CONTAINMENT
of drug-resistant malaria on the Thai-Cambodian border

Quarterly Newsletter of the Strategy for the Containment of Artemisinin-Tolerant Malaria Parasites in South-East Asia Project
October-December 2010

WHO Implements Ambitious Project to Fight Malaria

Working closely with the governments of Cambodia and Thailand, the World Health Organization has developed an ambitious cross-border malaria containment project in a bid to eliminate malaria resistant parasites and wipe out the mosquito-borne disease along the border areas of two countries.

This $22.5-million project, funded by the Bill & Melinda Gates Foundation, uses a combination of prevention and treatment methods that have proven to be effective against malaria. The project strategy includes large-scale distribution of long-lasting insecticide-treated mosquito nets, free early diagnosis and treatment of malaria at the village level, 24-hour health facilities to diagnose and treat malaria and intensive surveillance of positive cases as well as other education programmes and innovative means to reach the mobile migrants.

Early last year, WHO warned that parasites resistant to artemisinin had emerged along the Thai-Cambodian border, posing a serious threat to global efforts to control malaria. Artemisinin-based drugs are the most effective treatment against malaria and have made huge strides over the past decade in controlling the disease. WHO has been working closely with the health ministries of Cambodia and Thailand, and other partners, to contain the resistant parasites, with the ultimate aim of eliminating them from the target zone.

Drugs based on artemisinin alone, rather than combined with other drugs, have been blamed for contributing to resistance.

Because of this, the Cambodian Government has now banned the use of single-drug treatments for malaria. The project has also made concerted efforts to stop the sale of fake and substandard drugs, which are believed to be a major contributing factor to the development of resistance. Through the project, drug inspectors have been trained, and now regularly conduct inspections aimed at uncovering outlets selling these drugs. The Ministry of Health in Cambodia has trained 250 “justice police” who regularly check pharmacies, shops and markets to try to ensure that only recommended malaria drugs are sold.

Activities are being implemented in the target zone, known as zone 1 that covers areas where artemisinin tolerance has already been detected, and in a much larger buffer zone, known as zone 2 where there is no evidence of tolerance yet, but the risk is also high. In Cambodia, zone 1 covers about 270,000 people in four provinces - all of Pailin and parts of Battambang, Pursat and Kampot. In Thailand, about 110,000 people live in zone 1 - in the border areas of Trat and Chanthaburi provinces.

Zone 2 in Cambodia covers nine provinces with a total population of more than four million, while in Thailand zone 2 comprises seven provinces with a population of nearly seven million, about 150,000 of whom are living in malaria risk areas.

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Fighting Counterfeit Anti-Malarials

An interview with Dr. Doung Socheat, Director National Center for Parasitology, Entomology and Malaria Control.

Dr. Doung Socheat, in a quest to eliminate falciparum malaria in Cambodia. Pix by WHO/Sonny Krishnan

There is evidence of artemisinin-resistant malaria in Western Cambodia, particularly along the Cambodian-Thai border. What efforts are being made to reduce the morbidity and mortality rates there?

We have been working with different partners, especially with WHO, with funding from the Global Fund. We have deployed our people along the Cambodian-Thai border. We have also made big efforts to distribute long-lasting insecticide-treated nets (LLINs) to people in the area. We are also making concerted efforts to control the sale, by retail outlets and in the markets, of counterfeit and substandard anti-malarials in the targeted area that we call Zone 1. Besides that we are also doing mass screening of children, women and men in Zone 1 to diagnose and treat malaria. Our aim is to contain and eliminate artemisinin-resistant falciparum malaria in Zone 1.

The results have been very encouraging. It is an indication that our containment strategy is working in the high transmission areas. Let me give you an example. Previously when we first started mass screening of about 3,000 people we found over 100 positive falciparum malaria cases. Recently we did screening of the same size of people and only found eight positive cases. This drop in the number of positive cases is very significant. In 2009, we had no deaths due to falciparum malaria in the area, especially in Pailin.

Counterfeit and substandard anti-malarials are one of the causes for the emergence of MDR-falciparum malaria.

What are the efforts to eliminate these counterfeit and substandard drugs sold by the private sector and also enforce the ban on oral artemisinin monotherapy?

