



# **GEMS+**

## THE GREATER MEKONG SUBREGION ELIMINATION OF MALARIA THROUGH SURVEILLANCE

**ANNUAL REPORT 2021**



# GEMS+

## ANNUAL REPORT 2021

Copyright by Population Services International 2022.  
The GEMS+ program is funded by the Bill & Melinda  
Gates Foundation.



# TABLE OF CONTENTS

4

## **GEMS + NETWORK COVERAGE**

Overview of PSI's GEMS+ program and its active provider network in 2021

12

## **MYANMAR**

Country breakdown of tests, positive cases, and network transition in 2021

5

## **INTRODUCTION**

How we operate and GEMS+ impact on malaria in the region

14

## **VIETNAM**

Country breakdown of tests, positive cases, and network transition in 2021

5

## **REGIONAL INSIGHTS**

GEMS+ network performance, transition, and surveillance highlights in 2021

17

## **PROGRAM EVALUATION**

Summary of GEMS+ research activities in 2021

9

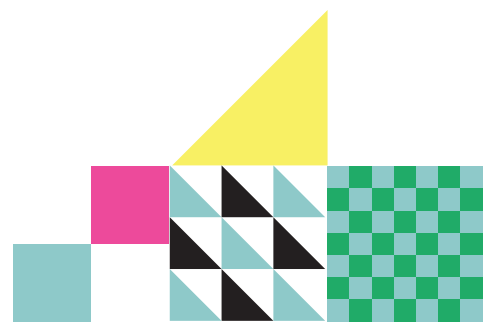
## **LAO PDR**

Country breakdown of tests, positive cases, and network transition in 2021

18

## **LOOKING FORWARD**

Applying lessons learned to 2022, research planning, and upcoming publications



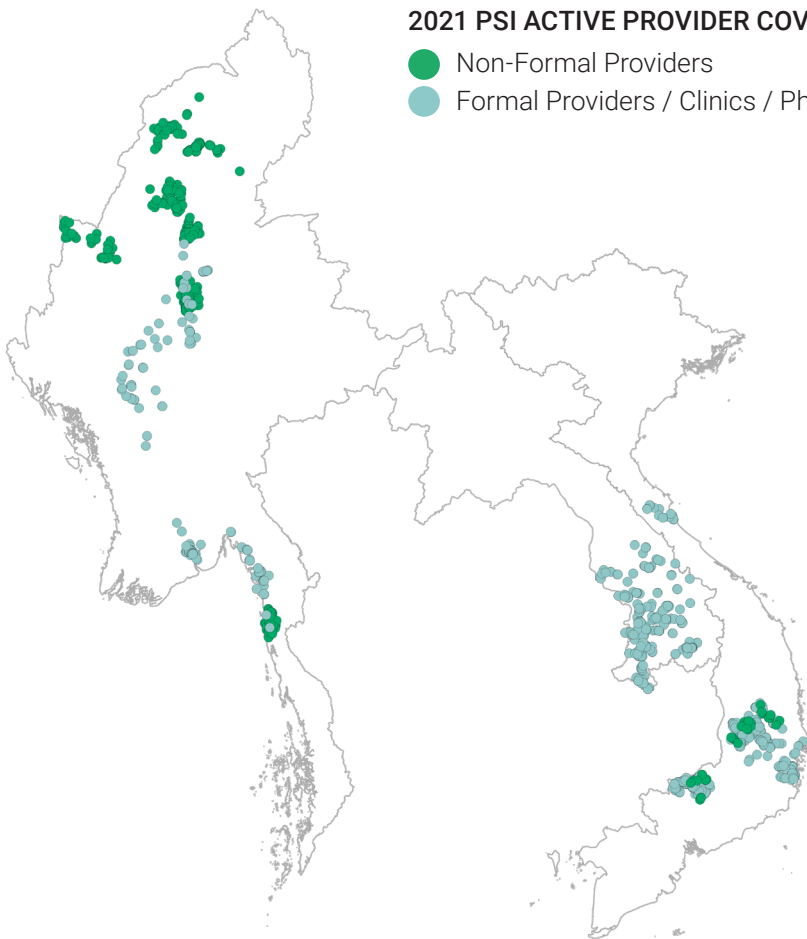




# GEMS+ NETWORK COVERAGE

## 2021 PSI ACTIVE PROVIDER COVERAGE

- Non-Formal Providers
- Formal Providers / Clinics / Pharmacies



## GEMS+

### THE GREATER MEKONG SUBREGION ELIMINATION OF MALARIA THROUGH SURVEILLANCE

The Greater Mekong Subregion Elimination of Malaria through Surveillance (GEMS+) program supports national malaria programs (NMPs) in the Lao PDR, Myanmar, and Vietnam to integrate the private sector into national malaria elimination strategies, surveillance systems, planning, and management structures. This annual report shares 2021 results, the second year of GEMS+, during which Population Services International (PSI) worked closely with national and subnational partners to transition the GEMS+ private sector network under NMP oversight and management.

## INTRODUCTION

Countries in the Greater Mekong Subregion (GMS) are successfully reducing the burden of malaria.<sup>1</sup> Since 2010, there has been a reported 86% decline in cases and 97% decline in deaths. Between 2019 and 2020 alone, the GMS region experienced a 47% decline in malaria cases. In the GMS, 40–78% of the population first seek health care in the private sector,<sup>2</sup> so to achieve malaria elimination, sustained private sector engagement is needed throughout the region.

PSI's GEMS+ program strengthens private sector case management and surveillance to accelerate malaria elimination in the Lao PDR, Myanmar, and Vietnam. Despite significant challenges to operating within the context of COVID-19 and the political upheaval faced in Myanmar, GEMS+ worked within all three countries to manage and provide high-quality support to the private sector network while engaging national and subnational NMPs to integrate the private sector into national malaria elimination management structures.

