporting of all malaria data captured through the passive case detection system, including all health facilities, village workers, mobile malaria teams, and PPM facilities. There are also several monitoring and evaluation indicators in the national strategy related to the private sector, including both process indicators and measures

“If cases in the private sector are not reported, then you don’t know your epidemic. Then you go blind and you cannot eliminate malaria.”

*Bouasy Hongvanthong, Director,
Centre for Malaria Parasitology and
Entomology, Lao PDR*

of quality of care. These indicate a serious commitment to working with the private sector. For example, there is a measure of the percentage of confirmed malaria cases that received first-line antimalarial treatment according to national policy at private sectors, with a target of 98% by 2020.

Since 2017, the PPM has been reactivated and the Ministry of Health has centralized both public and private sector procurement of testing kits and medicines, which are now available down to the village level, leveraging private sector and volunteers where needed.

“Lao PDR has been on an amazing learning curve in strengthening the quality of their malaria surveillance to identify transmission areas and target an adequate response. They have clear stratification by health facility catchment area, have revised guidelines for elimination, and have a high level of collaboration among partners.”

*Christopher Lourenco, Senior Research Associate
Malaria Team - CHAI*

The Clinton Health Access Initiative is supporting the country on supply chain optimization with dedicated provincial staff in the south, while WHO is supporting Lao PDR in capturing complete case data in the DHIS2 system. The PPM work, with PSI as an implementing partner, has also been key to strengthening surveillance through the use of DHIS2,²² ensuring that all cases from 432 PPM outlets were reported monthly into the national Health Management Information System (HMIS) (Box 2). This has now recently evolved to automatic and real-time reporting which constitutes a huge step ahead in data collection. Surveillance strengthening is evidenced by the gradual increase in testing, positive case detection and reporting observed month by month, coinciding with phased network scale-up.²³

The PPM programme has contributed to case testing and identification. In 2018 there were 525 enrolled providers, who tested 45,557 suspected cases and found 1,369 positive cases. Although there are no official national numbers to compare them to yet, this demonstrates impressive growth and shows how quickly the network can scale up. According to national guidelines, only registered private clinics and pharmacies are authorized to provide malaria services. A further 6,410 non-formal providers²⁴ were mapped through ACT watch (2015), but are not authorized to provide malaria services.

²² DHIS2 is the national HMIS system used in more than 60 countries, including Lao PDR. It is free, open-source software supported by the University of Oslo (UiO), a global community of practice, and key malaria partners including The Global Fund, WHO Global Malaria Program and the Bill & Melinda Gates Foundation.

²³ GEMS PSI/Lao PDR. Progress report annex A: 2017 Private Sector Surveillance Bulletin Feb 2018. GMS Elimination of Malaria through Surveillance (GEMS).

²⁴ sundry shops, itinerant drug providers, mobile providers

BOX 2: ACHIEVING A SURVEILLANCE-DRIVEN RESPONSE IN LAO PDR, WITH COMPLETE CASE DATA FROM PUBLIC AND PRIVATE SECTORS

Lao PDR has initiated monthly reporting from all sectors and data integration into the DHIS2 as its national health management information system. The process of integrating private sector data into the national HMIS began with a complete mapping of service delivery points and the introduction of complete case-based data reporting to the Ministry of Health in parts of the country.

Analysis and use of private sector data have already helped outbreak response in Lao PDR. Geolocated case data reported from the private sector were used by the National Malaria Control Program to target outbreak response in Nong District. Villages with the highest transmission (see figure on pg 17) were targeted for response.

Reporting from the private sector in Lao PDR has relied on monthly collection and validation of paper-based data by an NGO partner to the Ministry. Although this is a positive start, there are issues with data quality, timeliness and the burden of data entry.

Consequently, case-based reporting within 24-hours was introduced in 2018 throughout the country in elimination targeted areas. This was achieved through private providers using a malaria case surveillance app in real time, to submit malaria case information along with monthly stock counts. This initiative is expected to improve data quality and completeness and alleviate the need for NGO partners to generate reports each month, enabling district staff to focus on data validation. It should also facilitate task shifting, with time currently spent doing data entry shifting to monitoring and analysing data and planning data-driven interventions. The ultimate goal is to scale case-based reporting throughout the country, achieving 24-hour case-notification in elimination-targeted areas.¹

¹ Integrating Private Sector Data into National Malaria Surveillance Systems: A Case Study in Lao PDR. How does technology support the shift toward elimination-ready surveillance? PowerPoint presentation by Jose Garcia Munoz. University of Oslo.

