Feature

Maintaining momentum in Sri Lanka to ensure that malaria is gone – but not forgotten

Sri Lanka’s control of malaria is a public health success story but continued efforts are needed to ensure these gains are not lost: Chathuri Dissanayake reports

Beruwala, Sri Lanka – When a member of the Beruwala gem merchants’ community starts to run a fever, one of the first calls made is to the Anti Malaria Campaign headquarters in Colombo. These merchants, who constantly travel between Madagascar and Sri Lanka to trade, are now aware that they face a high risk of contracting malaria.

“We always ask the doctors at the hospital to test for malaria if we run a fever”, says Mohamed Shiraz Nabhan, a gem merchant in Beruwala. “We first got to know about malaria when we started going to Madagascar in 2008 to buy rubies from the new gem mine there”, he explains. “We had earlier heard about the fever, but since it was not common in these parts we knew nothing about it.”

It was only when a gem merchant developed an unusual fever during a business trip to malaria-endemic Madagascar that the community became aware that their regular business trips were putting them at risk. As a result, Nabhan often takes the initiative to coordinate with the Anti Malaria Campaign headquarters in Colombo if a community member is suspected of having malaria. The malaria programme, which is run by the Sri Lanka Ministry of Health, Nutrition and Indigenous Medicine, conducts extensive monitoring activities once a case is reported.

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“It is important to follow up [these cases], as the country is now in the elimination phase”, explains Dr Kamini Mendis, an independent consultant in malaria and tropical medicine and former coordinator of malaria treatment and malaria elimination at the World Health Organization (WHO) headquarters in Geneva.

After extensive control activities conducted by the Anti Malaria Campaign over several decades, the disease has finally been brought under control in Sri Lanka. The country recorded its last indigenous case of malaria in October 2012 and the Minister of Health, Nutrition and Indigenous Medicine has applied to WHO for certification of malaria elimination. This certification is the official recognition by WHO of a country’s malaria-free status.

With indigenous malaria successfully halted, the focus is now on preventing reintroduction of the disease and managing imported cases, says Dr Risintha Premaratne, Director, Research of the Ministry of Health, Nutrition and Indigenous Medicine and the national coordinator for preparation for WHO malaria-free certification.

HISTORY OF MALARIA IN SRI LANKA

Indigenous medical records indicate that Sri Lanka’s experience with malaria spans many centuries; indeed, it is believed that malaria was the “pestilence” that devastated the then-capital Anuradhapura in 300 CE. The biggest recorded outbreak of malaria was in 1934–1935, with an estimated nearly 1.5 million patients and 80,000 deaths. As a result of extensive eradication activities, including the introduction of indoor residual spraying, in subsequent decades the country saw a massive reduction in the number of malaria cases, to only 17 documented cases in 1963. However, factors such as reduced surveillance, persistence of undetected malaria transmission, extensive internal population movements and reallocation of funds away from the malaria programme resulted in a resurgence of the disease and a major epidemic during 1967–1968, although this time mortality was very low, as the epidemic was almost exclusively Plasmodium vivax malaria and antimalarial drugs were readily available.

Although activities were scaled up and a control programme initiated, thereafter significant numbers of cases were reported annually until 1999, with major epidemics in 1987 and during 1990–1992. The reduction in the number of malaria cases from 2000 onwards, plus the end of the civil conflict in 2009, led to a national programme aimed at elimination of malaria by 2014. Extensive surveillance, prevention and control activities, and decentralization of the implementation of the malaria programme, resulted in elimination being reached 2 years prior to the target, in 2012. This achievement is particularly notable, given the major operational challenges resulting from armed conflict between the Sri Lankan national forces and the separatist Liberation Tigers of the Tamil Eelam (LTTE) since 1983, which only concluded in 2009.
**CONFLICT AND MALARIA**

“The last outbreak of malaria [in Southern Province] was recorded in Katagamuwa army camp in 2009, and we managed to contain it within the camp”, recalls Hambantota Regional Malaria Coordinator, Lalaniithika Peiris. Hambantota district, a coastal district in Sri Lanka’s dry zone, was one of the districts that were worst affected by malaria in the 1990s, recording epidemic levels. “It was difficult for us to carry out control activities, and we realized indoor residual spraying – a standard method used in malaria control – is not effective in controlling the outbreak in the camp, as soldiers spent most nights deployed in the Yala jungle, where they are exposed to the mosquitoes”, she explains.

To address this issue, the malaria-control team conducted a larvicide programme along a 35-km stretch of the Kumbukkan Oya river, which was identified as a the main mosquito breeding site. This proved to be an arduous task, says Peiris. The malaria-control officers could not go into the jungle area alone, and covering 35 km within the 2-week time period for the larviciding to be effective was impossible for the small team.

As a solution, Peiris discussed with the area commander and enlisted the support of the army personnel to carry out the activities. “We taught the soldiers to how to carry out larvicide activities, assist in entomological surveillance, treatment methods and [how] to carry out monitoring activities thereafter”, she says. In addition, the soldiers who contracted the disease were given leave only after their course of directly observed treatment was completed while in the camp. This proved to be effective, as the outbreak was contained within the camp.

