



In Focus

Mobile malaria worker, Sal Svan, visiting mobile forest workers in Lom Thmey village

Trans-border malaria programme

Fine-scale mapping of high risk populations and targeting of hotspots with appropriate and novel intervention packages

In 2015, Malaria Consortium, Raks Thai Foundation and Population Services Khmer began collaboration on a programme that is strengthening early detection and treatment of malaria through surveillance activities in Thailand and Cambodia. With support from the Global Fund to Fight Aids, Tuberculosis and Malaria, UNOPS and national malaria programmes, we are targeting high-risk populations in the border areas of Cambodia with Laos and Vietnam, and of Thailand with Laos and Cambodia.

The programme brings together expertise in malaria surveillance and community engagement. It is designed to support Cambodia's malaria control and elimination goals through effective surveillance and data capture. It also contributes to the monitoring of anti-malarial drug resistance in the area.

The programme objectives are:

- to map hotspots of transmission through passive and active surveillance strategies and to identify people with the highest risk of infection
- to control malaria by targeting identified hotspots with early diagnosis and treatment
- to improve preventive behaviours among high risk populations through education and the use of behaviour change communication
- to improve cross-border data sharing and collaboration through regular communication and mutual learning with different communities, health officials and employers working in border regions.

Malaria in Cambodia

In Cambodia, malaria infection is highest in border areas and among mobile and migrant populations (MMPs) who often live in remote rural areas, work in forests or travel through endemic areas. The remoteness and mobility of these communities often means they have poor or infrequent access to health facilities which leads to malaria cases frequently going undetected and untreated. In other circumstances, people may seek treatment at unregistered private providers, leading to unreported malaria cases and unknown and possibly unsuitable case management practices.



The Sreynoeunn family and their village malaria worker, Thy Sambath, outside their forest home in Tun Village

Benefits of the project

Malaria Consortium's activities within the programme are designed to be responsive to the changes in the region which can drive migration. These changes include seasonal farming, new employment opportunities, new roads and access to international border crossing points, or the rainy season which can make some areas inaccessible. We ensure we reach mobile and migrant populations where and when they are most at risk by constantly adapting our activities and resources to these changes. The programme's flexibility increases its efficiency, effectiveness and value for money.

The programme was designed and launched in collaboration with the National Center for Parasitology, Entomology and Malaria Control and links with regional and district level health systems, as well as local health facilities.



Mobile malaria post at the Cambodia/Laos border in Srae Champa

Interventions

In collaboration with the National Center for Parasitology, Entomology and Malaria Control, Malaria Consortium has trained and hired 21 mobile malaria workers (MMWs) to detect hotspots of malaria transmission and to identify people who are at risk of malaria infection. MMWs target mobile and migrant populations and border communities by setting up mobile malaria posts in areas which these populations frequent, such as border points, strategic forest entry points and farming areas.

At mobile malaria posts, MMWs provide health education and free diagnostic testing to passers-by who have been in high-risk areas. They can also provide treatment if the test is positive.

Mobile malaria worker, Chhoceung Thy, providing malaria test to migrant worker at the Laos border in Srae Champa



Malaria Consortium also works with and supports village malaria workers (VMWs), who are volunteers trained to educate their communities about prevention, provide diagnostic testing and treat malaria cases. Malaria Consortium and health centre staff provide ongoing training to VMWs in diagnostic testing, treatment and data collection.

Pong Kriel village malaria worker, Noy Ra, picking up rapid malaria diagnostic tests



We hold regular meetings with district health centre staff to bring VMWs and MMWs together to share data, discuss challenges and to develop monthly work plans.

Malaria Consortium Field Implementation Manager, Van Kimyeth, developing a monthly plan with village malaria workers



At these meetings, data collected by MMWs and VMWs is reported to Malaria Consortium staff who, in collaboration with health facility and district malaria officers, analyse and use the data to map areas of malaria transmission and identify opportunities to detect other positive cases.

Malaria Consortium Field Assistant, Mean Sopheak, collects data at a monthly meeting with village malaria workers, mobile malaria workers and health centre staff at Taveng Health Centre



Case detection methods

Malaria Consortium field staff employ a range of case detection interventions. These fall under three categories: passive case detection, proactive case detection and reactive detection.

Passive case detection occurs when people seek healthcare and are diagnosed with malaria. Diagnoses can be provided by VMWs, MMWs, or via health centre facilities. Passive case detection generally happens after someone falls ill and seeks diagnosis and treatment. To strengthen this detection we:

- coordinate regular meetings involving VMWs, MMWs, district health centres and Malaria Consortium staff to resolve challenges, record data and provide ongoing training
- provide mentoring and support to VMWs through our field assistants

This increases the motivation of VMWs and their competence in diagnosing, treating and recording data, which strengthens the community confidence and acceptance of their interventions.



Malaria Consortium staff hands out signs that VMWs can place outside their homes to inform people that they offer free testing and treatment



“The meetings are very helpful. I learn new things and can resolve any problems that I am having. In the past I faced many problems. It was difficult to get enough tests and drugs but now that Malaria Consortium has come, it is much easier. I am learning new things and taking that back to my village”

Village malaria worker, Pheng Krong, travelling to Ta Ngach Village

Proactive case detection is when high risk individuals are actively sought out for diagnostic testing and used to map hotspots of infection. This is done by placing mobile malaria posts in areas of high transmission where high risk individuals frequently travel, such as border points.