We provide regular monthly trainings to all companies involved in the import and export of pharmaceutical products. We have also communicated to all pharmacies and drug-sellers of the Ministry of Health’s ban on monotherapies. It is important to inform the drug-sellers first, before we do law enforcement with the Justice Police who go around inspecting pharmacies and other drug retail outlets. The drug-sellers have to be made aware of the dangers and the harm they could cause with the sale of fake anti-malarials and monotherapies.

We raise this awareness by constantly putting out Information, Education and Communication (IEC) materials, which are distributed to communities, warning of the dangers of monotherapies and the dangers of buying fake drugs. These IECs also inform the public that the government has banned the marketing and sale of “single-drug” artemisinin malaria medicines, in order to prevent malaria parasites from developing resistance to this drug.

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Cambodia is making dramatic progress. As of 14 September 2010, there were only two cases of falciparum malaria from 5,686 people screened in 16 villages in Pailin, which previously were the most affected in the border area. In the adjacent area in Thailand -- Soi Dao and Pong Nam Ron districts of Chantaburi province -- there was a similar trend, with incidence of falciparum malaria dropping from sixteen (16) to seven (7) from 2008 to 2009, the year before the cross-border project kicked in and the year after.

So far, more than half a million bed-nets have been distributed, including more than 260,000 in zone 1. A further 200,000 existing mosquito nets have been treated with insecticide. This distribution means that all villagers in zone 1 and all people in the high-risk villages in zone 2 are able to sleep under a mosquito net each night.

Meanwhile, the project has trained about 2,900 volunteer village malaria workers, or VMWs, in Cambodia and 326 in Thailand. These VMWs are fully trained and equipped to diagnose malaria in the village using a rapid diagnostic test and to provide the patients with the appropriate drugs for free. This strategy – providing free anti-malarial drugs in the village – also works to undermine the sale of fake and sub-standard anti-malarial drugs from the private sector where Cambodians have usually sought treatment. In both Cambodia and Thailand, treatment for malaria is now available 24-hours a day through public health centres and VMWs.

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Difficulties in Cambodia, especially in the east, became more acute from 2008 onwards. The situation was exacerbated by the late arrival and poor completion of the long-lasting insecticide-treated nets (LLINs) project which was also funded by the Global Fund. 2008 was the year the country lost an estimated 34% of its LLINs due to the prevalence of mosquitos resistant to DDT. It was also the year of the global financial crisis which affected funding from the Global Fund. We

The problem was compounded when the number of volunteer village malaria workers (VMWs) who had been fully trained and deployed in the field in 2008 and 2009 could not be sustained because of the lack of funding from the Global Fund. The number of VMWs consequently dropped from 3,210 in 2008 to about 1,300 in 2010, because those who were trained in 2007 and 2008 were not being replaced.

The result was that we had to proceed with mass screening with less support from the VMWs, which explains why we had to focus on mass screening in Zone 1. In the border area we have about 460 volunteer village malaria workers. They are grouped in teams of 20, making it easier to mobilize them for mass screening.

In this area, the VMWs have usually been living in villages adjacent to the border and have been the first to detect clinical malaria cases. The data we collected from the VMWs showed that there was a trend of reduction in malaria cases from 2008 to 2010, but the data were not adequate for the national statistics.

The Ministry of Health would like to increase the number of VMWs to around 5,000, and the number of villages to 250, so that we can fully contain artemisinin-resistant falciparum malaria in the whole border area.

The Ministry of Health is also planning to train 100 volunteer village malaria workers in each of the provinces adjacent to Cambodia, in order to combat malaria there. It is expected that these VMWs will be able to contain and eliminate artemisinin-resistant falciparum malaria in Cambodia by 2015.
‘We Want to Work Closely with the Cambodians’

Interview with Dr Wichai Satimai, Director, Bureau of Vector-Borne Diseases, Thailand.

Please identify one benefit Thailand has enjoyed from the project, mainly supported by the Bill & Melinda Gates Foundation, to contain and eliminate malaria parasites tolerant to artemisinin in Southeast Asia.

The support Thailand has received in particular from the Bill & Melinda Gates Foundation has helped boost human resources and equipment. With more full time and part-time staff here at the Bureau of Vector Borne Diseases, and in the border areas, including translators at malaria clinics and IT people, and the equipment we need for containment activities – such as motorcycles (42), good microscopes (40), and pickup trucks (seven which replaced 20-year-old ones) – we have made much progress.

