

Short Communication

# Status of Malaria in the WHO South-East Asia Region

*Arvind Nath*

Scientist 'E', National Institute of Malaria Research, Sector 8 Dwarka, New Delhi, India.

DOI: <https://doi.org/10.24321/2455.7048.202220>

## I N F O

**E-mail Id:**

arvindnath@rediffmail.com

**Orcid Id:**

<https://orcid.org/0000-0002-8474-5135>

**How to cite this article:**

Nath A. Status of Malaria in the WHO South-East Asia Region. *Epidem Int.* 2022;7(2):20-23.

Date of Submission: 2022-06-10

Date of Acceptance: 2022-06-29

## A B S T R A C T

The WHO South-East Asia Region includes the following eleven countries: Bangladesh, Bhutan, the Democratic People's Republic (DPR) of Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, and Timor-Leste. Malaria has a varied distribution in each of these countries. While two of them, Maldives, and Sri Lanka, have been certified by the WHO to be free of malaria, the remaining countries are still progressing towards that target. The aim of this article is to present the status of the disease in those countries and their progress towards the elimination target.

**Keywords:** Malaria, WHO, SEARO

## Introduction

The WHO South-East Asia Region includes the following eleven countries: Bangladesh, Bhutan, DPR Korea, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka, Thailand, and Timor-Leste (Figure 1).



Figure 1. A Map of WHO's South-East Asia Region<sup>1</sup>

## Method

The study design included online searches related to

malaria for each country, including WHO and World Bank documents, journal articles, as well as national programme documents.

## Results

### Bangladesh

According to one study, there were 6130 cases of malaria in Bangladesh in 2020 limited to 13 districts.<sup>2</sup> 90% of these cases occurred in just three districts: Khagrachhari, Rangamati, and Bandarban.

### Bhutan

According to one study, there were 54 cases of malaria in Bhutan in 2018 (Table 1). Of these, 6 were indigenous, 14 were introduced and 34 were imported.<sup>3</sup> It also mentioned that the country has 20 districts out of which malaria is found only in 2 districts which border Assam and West Bengal states of India. These two states have more intense cross-border activity as compared to Arunachal Pradesh and Sikkim, and most cases are found in the areas bordering Assam.

The spurt in the number of indigenous malaria cases in 2020 was due to the COVID-19 epidemic in which health staff

were diverted towards COVID-related activities resulting in lesser attention being paid to malaria control.<sup>4</sup>

**Table 1. Number of Malaria Cases in Bhutan (2018–2021)<sup>3,5</sup>**

Year	Indigenous	Introduced	Imported	Total
2018	6	14	34	54
2019	2	10	30	42
2020	22	21	9	52
2021	11	4	6	21

### DPR Korea

In 2020, there were 1819 confirmed cases of malaria in the country. The country aims to eliminate malaria by 2025. *Plasmodium vivax* is the only malarial parasite present in DPR Korea and this will prove a challenge to eliminate because of its relapsing nature due to the latent hypnozoite stages.<sup>6</sup>

### India

In 2018, even though the state of Mizoram had the highest API in the country (3.58), it had only 4296 malaria cases. This was far less as compared to Chhattisgarh which, though had a lower API of 2.63, recorded a much higher number of malaria cases (77140). Thus, from an elimination point of view, the malaria problem is greater in Chhattisgarh than in Mizoram.<sup>7,8</sup>

### Indonesia

In 2017, there were 261,617 reported confirmed cases of malaria seen at governmental health facilities in Indonesia. *P. falciparum* caused 67% of these cases while *P. vivax* was responsible for the remaining cases (33%). Both were concentrated in the eastern part of the country.<sup>9</sup>

### Myanmar

According to one reference, there were 85,019 cases of malaria in Myanmar in 2017. The occurrence of the disease was more in the western part of the country as compared to the eastern part. *Plasmodium falciparum* malaria was more prevalent in the western part while *Plasmodium vivax* malaria predominated in the eastern part of the country.<sup>10</sup> As per another article, the artemether-lumefantrine combination remains highly effective in Myanmar.<sup>11</sup>

### Nepal

According to one study, in 2019, there were 1065 cases of malaria in Nepal, of which, 440 were indigenous and 625 were imported from India and countries in Africa. The Annual Parasite Incidence (API) in 2019 was 0.09 per 1000 population at risk.<sup>12</sup> As per another reference, there were

73 cases of malaria in Nepal in 2020.<sup>13</sup> This figure refers to indigenous cases of malaria only.