After two years of operating within the context of COVID-19, the full impact of the pandemic on malaria elimination is still unknown. However, the resilience of the malaria elimination efforts in the GMS has been tested. Across the region, we continue to witness a decline in malaria cases and deaths as well as program implementation adaptations that strive to ensure that those most at risk of malaria have access to quality case management and treatment wherever they choose to seek care.

To learn more about how we operate, visit [GEMS+ at www.psi.org/GEMS](http://www.psi.org/GEMS)



## REGIONAL INSIGHTS

GEMS+ worked diligently within all three countries to manage and provide high-quality support to the private sector network while engaging national and subnational malaria programs to strategically integrate the private sector into the public health systems despite the significant challenges to operating within the context of COVID-19 and the political upheaval faced in Myanmar. This challenging context provided an opportunity for GEMS+ to continue expanding the use of digital tools as a vital mechanism for malaria case management and for maintaining routine malaria surveillance and supportive supervision. Within Myanmar, GEMS+ rapidly adapted transition and implementation strategies to reduce service interruptions, maintain quality of care, and ensure a responsible handover of the private sector network to other donor networks.

1 APLMA, Progress in times of a global pandemic: APLMA Leaders' Dashboard 2020, [www.aplma.org/blogs/progress-in-times-of-a-global-pandemic-aplma-leaders-dashboard-2020](http://www.aplma.org/blogs/progress-in-times-of-a-global-pandemic-aplma-leaders-dashboard-2020).





2 See Bennett et al. Malar J (2017) 16:252, DOI 10.1186/s12936-017-1901-1, [ncbi.nlm.nih.gov/pubmed/28615026](http://ncbi.nlm.nih.gov/pubmed/28615026)

## NETWORK PERFORMANCE





In 2021, GEMS+ supported **1,821 active private outlets** in the GMS. Together, this regional network conducted a total of **160,086 rapid diagnostic tests** (RDTs) across three countries and detected **1,397 positive cases**, which were reported to national

surveillance systems. The GEMS+ private sector network detected 5.1% of the nationally reported caseload in the Lao PDR, 1.8% in Myanmar, and 9.2% in Vietnam.<sup>3,4,5</sup>

### 2021 TESTING & OUTLET OVERVIEW

	LAO PDR	MYANMAR	VIETNAM	REGIONAL
 # Of Active Private Sector Outlets	330	899	592	<b>1,821</b>
 Fever Cases Tested	59,470	87,814	12,802	<b>160,086</b>
 2020 Tests (National)	643,887	1,654,543	1,034,562	<b>3,332,992</b>
 GEMS+ Private Sector % Of 2020 Tests Nationally	9.2%	5.3%	1.2%	<b>4.8%</b>

### 2021 CASE DETECTION OVERVIEW

	LAO PDR	MYANMAR	VIETNAM	REGIONAL
 Cases Detected	200	1,154	43	<b>1,397</b>
 Positivity Rate	0.3%	1.3%	0.3%	<b>0.9%</b>
 2021 Positives (National)	3,924	65,096	467	<b>69,487</b>
 GEMS+ Private Sector % Of 2021 Positives Nationally	5.1%	1.8%	9.2%	<b>2.0%</b>

<sup>3</sup> HMIS, Lao PDR National Data, January – December 2021.

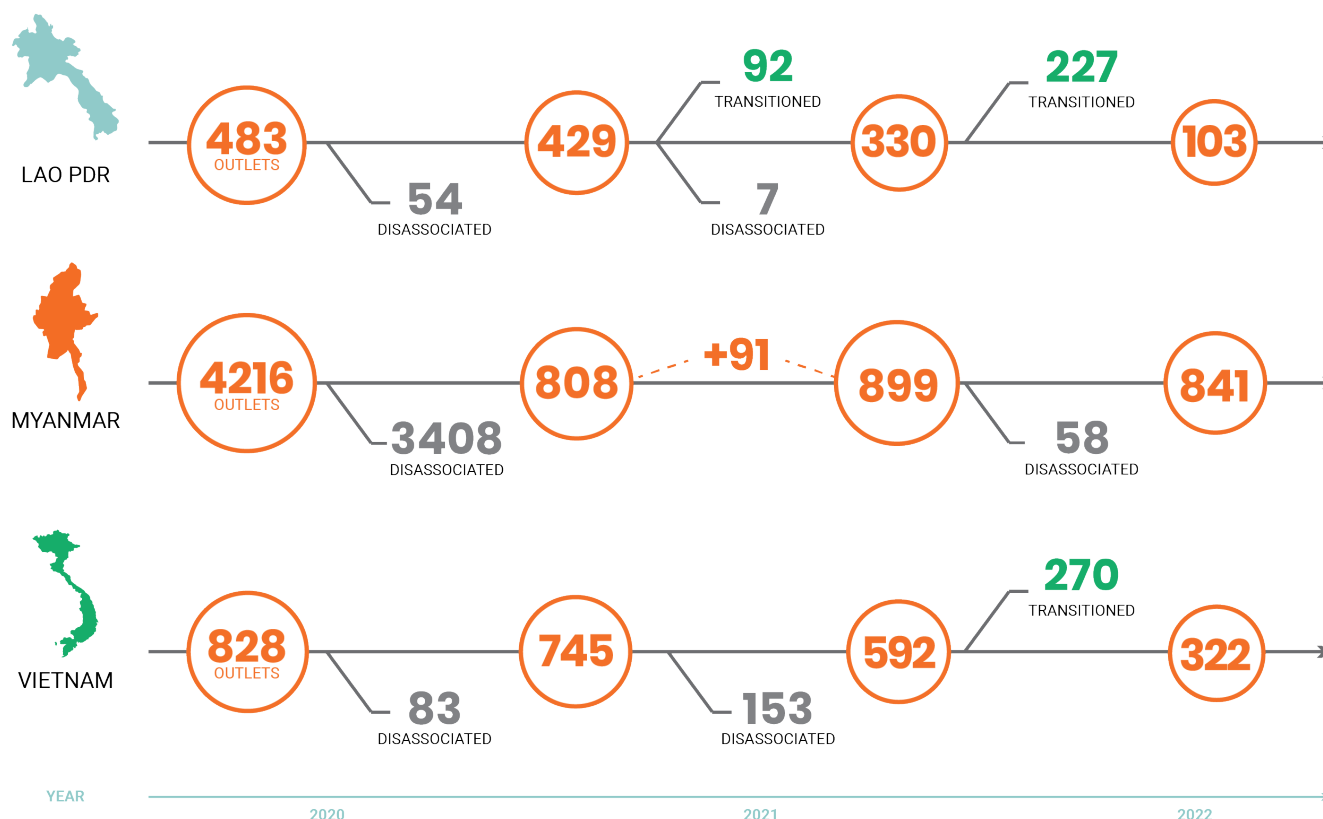
<sup>4</sup> NMCP National Data, January – November 2021. National data for Myanmar is preliminary for January – November 2021, and the proportion of the GEMS+ contributions to caseload are likely to decrease once the verified December data is available.