Since malaria control remains on Thailand’s national agenda, which is evident in the Bureau of Vector-Borne Disease’s partnership in the project, how do you think the question of malaria control should be raised?

The malaria situation in Thailand is better than before with incidence down from about 100,000 say ten years ago to about 25,000 now, among Thais and non-Thais. However, with the emergence of new epidemics such as SARS, or H1N1, non-communicable diseases and illnesses deriving from environmental and chemical causes, the human resources and budget have to be shared.

With regard to containment of artemisinin-resistance, we would like people in Thailand and other countries around the world to know that this is similar to resistance to Fansidar (sulfadoxine-pyrimethamine), which also spread. It means we have to ask specialists from international organizations to help us. Hence we have to co-operate with the World Health Organization, the Bill & Melinda Gates Foundation, the Global Fund. At the Global Fund’s Round 7, two research groups participated. We are asking Global Fund Round 10 to include 12 non-governmental organisations that work with us as recipients. We need their experience in working with migrants. We realise that patients, nearly half of them migrants moving from nearby countries, are undocumented and may be afraid of the government.

The secretary-general of the World Health Organization has made clear that health issues transcend all borders. Please reflect on how this applies to Thailand’s co-operation with Cambodia and other neighbours.

The principle is we would like to work closely with Cambodia. Unfortunately, there is a language problem between Thais and Cambodians that needs to be improved. This affects containment, because we cannot do follow-up work on people who cross the border after 28 days.

With other countries who share borders with Thailand, for example with Malaysia, and Laos, we do not have as much of a language problem. With Myanmar, many of their nationals cross the border because they accept and know our facilities, and appreciate that these are free of charge, including long-lasting insecticide-treated nets. It’s a push and pull situation.

I agree totally with the WHO secretary general. We cannot stand alone. Thailand has to work with nearby countries.

Today (Sept 1), the Department of Disease Control is meeting with Myanmar, whose officers have come to discuss co-operation in tuberculosis and malaria. For nearly nine years, we have shared our experiences. We have other channels to work together with neighbours. This includes the capacity-building programme for the Mekong Region countries supported by the USAID and the ADMECs (Ayewaddy-Chaophraya-Mekong Economic Co-operation Strategy), whose health officers met in Thailand Aug 26-27 to fine-tune activities. All of these come to the same direction: to reduce our burden of diseases.

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The previously high use of artemisinin in Cambodia consisted of monotherapies provided through the private sector. In 2008 the government banned monotherapies with the Justice Police, as you said earlier, enforcing the ban. The 2009 ACT Watch Outlet Survey Report for Cambodia found that only 8 percent of malaria treatments from the private sector were artemisinin monotherapies. Unlike previous years, this is a great reduction. Can you comment on this positive development?

This is a key issue in our containment programme with WHO. Ten years ago our health structures were still weak because we lacked human resources at the grassroots level. Even our in-country health infrastructure was not strong enough. We did not have proper roads; we did not have health facilities in the remote areas. So we cannot blame people, at that time, for going to the private sector because the public sector did not have enough capacity. Also during that time people in the public sector were very poorly paid, and so there was not much commitment to provide services. So sick people just flocked to the private sector. Even if you went to the villages, the smallest drug retailer was able to provide some form of health service. But now things have changed. The government has committed more funds for health infrastructure. Health facilities have improved and there are more incentives now for public health workers. International donors have supported us in improving our health infrastructure.

We have created more access to the health facilities, now, for the people. And there is a concerted effort to encourage them to use government facilities, rather than to go to the private sector. We are also engaging the private sector to refer malaria cases to the government health centers.
A village malaria worker in Pailin province takes a blood sample from two young men to test for malaria. Pix by WHO/Harri Anenden

The diagnosis begins: “What’s your name?”
“Yeath Mab.”
“How long have you been sick?”
“Three days.”
“Did you ever have malaria before?”
“Yes, five years ago.”
“How do you feel now?”
“I have a fever and I feel a shiver in my body.”

The blood test begins.
“Wait 15 minutes!”
One, two, three, four, five... 15 minutes have passed.
“You have no malaria.”