### Thailand

According to one study, there were 2893 cases of malaria in Thailand in 2021.<sup>14</sup> As per another reference, in 2020, there were 2836 cases of malaria in Thailand.<sup>15</sup>

### Timor-Leste

There were 16 reported confirmed cases of malaria seen at governmental health facilities in Timor-Leste in 2017. *Plasmodium falciparum* caused 81% of these cases while *Plasmodium vivax* caused the remaining cases (18%). *P. falciparum* malaria was present in the northwestern part of the country while *P. vivax* malaria was seen in the southwestern part. Both types of malaria were present in the exclave of Timor-Leste located alongside the Indonesian Timor province which is the western part of Timor Island.<sup>16</sup>

### Discussion

The Government of Bangladesh's National Malaria Elimination Programme in partnership with a large NGO, Bangladesh Rural Advancement Committee (BRAC), is spearheading the malaria elimination agenda. Ten low to medium-prevalence districts have set 2025 as their elimination target while the three high-prevalence districts have their target set as 2030.

In 2021, the number of malaria cases in Bhutan fell to 21 which was considerably lower than the previous three years. However, unlike in the previous three years where the imported and introduced cases outnumbered indigenous cases, in 2021, the number of indigenous cases was more. Bhutan plans to eliminate malaria by 2025 under the "Bhutan Malaria Elimination Strategy".

In 2016, the Government of India adopted a framework for malaria elimination in India covering the period 2016–2030. This was based on WHO's Global Technical Strategy for Malaria for 2016–2030 which was adopted in 2015 and further updated in 2021. The aim is to reach zero malaria cases by 2027 and then wait for three years before WHO can grant malaria-free status certification. It is almost the middle of 2022 and India is about to reach the halfway mark of the period from 2016 to 2027.

Indonesia has set 2030 as its target for the elimination of malaria. Therefore, it has only 8 years to go to achieve this. First, it must tackle *Falciparum* malaria. *Vivax* malaria may prove to be a challenge because of the latent stages of the disease and the recurrences.

Myanmar is targeting *P. falciparum* malaria elimination by 2025 and all forms of human malaria by 2030. However, when one compares Myanmar's 2017 malaria caseload

data with the 2020 Indian border states data, the Indian states, except for Mizoram, have small numbers of cases. The Indian border states will need to keep up the vigil to prevent the entry of the malarial parasite into the country. In these four border states (Manipur, Mizoram, Nagaland, and Arunachal Pradesh), the artemether-lumefantrine combination used for the treatment of *P. falciparum* malaria is the same as is being used in Myanmar.

The Government of Nepal's Malaria Elimination Programme has stratified the country into high, moderate, low, and no-risk districts. This has been taken further down to the ward level. The aim is to make Nepal free from malaria by 2025.

Thailand has been identified by the WHO as one of the countries having the potential to eliminate malaria by 2025. This was based on its meeting the following conditions: (1) Having a national goal for malaria elimination by 2025: Thailand, through its National Strategic Plan for malaria elimination, has set the target for 2024, (2) Recording an annual caseload that suggests elimination is feasible by 2025: Thailand's figure of 2836 malaria cases for 2020 is considered acceptable, (3) Having a dedicated national malaria programme: In Thailand, this falls under the Division of Vector-Borne Diseases which also ensures that malaria remains a notifiable disease.

