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GEMS GREATER MEKONG SUBREGION ELIMINATION OF MALARIA THROUGH SURVEILLANCE

PSI’s GEMS program strengthens private sector case management and surveillance to accelerate malaria elimination in Cambodia, Lao PDR, Myanmar, and Vietnam. This annual report shares the 2019 calendar year’s results and looks ahead to responding to lessons learned in a dynamic context.
INTRODUCTION

As the countries of the Greater Mekong Subregion (GMS) continue to make steady progress towards malaria elimination goals, all sectors – public, community, and private – need to be prepared to correctly detect and treat cases. With many people still choosing to seek care in the private sector, engaging private health care providers remains critical to ensure that quality treatment is available wherever people seek care, and that timely, accurate data is shared with National Malaria Programs (NMP). For the past four years, PSI’s Greater Mekong Subregion Elimination of Malaria through Surveillance (GEMS) program has been:

1. Increasing universal access to quality malaria diagnosis and treatment services by supporting and supervising private providers,
2. Bringing care closer to the most-at-risk populations by ensuring services are available where they are most needed, and
3. Ensuring that national malaria programs (NMPs) have timely access to private sector data to drive decisions through surveillance.

This report shares the results from the GEMS program’s fourth and final year, during which private provider networks consolidated in Cambodia, Lao PDR, Myanmar, and Vietnam to focus on the areas of most need, tailoring services to best reach at-risk communities. At the end of 2019, PSI supported a total of 5,660 private outlets and malaria volunteers in the GMS, with the financial support of the Bill & Melinda Gates Foundation, Global Fund, Comic Relief and WHO. These outlets include private registered clinics and pharmacies in all countries. In Cambodia, where private health providers are no longer authorized to provide malaria services, Mobile Malaria Workers (MMWs) are stationed on private worksites and in emerging forest-fringe communities. Together, this regional network conducted a total of 642,269 rapid diagnostic tests (RDTs) across four countries, and detected 6,298 positive cases, which were reported into national surveillance systems. PSI-supported networks detected and reported between 9% to 18% of the nationally reported caseload (based on available data) in Lao PDR, Myanmar, and Vietnam, but only 1.3% in Cambodia. Throughout the four years of the project, GEMS conducted 3,531,837 tests, and detected 96,216 malaria cases.
In 2019, network size contracted in all countries except Vietnam, which was also the only country to increase its testing, case detection, and positivity rates compared to 2018. Despite a network decrease of 42% in Myanmar, testing only fell by 25%, although case detection fell by 55% as malaria prevalence continues to decline in the country. Cambodia saw the most significant declines in all aspects, driven by both reduction in the national case load and the ban on private providers. The network in Lao PDR extended to the north, and while testing rates increased by 62% nationwide, case detection fell by 55% compared to 2018, as many of the new outlets are in low burden areas and will be closing in the coming year. In all countries, satisfactory levels of quality of care continue to be recorded, with 81% of the network scoring above 80% on quality assessments measured by PSI's Health Network Quality Improvement System (HNQIS).

All private sector data generated by GEMS supported providers is shared with NMPs in different ways, including submitting monthly reports, automated data integration, and real-time SMS notification. In 2019 for the first time, the NMP in Vietnam, the National Institute of Malariology, Parasitology, and Entomology (NIMPE), accepted private sector data into its national surveillance system following verification at the provincial level, where the data is integrated. PSI also used technological innovations to further simplify provider reporting mechanisms leveraging popular social media tools. The use of a Facebook Messenger bot for reporting was successfully piloted with private providers in Lao PDR. Similar pilots are being carried out in Vietnam with Zalo. In addition, features from a custom malaria case reporting app developed by PSI were integrated into the University of Oslo's updated app as part of the core DHIS2 package.

Lao PDR's NMP, Centre for Malariology, Parasitology and Entomology (CMPE), continues to receive PSI's surveillance data directly into its national surveillance system, and in Cambodia, district and provincial officials have tailored dashboards to be able to see MMW data in their areas. In addition to reporting in elimination areas in Lao PDR, Myanmar, and Vietnam, providers have been participating in case notification protocols, with high levels of timely completion.
PSI/Myanmar continues to support the government to carry out case investigations in two elimination areas, which increased investigation rates from 39% in December 2018 to 46% in December 2019 and ensured that cases found in the private sector are also investigated.