To a stranger, Rin Tith, a 30-year-old father from Angdong Phi village in Cambodia’s Pailin province, looks like a professional physician the way he does the diagnosis, the test and treatment. But he is no medical doctor.

He is just a Malaria Education Village Volunteer, better known as Village Malaria Worker or VMW, who has been trained to do the diagnosis, the test and treatment for malaria at the village level. This project is part of Cambodia’s malaria containment efforts spearheaded by the World Health Organization and implemented by the Cambodian National Malaria Centre.

Rin Tith continues. He tells the sick migrant worker that his illness is just a normal fever. Then, he gives him a few fever pills and reminds him to sleep in a mosquito net to avoid getting malaria.

The patient returns home.

Under its ambitious containment strategy, the Cambodian National Malaria Center (CNM) has trained almost 3,000 VMW’s nationwide, including 86 villagers in Pailin.

These “foot soldiers,” as an expert puts it, received a three-day training to do the diagnosis, the test and the treatment in their villages for farmers and other people.

To target the mobile workers, CNM has trained more than a hundred Migrant Malaria Workers, or MMW’s, who were chosen among the migrant workers themselves.

Upon completion of the training, each VMW was provided with a bicycle, a pair of boots, a bag, a flashlight, a raincoat and a cooler box to keep medicines plus a monthly transport allowance.

But, it’s usually personal stories and experience that motivate villagers to become voluntary VMWs.

Rin Tith says that he himself has been sick with malaria 20 times since he moved to Pailin nine years ago. So, he says he immediately took the offer when he was asked to be a VMW a few years ago. His main purpose is to help fight malaria.

Top Malay, a 22-year-old farm owner in Pailin’s Suon Ampov Keut village, says she decided to become a VMW because she wanted to learn the skills and to help people avoid getting sick, particularly the migrant laborers she hired to work on her farm.

“We gave them mosquito nets and educated them about malaria,” she says when the laborers return to Pailin during the corn harvest twice a year.

Like Rin Tith and Top Malay, 39-year-old Long Vuthy from Pailin’s Phnom Dambang village, says he decided to be a VMW to help reduce malaria deaths and illness.

“I think this village is far from the Health Center and the hospital [so it needs a VMW],” he says, pointing his finger into the distance.

Many villagers say they welcome the idea of having VMWs to treat malaria.

“It’s good that we have VMWs nearby in case we are sick at night,” explains Kim Sary, a 53-year-old farmer in Andong Phi village. “Their drugs are very effective if you take them properly.”

Korn Huoth, a 32-year-old farmer in Phnom Dambang village, agrees.

“VMWs have done a good job [and] are friendly with the villagers,” he says.

The strategy of deploying VMWs in malaria infested areas has proven to be a success in combating malaria, says Dr. Po Ly, Cambodian National Malaria Centre’s VMWs Project Team Leader.

“We’ve seen good results that there’ve been less malaria cases now,” he says. “It’s a good strategy to reduce malaria deaths and malaria resistant [parasites].”

However, Dr. Po Ly says the success should also be attributed to the cooperation from the Ministry of Health and local authorities.

Dr. Po Ly says he is pleased that the villagers trust VMWs despite their reluctance at the start of the project.

“At the beginning, people didn’t believe them as they had been trained only a few days,” he says. “Now, people believe them after they had effectively treated [many] patients.”

Dr. Po Ly says the villagers have many other advantages of having VMWs.

“It helps reduce poverty when they don’t have to pay for their treatment which is free of charge,” he explains.

He adds that the villagers can do more work and make more money when they are not sick.
A village malaria worker in Pailin province takes a blood sample from two young men to test for malaria. The patient returns home. Rin Tith continues. He tells the sick man, "You have no malaria." Then, he gives him a few medicines plus a monthly transport grant. Upon completion of the training, each VMW was provided with a bicycle, and experience that motivate villagers properly. It's good that we have VMWs, people of the village, agrees. "I think this village is far from the hospital, but the VMWs makes a difference. They able to help people."

The disease and treatment monitoring of Malaria (DTMM) module, a part of the Better Border Healthcare Program created by the Centre of Excellence for Biomedical and Public Health Informatics at Mahidol University or Biophics, uses mobile and web-based technology to alter treatment-seeking behaviours and facilitate better treatment and care for malaria patients in low-resource settings. It has speeded up detection at the point-of-care, made reporting to decision-makers close to real time, and improved the accuracy of mapping malaria risk locations.