“It could have caused a huge outbreak if the infected soldiers were given leave, as the soldiers were from different parts of the country, and the disease could have spread”, explained Chandradasa Weerasooriya, public health inspector, who worked as a field assistant in the team that responded to the outbreak.

Prior to the last recorded indigenous case in 2012, the majority of malaria cases occurred among military personnel stationed in the malaria-prone northern and eastern parts of the country. This led to a strong involvement of the Ministry of Defence in malaria-control activities. The cooperation of the security forces was also needed, to conduct malaria-control activities in the conflict-affected areas of Sri Lanka prior to 2009.

During the conflict, outbreaks occurring in LTTE-controlled areas were also managed effectively through collaboration. During that time, many international aid and volunteer groups were engaged in relief activities in the areas controlled by the LTTE, for example, Kilinochchi district in northern Sri Lanka. “The government used to send us supplies for spraying and other control activities, and we would coordinate with the group in control in the area to carry out the activities. We were never prevented from doing our job”, recalls Saminathan Thushyanthan, who worked as a volunteer for Médecins Sans Frontières in 2006. He is now employed as a public health laboratory technician in the Kilinochchi Regional Office of the Anti Malaria Campaign.

Similarly, during the Janatha Vimukthi Peramuna insurrection during the late 1980s and 1990s, the members of the anti-malaria team were never hindered from carrying out their duties. “We had a team of young men carrying out entomological surveillance activities in Hambantota – the heart of [the] insurgency campaign during the time; still not a single member of the team was ever obstructed from doing their work”, recalls Mendis, who ran a 24-hour malaria clinic in the region at that time. “The importance of our work was acknowledged by all parties”, she explains. This acceptance led to the success of the malaria-control efforts, she notes.

**CURRENT STATUS AND NEW PRIORITIES**

With the country now in the elimination phase, a significant threat to these efforts is the risk of resurgence resulting from imported cases. The Anti Malaria Campaign now places great emphasis on monitoring and surveillance activities to prevent reintroduction and has identified different at-risk groups. One such at-risk group is people who frequently travel between malaria-endemic countries and Sri Lanka, such as the gem traders in Beruwala. Other travellers visiting the country from malaria-endemic countries also pose a serious threat. The Anti Malaria Campaign has now refocused, to ensure that areas that record a high number of tourists are also covered in their surveillance activities.

Several countries in south Asia are also at the near-elimination stage, and would benefit from an information-sharing
network, Premaratne says. For example, Sri Lanka receives a lot of visitors from India, travelling through both regular and irregular channels. “If we know in which areas malaria is prevalent in India and we are able to identify travel trends, then we would be in a better position to carry out surveillance and control activities”, he notes, adding that this calls for more collaboration between countries to manage anti-malaria activities effectively.

Another at-risk group is returning refugees, who were in refugee camps, mainly in India, many of whom have been exposed to malaria in India. To address the issue, compulsory testing has been made a part of their reintegration programme, explains Dr M Mahendran, the Regional Malaria Officer (RMO) in Vavuniya, a district in northern Sri Lanka, where large numbers of returnee refugees reside.

The Anti Malaria Campaign continues to conduct door-to-door testing in formerly endemic areas of the country, where the risk of resurgence remains high, owing to the presence of relatively high numbers of the mosquito vectors and other factors favouring malaria transmission. These activities mirror those done during epidemic periods and include rigorous monitoring and frequent blood testing. Mobile clinics equipped to test, diagnose and treat patients are also used. When needed, these can also be deployed immediately to the relevant area when an imported case is reported.

ENSURING MALARIA DOES NOT BECOME A “FORGOTTEN” DISEASE

Despite these efforts, Premaratne harbours a deep concern that malaria is becoming a “forgotten” disease in Sri Lanka. In many parts of the country, including districts in the dry zone where the disease was formerly endemic, the younger generation is not familiar with the disease, and is not aware of the threats, he notes. This lack of awareness also extends to Sri Lanka’s health-care workers. Since the indigenous burden of malaria is zero, when a patient presents with fever, malaria is not high on the list of differential diagnoses. If a health professional overlooks the possibility of malaria infection, thereby delaying diagnosis, the life of the patient is put at danger and the country risks a reintroduction. To mitigate this possibility, the Anti Malaria Campaign now carries out awareness programmes for both private health-care professionals and those practising in the state hospital system.

Last, but not least, is the serious worry for the Anti Malaria Campaign of running out of funding for the essential surveillance activities. “I fear that this may be the beginning of the end. Once malaria-free status certification is obtained from WHO, we may not get funds from the Global Fund to Fight AIDS, Tuberculosis and Malaria, and the government may also cut down on funds as there are other disease-control activities that need attention as well”, Mendis highlights.

Regional teams of the Anti Malaria Campaign already carry out control activities for dengue, another mosquito-borne disease, which is now a leading public health problem in the country. Mendis fears that resources may be reallocated to focus more on such control activities, pushing the activities of the Anti Malaria Campaign behind, which could result in a situation similar to the 1969 resurgence.

However, the Director-General of Health Services in the Ministry of Health, Nutrition and Indigenous Medicine, Dr Palitha Mahipala, assures that such cut-backs will not happen. According to him, the Ministry of Health, Nutrition and Indigenous Medicine already funds 60% of the Anti Malaria Campaign programme, and plans to fulfil all funding requirements in the future.