<sup>5</sup> NIMPE National Data, January – December 2021.

# NETWORK REFINEMENT & TRANSITION

## GEMS+ NETWORK TRANSITION TIMELINE

■ Outlets disassociated from the network  
■ Outlets transitioned to National Malaria Program (NMP)



GEMS+ **transitioned 497 formal private outlets** to NMP oversight by the close of the year, including 227 outlets in the Lao PDR and 270 in Vietnam. In addition to identifying priority private outlets to transition to NMPs, the annual network refinement process also included disassociating (i.e., discontinuing support) outlets throughout the year that closed or no longer met the criteria established in partnership with NMPs for inclusion in a refined private provider network. The complex operating environment in Myanmar following the coup d'état significantly impeded PSI's ability to conduct the engagement and advocacy required to facilitate transition of the GEMS+ network under NMP ownership. To fill the gap in quality malaria services and to better align with Global Fund malaria programming in Myanmar, GEMS+ adopted support of Integrated Community Malaria Volunteers (ICMV) providers in GEMS+-supported geographical areas in

Year 2, which increased the network size in the first half of the year. However, armed conflict in GEMS+ implementation areas and COVID-19 restrictions led to periodic and permanent private outlet closures, which shrank the network in the second half of the year. The GEMS+ transition strategy in Myanmar will focus on identifying other donor networks that would be appropriate for absorbing high-performing and high-burden private sector channels.

In the first quarter of 2022, PSI Vietnam will transition the remaining 322 GEMS+ supported outlets into the RAI3E subrecipient, and GEMS+ programming in Vietnam will pivot from implementing direct support to the private sector to providing technical assistance to the RAI3E subrecipient, the national program, and the provincial-level stakeholders responsible for the oversight of the private sector. Within the countries where GEMS+ operates, PSI Vietnam is



the second to fully transition its network (Cambodia implementation ended in 2020) and compile standard operating procedures (SOPs) and lessons learned for private sector engagement into a comprehensive toolkit.<sup>6</sup>

## SURVEILLANCE HIGHLIGHTS

All private sector data generated by GEMS+-supported outlets are shared with NMPs in different ways, including submitting monthly reports and real-time short messaging service (SMS) notification. Chatbots using popular messaging applications, such as Facebook Messenger in the Lao PDR and Myanmar as well as Viber in Myanmar, are also used internally for reporting from the private provider directly to PSI. Nearly 66% of the GEMS+ network in the Lao PDR are registered Facebook chatbot users for malaria data reporting, which can now be used to report all malaria data, including aggregate monthly numbers for cases tested and malaria commodities, in addition to the real-time reporting module for positive cases. PSI continues to innovate and leverage digital reporting mechanisms in order to facilitate timely malaria case reporting by providers and appropriate response by the NMP. In 2021, PSI developed an additional chatbot option on the WhatsApp platform in the Lao PDR. This latest reporting option includes automated reminder notifications to providers to submit reports and instant notifications to district and provincial malaria teams when positive cases are reported. Building on the success of using Zalo chatbot for malaria case reporting in Vietnam, PSI also developed a reporting mechanism using Zalo group chats by district so that private outlets could report directly to district malaria officers. In Myanmar, PSI expanded malaria chatbot user enrollment for real-time case notification and provided virtual training to an additional 66 providers in 2021. The chatbot includes automated SMS sent to local health authorities to facilitate rapid follow-up on each reported case. In 2021, 27% of cases reported by the private providers were through this function.

Integration into national surveillance systems is carried out by public sector staff. In the Lao PDR, private sector data integration is automated through a monthly data push into the national health management information system (HMIS). Routine data quality audits, which measure data completeness, accuracy, timeliness, integrity, confidentiality, and precision, yielded scores ranging from 96.2% in the Lao PDR to 98% in Vietnam.<sup>7</sup>

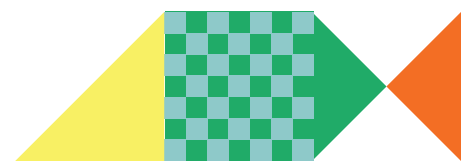
In addition to reporting, providers in elimination areas in the Lao PDR, Myanmar, and Vietnam participate in case investigation protocols with high levels of timely completion. Where and when travel was possible in Myanmar, GEMS+ participated in outbreak response activities and conducted reactive case detection at worksites (i.e., plantations and mines), provided health education sessions, distributed posters and pamphlets, and distributed long-lasting insecticidal nets (LLINs).