In its final year, GEMS invested in 3 large scale regional pieces of research, including an outlet survey, mystery client survey, and treatment seeking behavior survey. Throughout 2019, community engagement efforts continued to reveal additional insights into the treatment seeking behaviors of some of the more remote and at-risk forest communities, which allowed PSI to improve the support provided and to improve linkages between quality providers and communities. Particularly as malaria declines, communities need to remain vigilant of the risks and engaged in protecting their own health.

To learn more about GEMS please visit: www.psi.org/GEMS
As malaria prevalence falls in all four countries, detecting malaria cases continues to be complex and resource intensive, as they tend to be focalized in remote and hard-to-reach areas. This year GEMS explored different approaches to increasing community engagement (CE) in order to increase testing and case detection. CE was instrumental in developing an increased understanding of the social dynamics that influence behaviors and the most effective way to reach at-risk groups, boosting treatment seeking for fevers, and gaining community support for PSI’s activities in intervention areas. The CE approach also aligned with the WHO’s push for more community-specific approaches in response to emerging data on the heterogeneity of at-risk communities.

The process, combined with PSI’s adoption of a human centered design approach - Empathy, Insights, Prototyping (EIP) - helped GEMS develop a more uniform, evidence-based approach to engaging communities at risk and resulted in (a) a deeper understanding of each community in terms of where influence lies, who is trusted, and what should be considered when influencing behaviors, and (b) stronger relationships and trust with the community itself, making it easier for PSI to operate, and for local authorities to acknowledge and support PSI’s work.

PSI reflected on its experience with CE at the end of 2019 and found that the approach is a useful tool for influencing program implementation and consumer engagement. However, the efforts have not resulted in an attributable increase in case detection, and many of the insights gained were not actionable for PSI within the scope of GEMS. There is much learned that would be valuable to organizations who aim to work more closely with at-risk communities with a longer-term implementation time.

### REGIONAL INSIGHTS

As malaria prevalence falls in all four countries, detecting malaria cases continues to be complex and resource intensive, as they tend to be focalized in remote and hard-to-reach areas. This year GEMS explored different approaches to increasing community engagement (CE) in order to increase testing and case detection. CE was instrumental in developing an increased understanding of the social dynamics that influence behaviors and the most effective way to reach at-risk groups, boosting treatment seeking for fevers, and gaining community support for PSI’s activities in intervention areas. The CE approach also aligned with the WHO’s push for more community-specific approaches in response to emerging data on the heterogeneity of at-risk communities.

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### 2019 TESTING & OUTLETS OVERVIEW

<table>
<thead>
<tr>
<th></th>
<th>CAMBODIA</th>
<th>LAO PDR</th>
<th>MYANMAR</th>
<th>VIETNAM</th>
<th>REGIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Sector</td>
<td># Outlets</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cases Tested</td>
<td>133</td>
<td>483</td>
<td>4,216</td>
<td>828</td>
<td>5,660</td>
</tr>
<tr>
<td>Fever Cases</td>
<td>19,752</td>
<td>73,754</td>
<td>520,341</td>
<td>28,422</td>
<td>642,269</td>
</tr>
<tr>
<td>2019 Tests (National)</td>
<td>612,759</td>
<td>568,336</td>
<td>3,653,389</td>
<td>1,973,095</td>
<td>6,807,579</td>
</tr>
<tr>
<td>PSI Private Sector % of 2019 Tests Nationally</td>
<td>3.2%</td>
<td>13.0%</td>
<td>14.2%</td>
<td>1.4%</td>
<td>9.4%</td>
</tr>
</tbody>
</table>