Future opportunities

The focus going forward is on PPM geographic expansion, improving the quality of care, and improving accuracy and timeliness of reporting from the PPM network. In total, 539 clinics and pharmacies have been mapped and 525 have already been recruited.

In terms of the quality of the PPM network of providers, 172 PPM providers received baseline assessments during 2017 on the Malaria Providers' Quality of Care Score. Most recent assessment result in 2018 show that 95% of the providers scored over 80% on the assessment.²⁵ These results represent baseline quality data and are being monitored over the course of 2018 for continuous quality improvement. As for reporting, in December 2018, 100 providers reported data. Over the year, reporting completeness across all providers and all months was 98.3%. 330 providers were trained and equipped with the malaria case surveillance app on their personal smartphones. In the last reporting period, 106 providers submitted at least one suspected case through the app. Increases in positive cases are attributed to the increased number of providers reporting, as PPMs were trained and equipped to report as part of phased scale-up.

²⁵ 80%- Satisfactory

CASE STUDY 3

MYANMAR

RECOGNIZING THE POTENTIAL OF COMMUNITY-BASED PRIVATE PROVIDERS

Summary

International funding and technical support to Myanmar to tackle malaria only started in 2010. Since then, the country has made remarkable progress in drastically reducing malaria-related morbidity and mortality. Myanmar's private sector is large and is the first option for most care seekers. Previously, the PPM was restricted to general practitioners and excluded pharmacies, private companies and vendors which provide poor quality service. This situation has favoured the resurgence of monotherapies which, in turn, has negatively impacted treatment outcomes and fuelled the spread of drug resistance. The National Malaria Strategic Plan for Myanmar 2016-2020 recognises that achieving optimal results will require coverage through public, community-based and private service delivery channels. The private sector is an important health service channel for patients and the government is working with two main implementing partners—the Myanmar Medical Association (MMA) and Population Services International—to work with the private sector for service

“Myanmar has a very open policy on embracing the private sector as an essential partner to deliver malaria services to the population. We have moved from ‘what to do’ to ‘how to do it.’”

Faisal Mansoor, Head of Programme, UNOPS Asia region - Global Fund Myanmar

delivery. The risk of monotherapy resurgence and emerging resistance remains, requiring intensification of malaria elimination activities. The large non-formal sector is providing quality case management and reporting cases into the national system, thus filling access gaps.

Malaria epidemic and response

Myanmar is making good progress in reducing its malaria burden with cases down from 420,808 in 2010 to 85,019 in 2017, and deaths falling from 788 to 30 over the same period.²⁶ However, there is still considerable morbidity and mortality compared to some of the other countries in the Asia Pacific region, which are moving to the elimination and pre-elimination phase. In 2017, Myanmar accounted for about 45% of

²⁶ World Malaria Report. Geneva: World Health Organization; 2017 (<https://www.who.int/malaria/publications/world-malaria-report-2017/report/en/>).

all reported cases in the GMS,²⁷ and many people are still at risk of malaria. Out of a population of 52 million in Myanmar, 22.5 million (43%) reside in endemic areas, and 21.4 million (41%) live in areas with receptivity and vulnerability to malaria.²⁸

There has been a proliferation of implementation partners as well as funders for malaria eradication in recent years. The Global Fund is the largest contributor of malaria funding in Myanmar at present, providing funding for one half to three quarters of the malaria programme in any given year. The Global Fund investment in Myanmar has shifted from classical public health support to investing more in community case management and surveillance systems, requiring higher investment capacity building activities, supervision, information technology and human resources.

The private sector and malaria in Myanmar

The private health sector in Myanmar includes 18,443 medical practitioners, as well as licensed and unlicensed pharmacies and authorized services belonging to private companies catering to their employees.²⁹ The private sector is an important health service channel for patients with a fever; between 50% and 80% of fever patients seek care in the retail private sector, typically the informal sector.³⁰ This is especially the case in remote areas where access to public services may be limited. In Myanmar, access to basic healthcare services is historically poor in areas of the country where there has been a history of conflict and consequent population dislocation. In conflict situations, especially where these have been long-running, there has been a significant impact on the establishment and continued operation of health facilities and services. In Myanmar, this has the greatest impact upon populations in parts of Kachin, Shan, Rakhine, Kayah, Kayin and Mon States. In 2013, in a survey of ethnic populations from 64 townships over 60% of respondents reported that they sought care from sources outside the government health sector.³¹

The National Malaria Strategic Plan for Myanmar 2016-2020 recognises that achieving optimal results will require coverage through public, community based and private service delivery channels. Consequently, the strategy allows for selected private sector providers to test and treat patients according to the national malaria treatment guidelines, if they report all positive cases to the local health authorities within 24 hours of diagnosis. Rapid diagnostic tests are available at all public

27 World Malaria Report. Geneva: World Health Organization; 2018 (<https://apps.who.int/iris/bitstream/handle/10665/275867/9789241565653-eng.pdf?ua=1>).