In all three countries, national restrictions on domestic travel and stay-at-home orders fluctuated throughout the year (compounded by safety and security concerns in Myanmar), which influenced the GEMS+ approach to providing supportive supervision and supplying stock to the provider network. PSI Myanmar utilized tele-supervision guidelines and regularly maintained contact with the network through telephone calls, SMS, and popular messaging apps, and contingency plans were implemented to prevent stock-outs, including the provision of 3 months of buffer stock delivered to specified points where providers could access the commodities. In the Lao PDR and in Vietnam, GEMS+ provided a hybrid of in-person and virtual support. Additionally, GEMS+ used geographic, supply, and caseload data to identify and pre-emptively deliver buffer stock to private providers to prevent stock-out.

Despite these challenges across the GEMS+ regional network, private outlets in two out of three countries met quality of care targets. 88% of the network scored above the 80% minimum standard on quality assessments, measured by PSI's Health Network Quality Improvement System (HNQIS).

<sup>6</sup> Private Sector Engagement in Malaria Case Management toolkit available in the 'resources' section on [www.psi.org/gems](http://www.psi.org/gems)

<sup>7</sup> RDQAs were not conducted in Myanmar in 2021.







# LAO PDR HIGHLIGHTS

In the Lao PDR, the PSI-supported GEMS+ network size decreased by 23% from 2020 to 2021. From January–December 2021, the GEMS+ network conducted **59,470 tests**, identified **200 positive cases**, and detected **5.1% of the national caseload**, which is a 7.4% decrease in the number of positive cases identified from 2020. The reduction in case detection and contribution to national caseload was influenced by several factors, including the closure of private outlets during a COVID-19 induced lockdowns extending from April through the end of the year. Additionally, even where clinics or pharmacies remained open, the providers saw fewer clients, likely because clients preferred to stay away from health care providers for fear of exposure to COVID-19. Data from the Center for Malaria Parasitology and Entomology (CMPE) shows that the national caseload increased from 3,537 confirmed cases in 2020 to 3,924 in 2021.<sup>8</sup> In previous years, the decline in caseload has mirrored the national trends. The 2021 deviation is a testament to the impact of COVID-19, which impacted private sector operations and altered care-seeking behavior.

Within the GEMS+-supported network in Laos, providers in geographic areas with an Annual Parasite Index greater than 1 ( $API > 1$ ) provide full malaria case management services operating the Test, Treat, and Track (T3s) model. Providers located in areas with an  $API < 1$  operate the Inform, Educate, and Communicate (IEC) model that refers all suspected malaria cases to public sector providers. Starting the year with 337 outlets in the PSI-supported private network, GEMS+ disassociated 7 outlets between



59,470  
**FEVERS TESTED**



**9.2%**

Of total fevers  
tested in country  
(public, private)



200  
**CASES DETECTED**

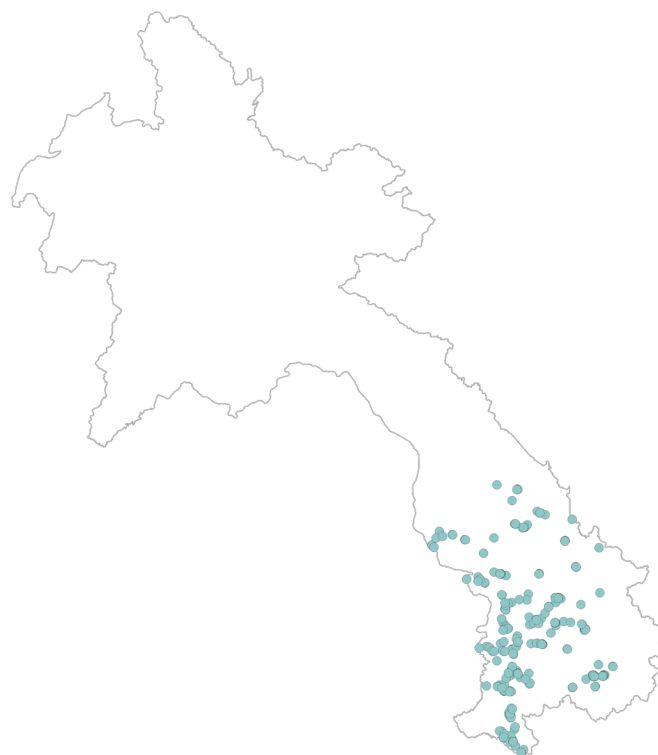


**5.1%**

Of national reported  
caseload detected  
through PSI's networks

## GEMS+ NATIONAL PROVIDER NETWORK

● Formal Providers / Clinics / Pharmacies



<sup>8</sup> HMIS, Lao PDR National Data, January – December 2021

January to June that were closed, inactive, or no longer met the criteria established in partnership with CMPE for inclusion in a refined private provider network. From July onward, GEMS+ managed an **active network of 330 registered private clinics and pharmacies** largely located in the high-burden south. At the close of the year, **227 private outlets transitioned** under CMPE management, all of which are in the malaria-endemic southern provinces and will continue to operate the full case management model. Since April 2020, GEMS+ has transitioned 319 outlets and 74% of the network in the Lao PDR to CMPE management.