### 2019 CASE DETECTION OVERVIEW

<table>
<thead>
<tr>
<th></th>
<th>CAMBODIA</th>
<th>LAO PDR</th>
<th>MYANMAR</th>
<th>VIETNAM</th>
<th>REGIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases Detected</td>
<td>421</td>
<td>612</td>
<td>4,388</td>
<td>877</td>
<td>6,298</td>
</tr>
<tr>
<td>Positivity Rate</td>
<td>2.1%</td>
<td>0.8%</td>
<td>0.8%</td>
<td>3.1%</td>
<td>1.0%</td>
</tr>
<tr>
<td>2019 Positives (National)</td>
<td>32,571</td>
<td>6,687</td>
<td>53,179</td>
<td>4,699</td>
<td>97,136</td>
</tr>
<tr>
<td>PSI Private Sector % of 2019 Positives Nationally</td>
<td>1.3%</td>
<td>9.2%</td>
<td>8.3%</td>
<td>18.7%</td>
<td>6.5%</td>
</tr>
</tbody>
</table>
CAMBODIA

19,752 fevers tested
421 cases detected

3.2% of total fevers tested in country (public, private, MMW/VMW)
1.3% of national reported caseload detected through PSI’s networks

PSI’s national provider network
18 communities
115 worksites
CAMBODIA

In Cambodia, PSI supports 133 Mobile Malaria Workers (MMWs), including 115 worksites and 18 forest-fringe communities. MMWs are able to provide malaria care where other services are not available, ensure case management is done in accordance with national guidelines, and share data with the government. As malaria prevalence continues to fall in Cambodia, case detection fell significantly in 2019. PSI continues to review its data and phased out support from 163 to 115 worksites and reduced support to lower priority areas. A significant achievement during 2019 saw PSI's Mobile Malaria Worker network adapt and integrate into the government’s Village Malaria Workers (VMWs) network. This was a long process, which required retraining worksite volunteers to follow the VMW treatment algorithms, transitioning worksite volunteers to VMW case reporting forms, and working with the government and stakeholders to adapt quality assurance (QA) tools and processes for potential use in the public sector. The process resulted in improved mutual understanding and cooperation and provides a strong example of how system alignment can be approached.
Testing increased during the year, particularly as more community-based MMWs began offering services. These community services followed two models: the Community-Led Initiatives for Malaria Elimination (CLIME), which was developed through a human-centered design approach in 2018 and rolled out in April 2019. It includes a high level of involvement of the village chief and community members in the selection of the MMW. An independent evaluation of the approach found that this participatory method resulted in higher awareness of, and trust in the MMW by the community. CLIME is used in six communities, which now have seven trained MMWs. PSI also implements the National Center for Parasitology, Entomology and Malaria Control’s (CNM) Intensification Plan (IP) model, in a further 12 communities, each hosting one MMW. Although case detection was relatively low, once operational, the positivity rates in communities was 0.29% higher than in worksites.

**OCCUPATION AMONG CONFIRMED POSITIVE CASES**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plantation Worker</td>
<td>55%</td>
</tr>
<tr>
<td>Forest Worker</td>
<td>14%</td>
</tr>
<tr>
<td>Construction/Mine Worker</td>
<td>1%</td>
</tr>
<tr>
<td>Military/Police</td>
<td>6%</td>
</tr>
<tr>
<td>Other</td>
<td>24%</td>
</tr>
</tbody>
</table>

**POSITIVE CASES BY PLASMODIUM SPECIES**

<table>
<thead>
<tr>
<th>Species</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pf</td>
<td>14%</td>
</tr>
<tr>
<td>Pv</td>
<td>84%</td>
</tr>
<tr>
<td>Mixed</td>
<td>2%</td>
</tr>
</tbody>
</table>