"We can use IT [Information Technology] to help us fill in data in real time and send it to Biophics," said Dr Wichai Satimal, director of the Bureau of Vector-Borne Diseases, of the usefulness of the system. "Then using the Biophics-designed DTMM module we will know the name of the patient, the kind of malaria and the follow-up that needs to be done at every level – from the district to the provincial and central levels...

The DTMM module enables remote data transfer in both textual and geographic format allowing details of registered patients, who visit the malaria clinic, and their treatment history to be examined. Responsible malaria staff at the local treatment sites are provided with mobile phones loaded with the follow-up application; they use the case-follow-up function of the DTMM to update the follow-up status on the schedule date, and capture the locations (GPS coordinates) each time local malaria staff perform routine home visits.

This replaces paper-based case-tracking in the villages, and supersedes routine map-drawing for case locations. The DTMM also sends home-visit-schedule reminder messages directly to responsible local staff.

Dr Wichai said officials down the line had been "happy" with the paper system of registry and follow-up still existing in low-risk areas.

But after recognising the "long term value" for surveillance and reporting in the DTMM module that the Bill & Melinda Gates Foundation fully supported in two high-risk districts -- Pong Nam Ron and Borai, respectively located in the provinces of Chantaburi and Trat -- the bureau decided to finance expansion of it to other vulnerable pockets along the eastern border out of its own budget. It was, in Dr Wichai's words, "an opportunity to strengthen our surveillance system and reporting as well."

A major problem in the bureau's vertical control programme is that it may not be accessible to people living in remote communities, and to people-on-the-move who are undocumented migrants from neighbouring countries and hence afraid of authorities. Dr Wichai said he had asked the Global Fund Against Aids, Tuberculosis and Malaria, Round 10, for 12 non-governmental organisations to become grant recipients because they had experience working with migrants.

Asked about challenges in introducing the DTMM module along the Thai-Cambodian border, Amnat Khamsiriwatchara, deputy director of Biophics, said infrastructure and computer facilities to connect with the system were "not a big problem". He pointed out that network coverage continued on page 6

Besides supporting mobile phone technology, the DTMM module also allows web-based tracking of malaria patients. Pix by Google Earth

The explosive spread of mobile phone networks across the developing world has created a unique opportunity to significantly transform how countries can tackle global health challenges, including the containment of drug-resistant malaria along the Thai-Cambodian border.

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Malaria Champion: Yeang Chheang
A Life Dedicated to Fighting Malaria

It was 1962 when Mr. Yeang Chheang, then a 24-year-old malaria specialist, was on a mission to Cambodia’s southwest coastal town of Sihanoukville, when he was called back to the capital.

He was re-assigned to carry out yet another greater mission to the northwestern tip of the country on the border with Thailand. He was sent to Pailin, where a malaria outbreak was devastating the lives of hundreds of people from all walks of life.

Mr. Chheang was tasked to contain this outbreak. So, without delay, he set off to Pailin.

He recalled that during this outbreak, between 20 and 30 Pailin residents died from malaria everyday.

“So many people were dying that the crematorium overflowed [as it exceeded its capacity to cremate too many bodies],” he remembered.

Under this mission, he said the Malaria Eradication Department of Cambodia’s Ministry of Health had mobilized a 20-member-strong team that included four village malaria workers, or VMWs.

Mr. Chheang remembered that an Italian doctor named L. Cervone from the World Health Organization’s Malaria Control Project, which was established in Cambodia in 1955, led the team.

With the intensive work, he reckoned that it took the team seven months before they could contain the outbreak despite meager resources and few local experts.

Working as an entomologist technician at the Ministry of Health’s Malaria Eradication Department, Mr. Chheang said he was sent to Manila to study about malaria in 1960 when he was 23 years old.

During his mission to contain malaria outbreak in Pailin almost fifty years ago, Mr. Chheang said his biggest challenge was to communicate with WHO’s Italian team leader who preferred to speak English instead of French – the foreign language spoken by Khmer intellectuals.