## TRAINING, SUPPLY, SUPERVISION

Though COVID-19 cases remained minimal in the first quarter of the year when the bulk of training, supply, and supervision activities took place, two waves of community outbreaks starting in April and August and prolonged lockdowns from national to village levels impeded on-site, in-person, and travel-related program implementation activities to a greater extent than in Year 1. However, this challenging context provided an opportunity for GEMS+ to continue expanding the use of digital tools for malaria case management. When travel was not permitted, field teams monitored and coordinated project activities and provided supportive supervision using electronic platforms such as WhatsApp. Through a hybrid method of in-person and virtual support, 100% of the network received refresher trainings in case management, stock, and at least two supportive supervision visits (SSV).

## QUALITY ASSURANCE (QA)

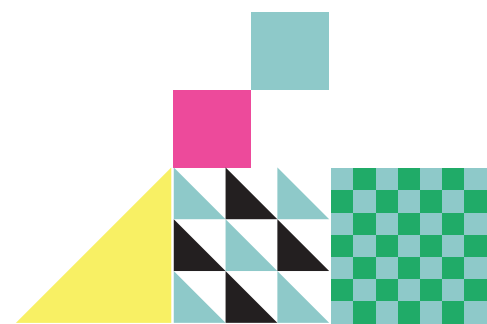
96.2% of the outlets in the GEMS+ network received a satisfactory Quality of Care (QoC) score, up from 92.3% in 2020. Common barriers to providers failing to achieve a score greater than or equal to 80% included carelessness during the screening process, failure to provide enough counseling, and failure to safely dispose of the lancet immediately after testing. Unfortunately, the QA pilot using a checklist in the HNQIS app with government staff in a public facility serving Kong and Pathomphone districts was postponed until early 2022, when it is hoped that in-

person training can take place. Results from the pilot will determine whether CMPE will adopt the HNQIS app into its QA management system. Additionally, data use training for district health officers was postponed until 2022.

## REPORTING

All testing and case data were reported from the private sector to PSI and fully integrated into national malaria statistics, with the number of private sector tests and confirmed cases being reported to the HMIS by the 10th of every month. PSI and CMPE coordinated with several departments in the Ministry of Health (i.e., Food and Drug Department, Health Care and Rehabilitation Department, and Department of Planning and Cooperation) to verify and integrate the transitioned provider outlets into the national HMIS. The inclusion of private providers in the national HMIS has significant implications for private sector health reporting beyond malaria and paves the way for direct reporting from the private to the public sector for malaria and other diseases.

GEMS+ also piloted a mechanism for tracking private sector referrals to the public sector from February–October 2021, during which private outlets referred 53 *Plasmodium vivax* (P. v.) malaria cases to public facilities for treatment. District health officers reviewed monthly reports from GEMS+ and the public facilities to ensure that the number of cases were not double counted in the national HMIS. Key informant interviews revealed that the robust patient counseling and the proactive follow-up of providers to complete referrals were key reasons for completion. The high rates of referral completion provide evidence of strong links between the public and private facilities and an indication that when patients are referred by the private sector to the public sector, there is an elevated level of compliance. These results validate the feasibility of the successful implementation of the IEC model of private sector engagement.



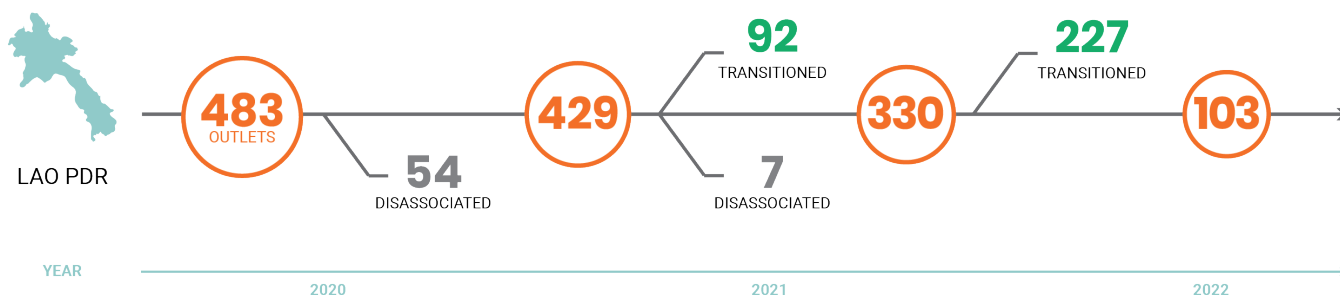


## NETWORK TRANSITION

The transition strategy in the Lao PDR was thoughtfully designed to engage the government at the national level in co-owning elements of private sector support throughout the year to facilitate network transition at year-end. Using performance and Annual Parasite

Index (API) data to identify appropriate outlets, GEMS+ transitioned 227 outlets (69% of the private sector network) in the high burden south under CMPE management at the close of 2021.

- # Outlets currently part of the network
- # Outlets disassociated from the network
- # Outlets transitioned to National Malaria Program (NMP)







# MYANMAR HIGHLIGHTS

GEMS+ managed an active network of **899 private sector outlets** across three private sector channels in Myanmar: 1) Sun Quality Health Network (SUN), who are qualified physicians, typically working in a clinic setting; 2) Non-formal private outlets (PO) that consist of mobile drug vendors, drug shops, and general retail stores; and 3) the ICMV, who are aligned with the National Malaria Control Programme (NMCP) and can provide integrated health care in line with government policy.