Plantation work continues to be the occupation of the majority of positive cases (55%), followed by forest work (14%). PSI invested in ensuring that plantation workers were aware of the free, on-site malaria services available to them. In 2019, PSI followed up on 91 index cases and through contract tracing, confirmed one case among 272 tested family members and co-travelers/co-workers. In line with national data, the proportion of Plasmodium Vivax (Pv) cases increased dramatically from 56% in 2018 to 84% in 2019.
Quality of care continued to improve in 2019, with the percentage of worksite MMWs scoring 80% or above on a quality assessment increasing from 85% in 2018 to 95% in 2019. MMWs achieved an average reporting rate of 98% throughout the year. A mystery client survey found that approximately 88% of MMWs and 78% of VMWs provided an unprompted malaria test in response to a fever being reported, and 100% provided a test if prompted. If a visit to a forest was also reported alongside a fever, 62.5% of MMWs and 75% of VMWs offered an unprompted test. 100% of MMWs correctly diagnosed and provided treatment according to national treatment guidelines (i.e. no antimalarial treatment for negative test result).

Going forward, given that the private sector is not allowed to provide malaria services, and the reduced case detection levels on worksites, PSI will transition its malaria support programming in Cambodia to the government throughout the first three quarters of 2020. This will be a phased approach, developed in close collaboration with the government using malaria burden stratification to focus on the highest burden areas, while integrating volunteers into other networks where possible. PSI will continue to collect and share data from worksites and communities during the transition to ensure data is integrated into provincial databases, and lessons learned for the transition will be captured and used to inform approaches in subsequent countries.

* In compliance with an MoH directive issued in April 2018, PSI is no longer supporting private sector outlets to test, treat, and report malaria cases in Cambodia.
Lao PDR

73,754 fevers tested

612 cases detected

13% of total fevers tested in country (Public, Private, VMW)

9.2% of national reported caseload detected through PSI's networks

474 formal private providers

PSI’s national provider network
LAO PDR

In 2019, PSI/Laos and CMPE began phasing out the Public Private Mix (PPM) network in areas that were no longer detecting cases. The network reduced from 525 to 474* PPM providers. Testing increased by 62% compared to 2018, as a result of integrating new national testing guidelines and encouraging testing during supervision visits combined with an effective incentive program. However, as malaria rates continue to decline by 33% across the country, case detection fell by 55% in the PPM network. In the low-burden north, providers participated in malaria elimination case notification protocols in preparation for participation in the PPM network; however, no cases were detected. The proportion of Pf : Pv cases reversed, with 52% of detected cases now being Pv. PSI stepped up discussions with CMPE to explore options for people who test positive for Pv to access radical cure, which is currently only available through District Hospitals.

*S: PSI/Laos also supported an additional 9 shop-based volunteer malaria workers (SVMW).
Testing increased significantly compared to 2018, particularly during the traditional peak season, however case detection peaks were much flatter than previous years. In addition to the PPM network, PSI also worked with CMPE to pilot a shop-based volunteer malaria worker (SVMW). The aim of this private provider channel was to provide services in remote, under-served forest locations, in shops frequented by forest goers, and in areas prone to outbreaks. Ten shopkeepers were trained, and between August and December 2019, they carried out a total of 639 malaria tests, and detected 8 malaria cases (2 Pf in Nong District, and 6 Pv in Khong District). While these results are modest, the 1.2% positivity rate is higher than the PPM network. This small network will be integrated into national oversight under the direct supervision of the District health authority.

Provider reporting increased from 98% in 2018 to 100% in 2019, with this data being directly sent to CMPE’s DHIS2 health management information system to support data-driven decision-making. PSI experimented with new reporting tools in 2019 to simplify reporting for providers through the use of Facebook Messenger app to report all required malaria case data. In addition to case notification, PPM providers in elimination areas are also supporting CMPE to collect additional information to inform case investigations, which can reduce the burden on local health authorities to investigate cases in remote areas.

