Malaria clinics in Thailand

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Maesot District lies along the Moei River between Thailand and Myanmar. A lush and lovely countryside of forested, mist-shrouded hills, it is home to a variety of communities, including Thais and Karens who farm rice in terraced fields or engage in business centered in the district capital - a focus of trade in gems and other goods crossing the nearby border.

Unfortunately, Maesot is also the home to a life-threatening form of the malaria parasite which is resistant to many of the available anti-malarial drugs; and a breeding place of mosquito vectors which transmit the parasite from one individual to another. These conditions have been further complicated in recent years by continuing warfare along the nearby border between the government troops of Myanmar and Karen separatists.

Because of the potential severity of malaria in Maesot and the desirability of prompt, effective treatment of resistant infections, the Thai government's Anti-Malaria Programme has emphasized the role of malaria clinics in the district. Open five days a week in several of the large markets of crossroads towns, these clinics offer immediate microscopic diagnosis and effective radical treatment free of charge to any patient able to attend. This form of rapid diagnosis and treatment, in facilities staffed by trained microscopists, has done more to reduce malaria morbidity and mortality in Thailand over the last ten years than perhaps any other measure taken by the Programme.

Yet even with this excellent system of malaria clinics, there remained communities which appeared still to depend on other, less effective sources of treatment. In 1984, I set out with a colleague - Dr Krongthong Thimasarn, head of the Epidemiology Branch of the Anti-Malaria Programme - to implement and evaluate new forms of clinic outreach which would, we hope, make clinic treatment more accessible to all individuals ill from malaria.

At that time we recognized several of the barriers to access which prevented people attending the malaria clinics. Foremost among these were distance and the cost of travel. Many villages in Maesot District are a long walk from the nearest clinic, and even those villages served by road transport may find themselves cut off when the rainy season transforms a thirty-minute truck ride into a three-hour hike through mud or swollen rivers.

Cultural barriers also exist. While

A Karen girl acts as interpreter for the staff of the "mobile malaria clinic" - on this occasion held in an empty house.
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Many ethnic Karens speak Thai and are familiar with Thai social customs and culture, many non-Thai-speaking Karens live in villages with little interaction with Thai culture. For these villagers, a visit to a malaria clinic located in a large Thai town, staffed by a microscopist who speaks no Karen and uses “Western” methods of diagnosis and treatment, may present insurmountable problems.

So Dr Krongthong and I developed a mobile clinic, which would offer its services in the village itself; there would be no problems of lengthy travel, cash outlay or cultural barriers. The clinic staff comprised a microscopist and an assistant who travelled by motorcycle or on foot with a portable microscope. Some supplies remained in the village, usually in an empty house or in the pavilion of a temple or a school room. Five villages were served on a regular weekly rotation so that villagers could come to rely on the clinic and plan ahead to attend. Indeed, the clinic became a well-established part of village life. Over a two-year period, whether in the rainy season or the dry, not one scheduled clinic day was missed!

But we were surprised to find that attendance by women and children was noticeably less than that by men, even at the very accessible mobile clinic. We surveyed a random selection of households throughout Maesot District in each of three consecutive years. We asked about their experience of malaria illness in the previous year, made slides of their blood to determine the presence of malaria parasites, as evidence of current infection, and we carried small samples of blood back to the central laboratory in Bangkok for further testing. We analysed all these survey data by age and by gender.

**Identical rates**

We expected to find differences between the rates of malaria between children and adults and between men and women. Our long experience in malaria clinics had led us to assume that men had a greater exposure to malaria than other segments of the population. Certainly the patients in a malaria clinic are typically younger men, while three to four times fewer women and children attend.

Men travelled more often to distant fields in the malarious areas of the forest, men hunted at night when vector mosquitoes bite, men engaged in occupations that placed them at greater risk of infection. So we were
stunned to find that our survey data indicated similar exposure among children, adult men and adult women and closely similar rates of malaria illness. Tests showed that men and women had identical rates of infection.

It was obvious that a gap exists between the number of women infected with malaria and the number attending malaria clinics, the only source of prompt, effective, inexpensive treatment for the illness. The village-based clinic helped to close the gap, most completely for children who no longer had to depend on an older relative bringing them to the clinic. But the gap for adult women, although improved by local services, remains.

We of the research team began to explore the reasons for women's reduced attendance at clinics, and ways of making them more accessible to women. There seem to be several types of constraints on women's access to malaria clinics. First, and perhaps most easily remedied by – for instance – starting a village-based clinic, are the constraints of time and money. Women are held back by the necessities of child care, household duties, and the lack of ready cash to pay for transport. If a child cannot be left at home when the mother attends a clinic, it must be carried or led by the hand if the mother walks, or there will be an extra fare if transport is available. The time taken by a woman to travel to a clinic in town may more directly impinge on the welfare of the family, and make her more reluctant to go.