28 National Strategic Plan: Intensifying Malaria Control and Accelerating Progress towards Malaria Elimination 2016-2020. Department of Public Health, Ministry of Health and Sports, The Republic of the Union of Myanmar;

29 2014 data as referenced in the NMCP 2016. (<http://www.searo.who.int/myanmar/documents/malariationalstrategicplan2016-2020.pdf>).

30 Xu J-W et al. Malaria treatment-seeking behaviour and related factors of Wa ethnic minority in Myanmar: a cross-sectional study. *Malaria Journal*, 2012, 11: 417 (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3529692/>)

31 The Long Road to Recovery: Ethnic and Community-Based Health Organizations Leading the Way to Better Health in Eastern Burma. Health Information System Working Group; 2015 (<http://www.burmacampaign.org.uk/media/The-Long-Road-to-Recovery.pdf>).

sector and NGO-run health facilities, as well as at community level and free tests are being provided through various private sector initiatives. Free anti-malarial medications are also being provided to verified private sector partners, with this supply linked to timely and accurate reporting, feeding into the national health information system. There are plans to expand public private engagement to cover pharmacies, private companies and selected vendors. The strategy emphasizes increased training, supportive supervision and monitoring and evaluation to improve and sustain the quality of services. In the absence of a scaled PPM intervention, the risk is that the private sector may continue to provide poor quality diagnosis and treatment. External analysis predicts that without continued subsidy of artemisinin combination therapies, there will be a resurgence of monotherapies which will significantly impact treatment outcomes and possibly contribute to further drug resistance in Myanmar.³²

Addressing the challenges

Myanmar's experience to date has shown that working with the private sector has impact, and that working with the formal and non-formal private sector has been instrumental in speeding up the reduction of malaria burden and accelerating towards elimination. The two main implementing partners are the Myanmar Medical Association (MMA) and PSI. MMA's Quality Diagnosis and Standard Treatment of Malaria (QDSTM) project³³ was initiated in 2000, under the guidance of the Ministry of Health in cooperation with WHO and the Vector Borne Disease Control unit.³⁴ The strategy is to improve early access to quality diagnosis and treatment through training private medical practitioners and village health volunteers and supporting field implementation units. MMA is now involved in active case finding through mobile clinics to improve quality diagnosis and standard malaria treatment for people living in remote areas, vendor education sessions to halt marketing and selling of monotherapy, and training volunteers in outreach villages to deliver early detection and treatment for malaria.³⁵

"The question was: Can we provide quality tests and treatment through the non-formal sector and then report data to the national programmes? We showed that it can be done."

Lorina McAdam, Director, GMS Elimination of Malaria through Surveillance (GEMS) Program, PSI

³² Albert Killian, Montrose, artemisinin monotherapy replacement in the private sector to support the containment of artemisinin resistant malaria in Myanmar: developing a theory of change for the AMRT project Feb 2017.

³³ Myanmar Medical Association Quality Diagnosis and Standard Treatment of Malaria ((QDSTM) Project. PowerPoint presentation by Dr Myo Min Project Manager 4.3.17. Accessed Dec 2018: http://www.mmamalaria.com/attachments/view/?attach_id=1214.

³⁴ The project is involved in both malaria control and resistant containment activities and is funded by the Regional Artemisinin-resistance Initiative 2-Elimination (RAI2E) funded by the Global Fund under the United Nations Office for Project Services management as well as the project Evidence and action for malaria elimination in Myanmar" with the University of Maryland.

³⁵ Min, M. Myanmar Medical Association Quality Diagnosis and Standard Treatment of Malaria (QDSTM) Project. PowerPoint Accessed Dec 2018 (http://www.mmamalaria.com/attachments/view/?attach_id=1214).