The GEMS+ network **conducted 87,814 tests; identified 1,154 positive cases** across the SUN, PO, and ICMV channels; and **detected 1.8% of the national caseload**.<sup>9</sup> Testing increased by 9.3% from 2020 to 2021, and positive case identification increased by 115%. With the addition of ICMVs in 2021, the GEMS+ network increased by 11%, and ICMVs detected 50% of identified positive cases. Nearly 90% of the positive cases detected by the GEMS+ network were *Plasmodium vivax* (P. v.) and mostly concentrated in Myitkyina, Madaya, Banmauk, and Ye townships. This increase in positive case detection is attributed to 1) the absence of reliably open public malaria facilities due to strikes and closures, 2) increased numbers of displaced urban populations in rural areas, and 3) increased identification of relapsed P. v. cases. Concerningly, patient hesitancy to seek services indicates that many cases may be going undetected. Where travel was permitted, GEMS+ participated in outbreak response activities and conducted reactive case detection at worksites (i.e.,

plantations and mines), provided health education sessions, distributed posters and pamphlets, and distributed LLINs.



**87,814  
FEVERS TESTED**



**1,154  
CASES DETECTED**



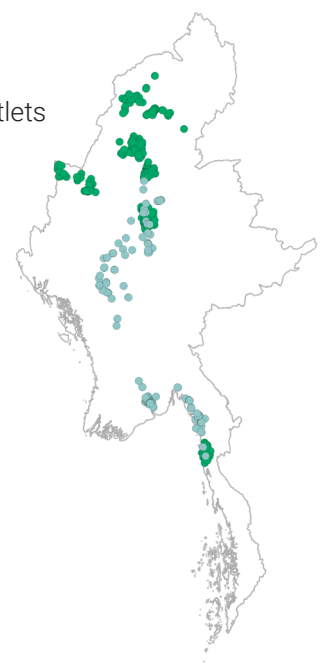
**5.3%** Of total fevers tested in country (public, private)



**1.8%** Of national reported caseload detected through PSI's networks

## GEMS+ NATIONAL PROVIDER NETWORK

- Physicians / Clinics
- Non-Formal Private Outlets



<sup>9</sup> NMCP National Data, January – November 2021. National data for Myanmar is preliminary for January – November 2021, and the proportion of the GEMS+ contributions to caseload are likely to decrease once the verified December data is available.

## TRAINING, SUPPLY, SUPERVISION

PSI Myanmar worked diligently throughout 2021 to adapt to the complex operating environment and developed tele-supervision guidelines to provide supportive supervision to the network via phone calls, SMS, and messaging apps (i.e., Viber, Facebook Messenger). Though mobile network interruptions hindered SSV implementation, 78% of the network received at least two supportive supervision visits, either in person or by tele-support. Some in-person program activities, such as provider refresher trainings, could not be implemented because of restrictions on gatherings, outlet closures, and strikes following the coup. Additionally, widespread internet outages interrupted/prevented virtual training. Commodity supply was monitored remotely, and innovative arrangements such as the use of drop-off points were used to minimize travel but maintain uninterrupted 3-month commodity supply.

## QUALITY ASSURANCE (QA)

In-country travel restrictions, armed conflicts, and widespread cellular network outages necessitated postponing in-person QA assessments to the fourth quarter of 2021. However, when possible, PSI Myanmar assessed providers virtually through video calls using a structured question guide. 89% of the outlets assessed received a satisfactory QoC score, and the POs and ICMV channels were prioritized for assessment. The SUN channel did not receive QA assessments in 2021, as assessing medical doctors by video call is not feasible. In 2022, GEMS+ will resume assessments of the SUN channel and will emphasize support to the low-scoring providers to improve their quality of care.

## REPORTING

All GEMS+ testing and case data through November 2021 were integrated into the national surveillance system per the preliminary January–November data provided by NMCP, with the highest reporting rates from the PO (87%) and ICMV (89%) channels. Nearly half of the SUN clinics closed in 2021, which explains the low reporting rate (47%) in this channel. The GEMS+ network leveraged mobile reporting through the Facebook Messenger and Viber chatbots, SMS, and phone calls to submit confirmed malaria cases. PSI Myanmar enrolled and provided virtual training to an additional 66 GEMS+ SUN providers in using the malaria chatbot for real-time case notification. The chatbot includes automated SMS sent to local health authorities to facilitate rapid follow-up on each reported case, and 314 cases were notified through the chatbot in 2021. The chatbot virtual training was largely funded by the Australian Government Department of Foreign Affairs and Trade (DFAT) Health Security Initiative investment, which leveraged the foundation built under GEMS and GEMS+ to improve private sector disease surveillance.

## NETWORK TRANSITION

Shortages of NMCP staff at all levels, starting from townships up to the state, regional, and national level, significantly impeded the GEMS+ ability to conduct the engagement and advocacy required to facilitate transition to NMP oversight. Additionally, GEMS+ introduced the ICMV channel into the private sector network in 2021, which increased network size by 11% from 2020 for a total of **899 private sector outlets**. In 2022, GEMS+ will work with the Global Fund principal recipient to hand over as much of the network as possible. This transition will be a rational process guided by data and operational feasibility. In areas where transmission continues to be relatively high, the GEMS+ team will advocate for the adoption/integration of the private providers into other donor networks. Where cases are sufficiently low, providers will be disassociated.

- # Outlets currently part of the network
- # Outlets disassociated from the network





# VIETNAM HIGHLIGHTS

In 2021, the GEMS+ network conducted **12,802 tests**, identified **43 positive cases**, and detected **9.2% of the national caseload**, a 50% decrease in contribution to national caseload from 2020. Patient reluctance to visit health facilities along with stay-at-home orders that limited regular travel and reduced potential malaria exposure among forest-goers resulted in decreasing customer volume at private health facilities and are likely factors contributing to the reduction in case detection and contribution to national caseload. Preliminary data from Vietnam's National Institute of Malaria, Parasitology and Entomology (NIMPE) shows that national caseload decreased by 68% from 2020 to 2021, continuing the trend of significant malaria case reduction in the public and private sector in Vietnam.<sup>10</sup>

The GEMS+ network in Vietnam consisted of **592 private sector outlets** consisting of clinics, pharmacies, and community malaria champions (CMC). At the close of the year, **270 private clinics and pharmacies** (46% of the network) **transitioned** under Department of Health (DOH) and Centers for Disease Control and Prevention (CDC) management in Binh Phuoc, Dak Lak, Gia Lai, and Khanh Hoa provinces.