Quality of care in the PSI/Laos network remained consistent, increasing from 81% to 82% of providers who scored at least 80% on the quality assessment. A mystery client survey confirmed that over half of the mystery clients presenting at a private outlet received an unprompted malaria test after reporting a recent fever compared to 35% in 2018. All clients received a correct diagnosis based on the test results, and no client received an antimalarial for a non-malarial fever.
In 2019, PSI received approval to train military camp medical providers on national treatment guidelines and reporting. A total of 11 military camps were trained in February, and testing began in March. This activity has since been handed over to the Armed Forces Research Institute of Medical Sciences (AFRIMS) to continue with CMPE. PSI/Laos also continued to work with departments in the Ministry of Health, WHO, and CHAI to strengthen the Emergency Operations Center (EOC) at both the national and provincial levels. The PSI/Laos GEMS and EOC staff are leveraging the GEMS experience of malaria program implementation to strengthen the EOC and accelerate malaria elimination efforts. Additionally, PSI, with input from CMPE, will consolidate its network of malaria providers to focus on those in areas that are still detecting cases.
MYANMAR

<table>
<thead>
<tr>
<th>PSI’S NATIONAL PROVIDER NETWORK</th>
<th>COUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYSICIAN CLINICS (SUN)</td>
<td>961</td>
</tr>
<tr>
<td>NON-FORMAL PRIVATE OUTLETS (PO)</td>
<td>985</td>
</tr>
<tr>
<td>COMMUNITY HEALTH WORKERS (ICMV)</td>
<td>2,270</td>
</tr>
</tbody>
</table>

- **520,341** fevers tested
- **4,388** cases detected

14.2% of total fevers tested in country (public, private, VMW)
8.3% of national reported caseload detected through PSI’s networks

14.2% of total fevers tested 
8.3% of national reported caseload detected through PSI’s networks
Throughout the life of the project, PSI/Myanmar maintained the largest and most diverse private sector network in the region, which included qualified doctors working in Sun franchise clinics, integrated community malaria volunteers (ICMVs), and non-formal private outlets (POs) delivering malaria services in hard-to-reach areas. Reduced funding and operating restrictions in four townships, however, caused a further contraction of the network from 7,306 providers in 2018, to 4,216—a 42% reduction. In addition, the worksite channel, which was not detecting cases, was closed. While testing declined by only 25%, case detection fell by 55%. Overall national case detection also fell by 39%, and the PSI contribution to national caseload decreased by 26%.

Integrated Community Malaria Volunteers (ICMVs) and non-formal private outlets (POs) located in rural and peri-urban areas throughout the country are responsible for the vast majority of testing and case detection. Sun franchise clinics tested relatively few cases compared to other channels. The non-formal private outlet network saw the highest positivity rate of all channels at 1.1%. The worksite channel, launched in 2017, was closed at the beginning of 2019, as very few sites were consistently detecting cases. The four that were still regularly finding cases have been connected to the nearest ICMV to ensure that malaria services remain available.
Quality control across such a large network can be challenging, however overall, quality of care continued to improve in 2019, with 73% of all providers scoring over 80% on quality assessments. A variation is observed across provider types, with 96% of Sun doctors scoring in the top category, 81% of POs, and 62% of ICMVs. The fall in ICMV scores is likely a result of the recruitment of 243 new providers (as new providers tend to score less and improve over time), and new tasks that were added to their responsibilities. Mystery client surveys results also reveal differences in performance across channels. Performance is high for correct diagnosis (98% for Sun doctors and POs, and 100% for ICMVs) and correct treatment (99% for Sun doctors, and 98% for POs and ICMVs), however testing in response to reporting a fever is lower, with only 33% of Sun doctors (who test less than the other channels) and 33% POs offering an unprompted malaria test in response to reporting a fever, compared to 63% of ICMVs. Testing rates increased after prompting to 48% for Sun doctors, 39% for POs, and 71% for ICMVs.
Maintaining high reporting rates has been challenging in Myanmar, although this improved in 2019. On average, 74% of POs, 80% of ICMVs, and 66% of Sun doctors submitted regular reports this year, compared to 39% of POs, 74% of ICMVs, and 69% of Sun doctors in 2018. Sun doctors continue to participate in case notification protocols, and PSI/Myanmar maintains support to the NMCP for case investigations, with two Case Investigation Officers (CIOs), one each in Mandalay in Yangon. In 2019, the CIOs completed 457 case investigations in response to the 998 notified cases, which is an increase in completion rates compared to 2018. Those that were not investigated were either lost to follow up, or the Officer did not have enough time in the month to follow-up with all notifications – particularly when cases were in very remote areas. To date, the vast majority of cases have been classified as “imported”, with a smaller proportion considered recrudescent/relapse, and only a few indigenous cases were confirmed.