With funding from the UK Department for International Development (DFID), the Bill and Melinda Gates Foundation and Good Ventures, PSI launched the Artemisinin Monotherapy Replacement Project in Myanmar in 2012. It has been working with private sector suppliers and providers throughout Myanmar to rapidly replace widely available monotherapy with artemisinin combination therapy. PSI is also working to eliminate the practice of prescribing medicines in partial doses, so as to prevent the further development of artemisinin resistant malaria. PSI also worked with the Food and Drug Administration (FDA) of Myanmar to ban import of oAMT and conducting awareness campaigns about the dangers of oAMT. The number and type of providers and outlets covered is wider than under the MMA initiative, including non-formal providers delivering malaria services in hard-to-reach locations. In 2015, PSI added to the scope of interventions and started rolling out mobile rapid diagnostic test services. Rapid diagnostic testing increased by 163% as a result of activities designed to improve provider adherence to national testing guidelines.

“The GMS is now faced with a critical window of opportunity as insecticides remain effective, for the time being. Efficacious antimalarial combination therapies still exist, but are failing fast, and support from external funding partners continues to be available, but this will likely be time-limited. Programmes and their partners must now seize the moment and take bold steps to ensure that malaria is eliminated from the GMS once and for all.”

Sean Hewitt, malaria expert, VBDC Consulting Ltd.

Challenges and opportunities

New evidence indicates that artemisinin resistance is not just spreading but emerging spontaneously in Myanmar. This new artemisinin resistance scenario emphasizes the need for rapid elimination and the importance of adequate treatment of *P. falciparum* cases in all sectors of society and through all health care outlets to minimize resistance pressure and to support ambitious efforts to eliminate malaria from Myanmar by 2030.

A second concern is the resurgence of monotherapy. Availability was found to be highest in areas on the Indian border, with almost 20% of the total private sector stocking this drug.³⁶ Funding reductions to the PSI project have necessitated some increased targeting of the artemisinin monotherapy replacement programme to focus on the highest burden areas, relying on specified criteria and a scoring system in order to prioritize townships that would enable the most significant contribution to burden reduction.

Even while there has been some consolidation of the existing programme, there are also some pilot initiatives to test ideas for how the non-formal sector may be able to support some elimination-specific activities, such as case investigations, with a focus on filling coverage gaps in the most remote areas. The very large non-formal sector is providing quality case management and reporting cases into the national system, thus filling access gaps. Engaging with the private sector reduced the prevalence of artemisinin monotherapy from 67% in 2012 to 20% in 2017, and increased access to quality-assured ACTs from 4% to 43% over the same period.

LESSONS LEARNED

Governments need to create a mechanism and system for private providers to report into. The seasonal nature of malaria in the GMS, the mobility of mobile and migrant population and the increase in drug resistant malaria warrants timely response. Surveillance systems designed to capture real time data from both the public and the private sector can be used for decision making and localised implementation of malaria activities.

Private sector can offer quality care with the right support, training and supervision. This has been demonstrated not only among doctors, but among non-formal and non-health providers. Providers who do not have a background in health, can be sufficiently trained so as to achieve good quality services. Technology can be employed to assess, track and help improve provider quality over time.

Private sector providers are motivated, knowing that they are contributing to the overall health and well-being of the community and playing an active role in the implementation of the government strategy for malaria control and elimination

³⁶ PSI ACTwatch, 2015).

CONCLUSION

The GMS has made remarkable progress towards eliminating malaria in recent years, partly due to its engagement with the private sector to expand the coverage of services. The three GMS country cases presented here are faced with different realities and a common aim: to eliminate malaria. There is no silver bullet for all. Each country's accomplishment is unique and the challenges to control and achieve elimination are diverse, but PPM is an essential component of the overall effort.

Cambodia has used creativity, technology and innovative approaches to develop its three-pronged public, private and community sector approach to malaria elimination. However, in recent years progress has been erratic, with financial and administrative issues hampering elimination efforts, and most recently a government-imposed ban on PPM threatens to reverse progress in the private sector component of the programme.

Lao PDR has recently made remarkable progress adopting new technologies to upgrade public health services with a special emphasis on deploying an integrated health information system capturing data from public as well as private sector. However, there is still room for improving the performance and efficiency of the systems in capturing real time data.

Malaria control in Myanmar has embraced a comprehensive service delivery model, including public and private health facilities and the community. Scale-up of public private engagement is a necessity to contain drug resistance and stem the flow of monotherapy and substandard drugs. In addition, the program has shown that it is possible to train and supply informal private providers to collect data so that quality diagnostics and treatments are made available for the large proportion of the population seeking first-line treatment in such outlets.

The three countries profiled, as well as the other GMS countries, already have the means to eliminate malaria transmission. With the right support and mechanisms for public private collaboration, the private sector can be critical partners in elimination as providers of quality services and sources of critical data.



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