12,802  
**FEVERS TESTED**



43  
**CASES DETECTED**



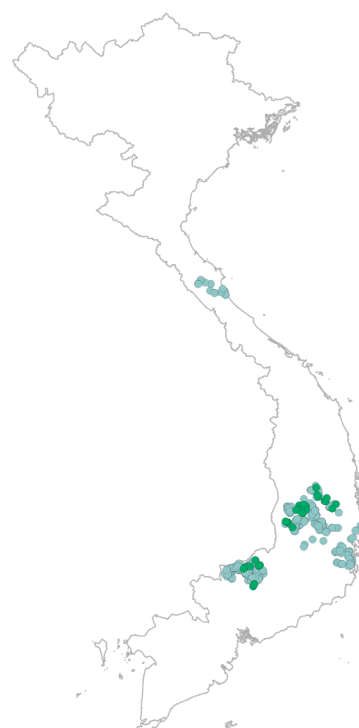
Of total fevers tested in country (public, private)



Of national reported caseload detected through PSI's networks

## GEMS+ NATIONAL PROVIDER NETWORK

- Formal Providers / Clinics / Pharmacies
- Non-Formal Providers



<sup>10</sup> NIMPE National Data, January – December 2021.





## ADVOCACY

Through strong links with the national, subnational, donor, and implementing partners, GEMS+ has successfully identified appropriate avenues for transitioning private providers into the wider health system. PSI engaged RAI3E in developing the private provider transition strategy as well as proactively approached NIMPE and provincial partners to advocate the importance of collaborating with the RAI3E subrecipient, Vietnam Public Health Association (VPHA), on planning the transition process. Ensuring that, in the last mile of malaria

elimination in Vietnam, the critical engagement of the private sector necessary for malaria elimination certification is maintained. With NIMPE's endorsement, PSI conducted a series of orientation activities with VPHA to mitigate risk of overlapping interventions. Building on achievements in both advocacy and collaboration with VPHA, GEMS+ received approval from the Bill & Melinda Gates Foundation for an additional year of programming in Vietnam.

## TRAINING, SUPPLY, SUPERVISION

COVID-19 restrictions on travel and gatherings were ongoing in 2021 and hindered field activities to a greater extent than in 2020. For this reason, GEMS+ and provincial partners prioritized refresher trainings, detailing (commodity supply) visits, and supportive supervision for clinics and pharmacies identified to transition at the end of 2021. Together, GEMS+ and provincial partners jointly conducted trainings and supportive supervision for 96% of the outlets identified for transition. 100% of the GEMS+ supported clinics and pharmacies identified to transition received stock, while CMCs received stock directly from provincial commune health stations. When restrictions prevented PSI field staff from traveling, the provincial partners continued to offer support on-site to the private sector outlets and used video/tele-communications during the visits so that PSI staff could provide additional support.

## QUALITY ASSURANCE (QA)

Due to the COVID-19 restrictions, small numbers of patients, and private providers prioritizing COVID-19 over malaria activities, only 66% of the clinics in the network received an assessment, of which 67.8% reached a satisfactory QoC score during the latest QA assessment.

## REPORTING

This year also witnessed stronger linkages between CDC and GEMS+ in data integration into national surveillance systems. 100% of tests and cases detected by GEMS+ were reported to provincial authorities via 24-hour notification mechanisms and monthly provincial reports, and 68% of the case data were integrated into national reporting statistics. This is a 65% increase from last year, when only 41% of the data was integrated into national reporting data.

## NETWORK TRANSITION

The transition strategy in Vietnam engaged the government at the provincial levels in co-owning elements of private sector support throughout the year to facilitate network transition at year-end. Starting the year with 745 outlets in the private sector network, GEMS+ disassociated 153 private outlets that were inactive, closed, or no longer met the criteria for inclusion in a refined private provider network. Concurrently, GEMS+ engaged provincial

DOH and CDC malaria programs in co-ownership of training, commodity supply, QA, and supervision for **270 private sector clinics and pharmacies that fully transitioned** at year-end. The 270 outlets represent 45.6% of the GEMS+ active network transitioned in 2021 and 36% of the total GEMS+ network transitioned under government management to date. The remaining outlets in the GEMS+ network will be transitioned to national oversight at the start of 2022.

# Outlets currently part of the network

# Outlets disassociated from the network





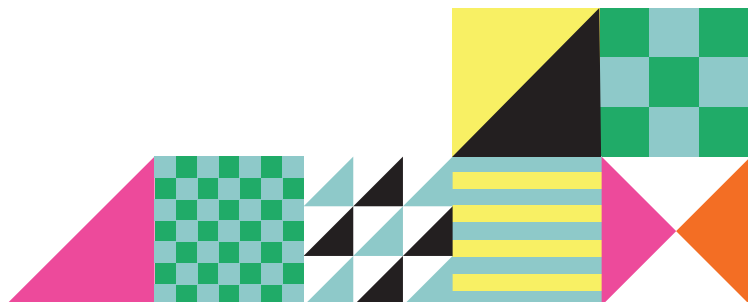
# PROGRAM EVALUATION

A GEMS+ evaluation in Vietnam was implemented 2021 using the Outcome Harvesting<sup>11</sup> methodology. The objective of the evaluation was to document and share the results of GEMS (2016–2019) and GEMS+ activities in Vietnam since the implementation of the project in 2016 as well as facilitate a critical analysis of the program's contribution to evidence-based changes in relation to the GEMS/GEMS+ activities in the provinces of Khanh Hoa, Binh Phuoc, Gia Lai, and Dak Lak. PSI developed SOPs for private sector engagement in malaria case management using findings, case studies, and best practices identified in the GEMS+ evaluation, which VPHA began to utilize in December 2021.