A significant achievement in 2019 was the drafting of Private Sector Guidelines, with the support of WHO and in collaboration with National Malaria Control Programme (NMCP). These guidelines are under review, and will be integrated into the malaria elimination strategy, marking the beginning of a gradual transition of oversight of the private sector from an NGO to the government. In 2020, PSI will continue to work with the NMCP to refine the network to focus on the highest burden areas.
VIETNAM

PSI’S NATIONAL PROVIDER NETWORK

- **Formal Private Clinics/ Pharmacies**: 703
- **Non-Health Outlets**: 45
- **Community Health Outlets**: 63
- **Community Malaria Champion**: 17

28,422 Fevers Tested

877 Cases Detected

Of Total Fevers Tested in Country (Public, Private, VMW): 1.4%

Of National Reported Caseload Detected Through PSI’s Networks: 18.7%
VIETNAM

PSI/Vietnam’s malaria network continued to expand in 2019 and is now active in Khanh Hoa province, in addition to Binh Phuoc, Gia Lai, and Dak Lak, with a 34% increase in participating providers. The number of tests conducted increased by 35%, and case detection increased by 40%. As a result of the growing number of cases detected by the private sector, PSI signed a Memorandum of Understanding with NIMPE, and works with Provincial health authorities to verify all cases in order to integrate private sector data into the national surveillance system at the provincial level.

In Vietnam, only private clinics are allowed to test and treat for malaria, however, in agreement with some provincial authorities, PSI has trained pharmacies, community malaria champions (CMCs), and consumer good shops to test and refer malaria cases. These non-health providers are located in rural areas and are already frequented by forest-goers. The majority of cases in the PSI network are detected (and often treated) by clinics (74%), followed by pharmacies (13.6%).
During the year, PSI/Vietnam undertook human-centered design research to engage the community to better understand forest-goer attitudes, preferences, and behaviors. This revealed a lack of trust in non-medical staff performing medical tasks – such as their peers conducting malaria tests – as well as a continued lack of importance attached to malaria. This prompted PSI to organize community events whereby people who had experienced malaria could share their stories, and CMCs could demonstrate their ability to conduct tests by carrying out screening events. Efforts such as these resulted in increased case detection by CMCs in the latter part of the year.

In 2019, 63% of confirmed cases reported spending time in the forest 14 days prior to seeking fever treatment, followed by 32% who reported spending time on a farm or plantation.

Case management quality continued to increase in 2019, with 74% of providers scoring over 80% on quality assessment scores, up from 57% in 2018. Case notification rates for reporting to the provincial level reached 100% in 2019. This high level of quality of care and data sharing is building the government’s trust in the private sector’s contribution to the national malaria elimination strategy. As PSI continues to pilot reporting through a Zalo messenger bot, reporting is expected to be simplified for providers.
Looking ahead, PSI/Vietnam is working with NIMPE to consolidate and simplify its network in order to transition to government oversight in the coming years and to ensure that the government maintains access to the surveillance data generated by private providers.
As a data-driven project, research during the final year of GEMS, in addition to routine data collection, provided additional information to support decision making by PSI and can be of value to other malaria partners. Outlet surveys and mystery client surveys were carried out in all four countries, and treatment seeking behavior studies were completed in forest-going communities in Cambodia and Vietnam. They revealed that private providers are capable of providing quality care and continue to form an integral contributor to the malaria market and meet a consumer need that complements public and community services.

OUTLET SURVEY
The definition of an "authorized" outlet is different in each country, which affects both targets and achievements. In Cambodia, private outlets are no longer authorized to provide malaria case management, and Mobile Malaria Workers serve as a proxy for appropriate case management. In Lao PDR, PSI supports a large proportion of all authorized private providers (80%), which are members of the PPM network. In geographic areas where PSI is present in Myanmar, 62.2% of providers stocked tests, ACTs, received training and supervision, and reported into national surveillance systems, as compared to 21.8% in non-PSI supported areas. In Vietnam, only clinics are allowed to provide full malaria case management, and PSI supports a relatively small number of these. 71% of clinics included in the outlet survey in Vietnam are participants in the GEMS program, and among the GEMS clinics, 52% participated in trainings, submitted reports, received supportive supervision during the last 12 months, and had either RDT or ACT in stock at the moment of visit.