Unlike most medical practitioners and other intellectuals who were targeted and killed by the Khmer Rouge, Mr. Chheang’s life was spared with a stroke of luck. The Khmer Rouge also needed him to fight malaria.

The success of the DTMM module in Thailand’s Saiyok District of Kanchanaburi was “a big chance to prove that informatics (using mobile technology) could be an effective management tool to eliminate drug-resistant malaria,” he said. Features awaiting development and incorporation into this system include: real-time monitoring and reporting of infected cases, microscopic digitizing imaging, the capturing of follow-up locations with infections by using a mobile phone panel, and disease mapping with a geographical information system or GIS.

Anuraj Manibhandu

Yeang Chheang - answered the call to save lives. Pix by WHO/Chhean Nariddh Moeun

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and technical support could reach all the data entry sites.

“Most of the challenges we face now are human resources and co-ordination across different levels,” he noted.

In the DTMM module, information can be captured on the phone in areas without a telephone signal, and malaria-control staff can later synchronize information onto a malaria clinic or wherever a signal is available.

If the DTMM module was to be used for cross-border surveillance of malaria cases, there should be a mechanism for sharing information first and foremost. Moreover, the mechanism should clearly define the roles of each country representative acting as the focal point, Mr Amnat said. It must be clear who will be doing what, when, where, and why with the information that is generated.

Collaboration on case investigations will be possible after messages or reports are received. Then the health information system of both countries can be used to support any activities created from this co-operation. Collaboration in information “and action” were vital for driving this cross-border mechanism successfully, he stressed.

Like many health workers, Mr. Chheang said he saw his work changing completely – from fighting malaria to fighting the Khmer Rouge rebels. Mr. Chheang was promoted to the rank of a military commander in Siem Reap.

“I was carrying guns instead of syringes,” he said, raising his hands in a shooting gesture. He added: “I always slept in the trench, [while] we were on guard to prevent the Khmer Rouge.”

However, Mr. Chheang said he was taken back to work on another malaria prevention program in Siem Reap province after about a year in the army till the Khmer Rouge came to power in 1975. Unlike most medical practitioners and other intellectuals who were targeted and killed by the Khmer Rouge, Mr. Chheang’s life was spared with a stroke of luck.

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A Force of Dedication in the Field

Sa Kao, Eastern Thailand -- This lady responsible for the province’s malaria control activities shows dedication and know-how, going out into the sun to check out a mobile clinic, and presenting power points to a room full of experts pressing her to say more.

When Uraiwan Tattong speaks, you have to listen, not only because of what she has to say, but because her voice has a warmth of tone and quality of texture that would make her a contralto if she were to take up singing.

She affirms that the project to contain killer malaria parasites tolerant to artemisinin has had a positive impact here. “It has helped reduce the incidence of malaria by about 50 per cent, I would say… through all activities.”

The Fixed Schedule Malaria Clinics, which are placed right on the border with Cambodia, “enables us to draw blood samples and verify quickly through microscopy if they are positively carrying malaria parasites”. By quickly, she means 20 minutes.

In this province, these clinics happen twice a week at three points on the border and began operating since March 2009.

At 54, Ms. Uraiwan has played a responsible role in curbing vector-borne diseases in this part of eastern Thailand for some years. She became head of the centre that deals malaria and other diseases carried by mosquitoes here in Sa Kao in October 2009, after serving in the same position in Si Racha, further southwest, for two years.

She hesitated to admit that coming here was something of a promotion, but she did say that the seaside town of Si Racha, on the Gulf of Thailand, “is smaller than Sa Kao.” Asked what her sights were in the six years she has left before the mandatory retirement age of 60, she replied “that’s up to my higher-ups.”

Both Sa Kao and Si Racha come under the same regional office based in Chon Buri, where Ms. Uraiwan graduated from Burapha University in public health.

Difficulties in Cambodia, especially along the border with Thailand compromised Cambodia’s malaria control efforts for many years.

However, having been trained in public health, Ms. Uraiwan knows that issues verging on life and death transcend all others, and, through her work, has tried hard to build trust among nationals of both countries, no matter what is happening on other fronts.

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Back then, it was all forests and we couldn’t see the mountains. Wild animals were everywhere,” Mr. Chheang said, pointing at deforested mountains in the distance.

But, it was not only the landscape that was different. Mr. Chheang said they also had far less advanced facilities to do the work.