<sup>11</sup> Developed by Ricardo Wilson-Grau, et al, in 2002. Outcome Harvesting (OH) is framed from the perspective of the International Development research Center Outcome Mapping (Earl, S. et al, 2001) and the Utilization Focused Evaluation proposed by Michael Quinn Patton (Patton, 2008, 2011).

<sup>12</sup> RE-AIM is an implementation research framework that has been used for the design, planning, implementation, and evaluation of public health impact programs for over 20 years. Bethany M. Kwan et al (2019), RE\_AIM in real world: Use of the RE\_AIM Framework for Program planning and evaluation in clinical and community settings. Public Health, 22 November 2019. <https://doi.org/10.3389/fpubh.2019.00345>.

In the Lao PDR, PSI is conducting a program evaluation utilizing the RE-AIM implementation research framework.<sup>12</sup> The study objectives are to 1) assess the extent to which the program is acceptable and adopted by the private providers, 2) assess the implementation of the transition of the private providers to the CMPE, and 3) assess whether the transition plan of the of private providers to the CMPE is maintained at the institutional and provider level. Data analysis for phase one of the evaluation, the extent of integration and successful transition for the initial cohort of 92 providers transitioned in 2020, will be finalized in early 2022, with data collection for phase two starting in mid-2022. The findings will be used to inform best practices and lessons learned that will be incorporated into the private sector engagement SOPs.







# LOOKING FORWARD

Much like the rest of the world, the pandemic context challenged GEMS+ to be nimble and adapt programming to the shifting operating environment. In Myanmar, the emergence of political instability is further constraining an operating environment already significantly impacted by the COVID-19 pandemic. A key strategy for GEMS+ going forward will be handing over as much of the network to the Global Fund principal as possible. This transition will be a rational process guided by data and operational feasibility. In areas where transmission continues to be relatively high, the GEMS+ team will advocate for the adoption/integration of the private providers into other donor networks. This will start with proposing to integrate PSI-supported ICMVs into the national network or to link them with the broader community-based health worker approach, which covers a wide range of health areas. Where cases are sufficiently low, providers will be disassociated from the PSI network based on the following criteria: 1) low performance such as zero testing for at least 6 months and zero reporting for at least 6 months; 2) provider willingness to continue in network; 3) health and safety conditions for providers to continue in network; and 4) operating context of the service provision area such as armed conflict or military orders to stop services.

In Vietnam, PSI has identified some members of the CMC channel as appropriate for absorption into the recently awarded investment from the Bill & Melinda Gates Foundation's Malaria Department on Leveraging EOCs (Emergency Operations Centers) to Eliminate Malaria in Vietnam. The CMCs will serve as reporting points for event-based surveillance (EBS) and continue to report positive malaria cases to the provincial authorities (i.e., commune health stations). Additionally, PSI Vietnam is in discussion with the Center for Supporting Community Development Initiatives (SCDI) about integrating some CMCs into their community action malaria team (CMAT) networks, which refer cases to relevant health facilities for testing and support treatment adherence. At

the start of 2022, through a collaborative process involving VPHA, DOH, and CDC, PSI Vietnam will transition the remaining clinics and pharmacies in the GEMS+ network under VPHA, DOH, and CDC management, and GEMS+ programming in Vietnam will pivot from implementing direct support to the private sector to providing assistance to these three key stakeholders.

PSI will synthesize the lessons learned and best practices generated under GEMS+ and its predecessor, GEMS, into SOPs for engaging and managing private provider networks for NMPs in the Lao PDR and Myanmar. In Vietnam, the GEMS+ team will use the program evaluation results to document project close-out and generate evidence outputs (such as case studies, learning briefs etc.).

The following resources were published in 2021:

- Motivation to Test, Treat, and Report Malaria Cases: A Quantitative Assessment Among Private Sector Providers in the Greater Mekong Subregion (<https://doi.org/10.1186/s12936-022-04108-7>)
- The use of respondent-driven sampling to assess febrile illness treatment-seeking behaviours among forest-goers in Cambodia and Vietnam (<https://doi.org/10.1186/s12936-021-04001-9>)
- In search of the last malaria cases: ethnographic methods for community and private sector engagement in malaria elimination in Vietnam, Laos, and Cambodia (<https://doi.org/10.1186/s12936-021-03903-y>)
- Costing electronic private sector malaria surveillance in the Greater Mekong Subregion (<https://doi.org/10.1186/s12936-021-03727-w>)
- PSI Vietnam's Private Sector Engagement in Malaria Case Management Toolkit



## CONTACT

**DR. KEMI TESFAZGHI**

GEMS+ Program Director

✉ [ktesfazghi@psi.org](mailto:ktesfazghi@psi.org)

**LEE-ANN GALLARANO**

GEMS+ Program Manager

✉ [lgallarano@psi.org](mailto:lgallarano@psi.org)

**BRAM PIOT**

Senior Surveillance  
and Monitoring Advisor

✉ [bpiot@psi.org](mailto:bpiot@psi.org)

## CONNECT WITH US

 [psi.org/GEMS](https://psi.org/GEMS)

## THANK YOU

The GEMS+ team is particularly grateful for the financial and technical support and continued flexibility of the Bill & Melinda Gates Foundation; and for the continued partnership and collaboration of the National Malaria Programs in the Lao PDR, Myanmar, and Vietnam, and the many committed malaria stakeholders in the region.