This helps us to catch positive malaria cases between the place where the infection occurred and where infected people might be travelling and transmitting the disease. This method also allows us intercept and treat migrant workers who test positive for malaria and this reduces the likelihood of malaria being carried between neighbouring countries.



Malaria Consortium Field Implementation Manager, Van Kimyeth, talks to forest workers about malaria at the Laos border in Srae Champa

Reactive case detection methods involve investigating positive cases to identify other potential at risk locations and people. This includes:

- all positive malaria cases detected by VMWs and MMWs being reported to Malaria Consortium's field assistants, who conduct case investigations to identify potential sources of transmission and other untested individuals, such as co-workers or co-travellers, who might have been exposed to the disease
- Malaria Consortium and health centre staff travelling to identified high risk locations to conduct confined screenings in villages, small plantations or farming areas close to the forest and to provide education on malaria prevention

To increase efficiency and cost effectiveness, a risk assessment is done in all proactive and reactive case detections. The assessment considers individuals for malaria symptoms and previously identified risk behaviours, such as working in or travelling to high burden areas. Only those who meet the risk criteria are tested, which provides us

with highly targeted data about high risk populations and locations. This strategy also allows us to catch positive malaria cases in individuals who do not show symptoms, while maintaining a narrow scope of screening.



Health centre staff member, Tha Sen, Malaria Consortium Field Assistant Team Leader, Chin Chea, and village malaria worker, Chres Saroeung, at a malaria screening in Teak Team Village

Behaviour change communication

Whenever we identify a community as being high risk, we conduct village meetings led by VMWs, health centre staff, village chiefs and Malaria Consortium staff.

Village meetings are a valuable opportunity to work with community members and map where infection has been transmitted. During the meetings, communities provide information about local travel patterns and places where malaria infection may have likely occurred. Field staff use this information to identify the main behavioural risks for the village and select which case detection methods will be most effective.

As well as sharing information and mapping high risk areas, these meetings provide a valuable platform to educate the community about preventive practices, such as sleeping under a mosquito net and wearing long clothing in the evening in high risk areas. Participants are also educated about the symptoms of malaria, why early diagnosis is important and where they can access free diagnostic testing.



Van Kimyeth educates villagers about malaria prevention, diagnosis and treatment at a sensitisation meeting in Pong Kriel

What is the level of acceptability?

In-depth interviews have shown an increase of knowledge and improved attitudes towards malaria prevention since the programme began. Community members are increasingly aware of the risks associated with travelling to or working in forest areas and know to seek malaria testing if they become ill.



"Malaria Consortium has raised awareness and increased knowledge of malaria in our village. The education they have provided, together with the mosquito nets given to us by the health centre, have reduced the number of cases in our village. I am very pleased with the work they have done and would like to see them continue to support our village malaria worker."

Pong Kriel Village Chief, Chan Pov



Malaria Consortium Field Assistant Team Leader, Chin Chea, at a village sensitisation meeting in Pong Kriel

Results and recommendations

Since the start of activities, Malaria Consortium has scaled up from three to eight mobile malaria posts. We have increased points of care by training and supporting 73 VMWs and 21 MMWs in 88 villages and surrounding areas. Most significantly, over 10,000 high risk individuals have been tested through our targeted case detection strategies.

More than half of the diagnosed cases were Plasmodium falciparum infections, a strain of malaria that is developing resistance to malaria treatments.

Analyses of case detection methods reveal that passive and reactive case detection methods have discovered the highest ratio of positive malaria cases, with positive cases being found in around five percent of those tested. The programme has also shown that data collected through mobile malaria posts, health centres and VMWs has improved our ability to identify high risk people and locations.

To reduce malaria in high risk and remote areas, Malaria Consortium recommends the following:

- Continued investment in early detection and treatment services, including:
 - expanding the areas covered by MMWs to reach more mobile and migrant populations and border communities
 - providing ongoing support and mentoring to VMWs
- Continued consultation with health providers, community members, employers and technical experts to identify appropriate malaria interventions.
- Field-based malaria surveillance should be informed by data collection from all levels of healthcare (community, health facility and district levels), in areas of high malaria transmission.
- Continued collaboration with all levels of Cambodia's health service, including community volunteers, district health centre staff and the provincial health directorate, to share data and map high burden areas for malaria.

This project is being implemented in Cambodia and Thailand from November 2015 to June 2017 with the Raks Thai Foundation and Bureau of Vector Borne Diseases (in Thailand) and Population Services Khmer and National Center for Parasitology, Entomology and Malaria Control (in Cambodia).

Population Services Khmer (PSK) www.psk.org.kh/

PSK is working with private providers and plantation malaria workers in Cambodia in the border regions of Stung Treng and Ratanakiri to pilot a mobile phone application that will dramatically improve reporting times from these service providers.

Raks Thai Foundation www.raksthai.org/

In 2016, the Raks Thai Foundation began active surveillance and mapping activities along the Thailand borders with Laos and Cambodia in Ubon Ratchathani Province. Following identification of high risk villages and people, Raks Thai Foundation is working with

community volunteers to provide additional testing and treatment opportunities, hammock nets, case follow up support and accurate information on how to prevent and treat malaria.

For more information about the programme:

www.malariaconsortium.org/resources/

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