He said that there was no telephone in the district and that people had to go to the post office to send mails via telegraphs.

“Now, people are much more sophisticated; they have computers; they use emails,” he said, adding: “Now, we have a large team that can cover all high-risk areas.”

After he retired from the government’s Malaria Control Centre 15 years ago, Mr. Chheang was hired by WHO to help with malaria containment work in the fields.

With almost continuous work to fight malaria for more than half a century, Mr. Chheang said he still enjoys doing his job.

“I am happy with the work; I am happy in the village,” he said recently, with a smile before gesturing at a mother and daughter to go for blood screening for malaria in Pailin’s O Ro’El village.

Chhean Nariddh Moeun
Malaria Myths Are Becoming a Thing of the Past

“YOU are drinking again, darling!” exclaims a Pailin villager to her husband. “Aren’t you afraid of having a stomach ache?”

“No, my dear, I feel a shiver in my backbone,” replies the man to his missus. “I am just drinking once in a while lest I get malaria.”

This song lyric from the 1970s is just one of the many myths some Cambodians have of malaria and how they can protect themselves. However, many people across the country have other more common myths and superstitions about malaria.

For many Cambodians on the move, going into a new cleared area in the forest could mean sickness – not because of malaria, but due to the belief that they have not adapted to the new land and climate. Others believe that drinking water from the stream that flows in a ‘new land’ will also make them ill. Cambodians would call this illness “Chanh Teuk, Chanh Dei” in Khmer instead of “Krun Chanh” or malaria.

Forays into the forest also have their fair share of superstitions. For instance if Cambodians have fever after a stint in the jungle, they would blame it on a spell or curse cast by the forest spirits. They would call this sickness “Chanh Neakta.”

All these beliefs make the conditions of the illness worse. Instead of trying to get treated with modern medicines, people give offerings and pray to the land and forest spirits so that they are released from a spell or curse.

Some people may go to a kru Khmer, or traditional healer, who claims to have psychic and spiritual power that enables him to communicate with ghosts or the spirits.

Yeang Chheang, a 72-year-old veteran malaria worker in Pailin, explains.

“The kru Khmer would warn his clients that they could have said something wrong and made the forest spirits unhappy. And that was the reason for their fever.”

When Cambodians talk about malaria, Pailin would be on top of their conversation for being a place where people could either become rich after finding gems or die of the mosquito-borne disease.

Therefore in the early days, many Cambodians were fearful of traveling to the area in the west of the country.

Between the 1960s and 1970s, around 15,000 mostly Kolar ethnic minority people from Burma had settled in Pailin, according to Mr. Chheang, who has been a health worker fighting malaria for more than half a century. He said the Kolars had moved to Cambodia to look for gemstones that were abundant in Pailin during those years.

Whether or not the Kolars knew anything about malaria, Mr. Chheang says, they had a set of “do” and “don’t” rules to follow to avoid getting sick.

Rule No 1: Don’t take a bath at night; Rule No 2: Wear your hat when going out at night; Rule No 3: Don’t pluck and eat ripe bananas, papayas or oranges from trees. (You should eat only the ripened fruits).

“When the Khmer newcomers got sick with fever, their eating habits were blamed for their illness,” adds Mr. Chheang.

Another prevalent myth in Pailin involved young people. “They were told by the old people to look up into the sky when it rained, otherwise they would get malaria fever,” a malaria expert in Pailin says, laughing.

But now, myths and superstitions about malaria are a thing of the past.

“Myths and superstitions about malaria have almost disappeared,” says Dr. Boukheng Thavrin, Chief of Cambodia’s National Malaria Centre’s Health Education Unit.

Though some people still believe that they could get sick when they go to new land clearings or into the forest, she says they still sought treatment from medical doctors.

“They no longer pray [to spirits] when they are sick,” she adds.

Dr. Thavrin believes that the education campaign launched by the National Malaria Control Centre had contributed to people’s knowledge and awareness about malaria.

“Now they know how malaria [parasites] are transmitted,” she explains. “What we are proud of is the fact that people who had never used mosquito nets are now using them.”

Chhean Nariddh Moeun

A woman farmer in Pailin appeasing the land spirits. Pix by WHO/Chhean Nariddh Moeun