MYSTERY CLIENT SURVEY
A mystery client survey conducted in late 2019 assessed provider adherence to national malaria testing and treatment guidelines. PSI researchers recruited and trained ‘mystery clients’ to visit an outlet and claim they are or have been experiencing a recurring “malaria-like” fever. Immediately after leaving the outlet, each mystery client filled out a survey detailing the provider’s actions. The survey was used to determine the proportion of clients receiving both prompted and unprompted testing for malaria in a GEMS supported area who were managed according to the government recommended treatment algorithms for fever cases.
The results found that volunteers are much more likely to provide a malaria test compared to private outlets. However, when considering the relatively lower number of unprompted tests in all four countries (76% Cambodia, 54% Lao PDR, 43% Myanmar, and 65% Vietnam), this is less than ideal in a context where all countries require all fever cases are tested. On a more positive note, with near 100% adherence to national treatment guidelines in all four countries, the mystery client survey results demonstrated that providers follow key RDT steps, are providing correct diagnosis, and are respecting national treatment guidelines.

TREATMENT-SEEKING BEHAVIOR SURVEY
Forest going is a major risk factor for malaria in Cambodia and Vietnam, however economic pressures compel people to undertake this activity. PSI conducted a population-based survey of forest goers in Cambodia and Vietnam using respondent-driven sampling (RDS) to measure malaria related behaviors. Forest-goers were defined as people who live within 15km of the forest and visit the forest at least 1 night a week or 4 nights a month, and all participants in Cambodia and 66% in Vietnam reported an episode of fever in the past 30 days. Results from the study found that that 75% of forest-goers in Cambodia and 63% in Vietnam seek fever care outside the home, though not very promptly. Driving factors for the forest-goers’ choice of treatment source included proximity, cost, perceived service availability, and trust in providers.

Results from all research activities can be made available upon request.
The GEMS program has now completed its initial four-year investment by the Bill & Melinda Gates Foundation. At its peak, PSI was supporting over 23,000 providers, and throughout the life of the project, GEMS conducted 3,531,837 RDTs and detected 96,216 malaria cases. The project has learned the importance of tailoring approaches across and within countries by being constantly responsive to data, and focusing on smart, rather than expanded coverage. The project has developed a model for private sector engagement that has resulted in high levels of verified quality of care, and timely contributions to national surveillance data. Progress has been made in ensuring that providers are able to report just as easily as NMPs can access private sector data.

Looking ahead, PSI and the Gates Foundation developed a new investment, GEMS+, that will transition oversight of the private sector network to the NMPs in each country. This will ensure that the government is able to manage its malaria elimination strategy in a way that integrates public, private and community providers, in order to focus efforts on where they will make the most impact. PSI will continue to reduce the scale of the private sector networks to focus on where they are most needed and will simplify the private sector engagement model to one that the government can integrate into its existing system and structures.

In 2020, PSI’s priorities under GEMS+ will therefore be to work with NMPs to:

1. Reduce the scale of the private sector networks
2. Simplify the private sector engagement model
3. Develop the necessary tools and systems to support the transition

In addition to all donors who support malaria elimination efforts in the GMS, 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 Cambodia, Lao PDR, Myanmar, and Vietnam, and the many committed malaria stakeholders in the region.

Please contact us for further information or cooperation via: www.psi.org/GEMS
The GEMS Program works with private sector providers to increase access to quality malaria testing, treatment, and surveillance reporting, in accordance with national policies in Cambodia, Lao PDR, Myanmar, and Vietnam. This report shares the data and insights from the program’s fourth and final year of operations and looks ahead to 2020 and the GEMS+ follow on investment.