Several young women told us that they simply did not have the time to attend a clinic for malaria treatment.

A second reason why women may be reluctant to attend clinics is their perception of the relative seriousness of malaria. In a semi-immune population like this one, malaria is a familiar and recurring problem which may produce serious, life-threatening illness but will more often result in an unpleasant but self-limiting period of fever, chills and headache. For a woman under pressure of child care and household duties, the decision either to wait out a moderate illness or to seek more convenient treatment locally may be an easy one to make. Women told us that they were “not sick enough” to seek treatment at a clinic 10 to 15 kilometers from home or that medicine purchased from a local shop was “just as effective.”
Although clinics can be made more accessible, while education and information can address attitudes to health and medication, other factors limiting women's access to clinics are less easy to change: reluctance to travel alone, language barriers (Karen-speaking women typically have less experience of Thai-speaking culture than men), socio-cultural reasons such as discomfort on entering an alien environment, and greater willingness to rely on traditional healing.

In addition, there is pregnancy - a matter of particular significance to women. Drugs administered by the malaria clinics are known to be effective and have a reputation for causing strong side-effects, evidence of their curative power. I have been asked many times by young women receiving drugs in a malaria clinic whether the medication is harmful during pregnancy. Chloroquine is safe for use during pregnancy, and so is proguanil. Other anti-malarial drugs are either not recommended for use by pregnant women, or else the side-effects are unknown. Unfortunately, some pregnant women rely instead on sub-optimal dosing with drugs they have bought themselves.

Dr Krongthong and I found that the local and mobile clinics did much to encourage and enable women suffering from malaria to attend and receive effective treatment. Barriers of distance, cost and travel could be overcome by bringing the clinic closer to home. In some instances, women themselves became the cultural interpreters between clinic and community, overcoming the more subtle barriers of language and custom. And integrating the mobile clinic into the fabric of community life did much to promote private and public goals to improve health.

But a good deal remains to be done. Women and children are particularly vulnerable to malaria infection because their immunity is either not yet fully formed or has been reduced by pregnancy.

Those who plan and put into effect programmes for the detection and treatment of malaria can no longer be satisfied to offer low-cost and effective treatment only to those who arrive at facilities such as the malaria clinics in Maesot. All of these patients are offered excellent and appropriate care. But many people remain unserved. The planners must also actively seek to identify those who do not receive the benefit of services, and must adapt the services to the needs and sensibilities of all members of the community.

In 1958, when Professor Khunying Tranakchit Harinasuta first suggested to other physicians that malaria parasites might be developing resistance to the drug, chloroquine, she recalls the resounding reply, "No such thing!" Chloroquine, developed in 1939, had been so effective in treating malaria that it was overwhelmingly considered the definitive answer to this major tropical disease killer. But she was correct, and her observations made malaria history. "There were many barriers to conducting my early studies," says Professor Khunying Tranakchit of her work to demonstrate that there was indeed resistance. "We didn't have any money. We weren't sure of how to design a study. We didn't even know how many times a day to take blood samples." At times using her own money to keep the studies going, she was finally able to show beyond doubt that her early observations were correct. Since 1962, when she formally presented the results of her studies to a sceptical scientific community, malaria parasite resistance to chloroquine has been recognised wherever malaria is a problem, and has prompted a major new scientific search for alternative treatments and control strategies.

Dr Khunying Tranakchit Harinasuta

Professor Khunying Tranakchit earned her medical degree from Mahidol University, Bangkok, in 1944 and a doctorate in tropical medicine and hygiene from the School of Tropical Medicine in Liverpool, United Kingdom, in 1953. A life-time of scientific achievements has earned her an array of honours and awards and worldwide recognition, including the title Khunying which is the equivalent of the British title, Dame. Although she is now in her seventies, she shows no sign of slowing down her professional pace.

Her protégée on the Faculty of Tropical Medicine at Mahidol University is Dr Juntra Karbwang. She has a medical degree as well as a doctoral degree in clinical pharmacology in tropical medicine, and is the only such expert in Thailand. "We are very lucky that Dr Juntra has joined our staff," says Professor Khunying Tranakchit, "because there are many questions to be answered about the new anti-malarial drugs currently under investigation."

"The problem," explains Dr Juntra, "is that pharmaceutical companies in western countries are not interested in the costly process of developing drugs for diseases which basically do not affect western populations. Nor are there adequate opportunities for researchers in non-endemic countries to study these [tropical] diseases." That is why both doctors consider it essential that highly trained tropical disease researchers work in endemic countries. However, they share their expertise with the international research community, participating in meetings and conferences, and both are expert consultants to WHO.

Although of different generations - Professor Khunying Tranakchit was born in 1918 and Dr Juntra in 1954 - they are both pioneers in malaria research. Together they are forging new paths of knowledge that will ultimately help millions of malaria sufferers.