Timor-Leste was able to control malaria almost within a decade. However, it must be cautious because its neighbour Indonesia reports many malaria cases in its eastern part which is very close to Timor-Leste and therefore the risk of importation of the disease is very high. Timor-Leste has set 2025 as its target for the elimination of malaria.

## Conclusion

The movement of people across the Indo-Bangladesh border cannot be prevented. However, if anti-malaria measures are improved in the districts of Meghalaya, Assam, Tripura, and Mizoram bordering Bangladesh, then the number of imported cases of malaria from India to Bangladesh would decrease. In the same way, if anti-malaria measures are improved in the districts of Bangladesh bordering India, then the number of imported cases of malaria from Bangladesh to India would also come down.

The movement of people across the Indo-Bhutan border can also not be stopped. However, if anti-malaria measures are improved in the districts of Assam and West Bengal bordering Bhutan, then the number of imported cases of malaria from India to Bhutan would decrease.

It is found in India that API alone is not a useful indicator of malaria elimination efforts. Attention must also be paid to the actual number of malaria cases occurring in the state/ union territory. Although India did not reach zero malaria cases in 2018, it still has five more years to do so

but it must reach out to the states and union territories with high malaria case-load first.

Indonesia has 8 more years to go since it has set 2030 as its target for the elimination of malaria.

The movement of people across the Indo-Myanmar border cannot be prevented. However, if anti-malaria measures are improved in the districts of Manipur, Mizoram, Nagaland, and Arunachal Pradesh bordering Myanmar, then the number of imported cases of malaria from Myanmar to India would decrease.

Similarly, if anti-malaria measures are improved in the districts of Uttar Pradesh and Bihar bordering Nepal, then the number of imported cases of malaria from India to Nepal would decrease, and if anti-malaria measures are improved in the districts of Nepal bordering India, then the number of imported cases of malaria from Nepal to India would also come down.

Thailand has just 2 years more to go to meet its national target of malaria elimination. It must put in all efforts to cover the last mile before the deadline.

Timor-Leste has only 3 years to go to achieve its malaria elimination target. First, it must tackle *falciparum* malaria because *vivax* malaria may prove to be difficult.

**Conflict of Interest:** None

## References

1. World Health Organization [Internet]. Review of climate change and health activities in SEARO member states. Synthesis Report; 2015 [cited 2022 May 22]. Available from: [https://cdn.who.int/media/docs/default-source/searo/review-of-cc.pdf?sfvrsn=26ea4a46\\_2](https://cdn.who.int/media/docs/default-source/searo/review-of-cc.pdf?sfvrsn=26ea4a46_2)
2. Naher KM. Liberating Bangladesh from malaria: how far have we come in the last 50 years? [Internet]. Bangladesh Rural Advancement Committee (BRAC); 2021 Apr 25 [cited 2022 May 25]. Available from: <http://blog.brac.net/liberating-bangladesh-from-malaria-how-far-have-we-come-in-the-last-50-years/>
3. Wangchuk S, Gyeltshen S, Dorji K, Wangdi T, Dukpa T, Namgay R, Dorjee S, Tobgay T, Chaijaroenkul W, Na-Bangchang K. Malaria elimination in Bhutan: asymptomatic malaria cases in the Bhutanese population living in malaria-risk areas and in migrant workers from India. *Rev Inst Med Trop Sao Paulo* [Internet]. 2019 [cited 2022 May 18];61:e52. Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6746194/> [PubMed] [Google Scholar]
4. Penjor K, Tobgyal, Zangpo T, Clements AC, Gray DJ, Wangdi K. Has COVID19 derailed Bhutan's national malaria elimination goal? A commentary. *Malar J* [Internet]. 2021 [cited 2022 May 18];20:20. Available

- from: <https://malariajournal.biomedcentral.com/articles/10.1186/s12936-020-03562-5> [PubMed] [Google Scholar]
5. Ministry of Health (MoH), Royal Government of Bhutan [Internet]. Annual Health Bulletin 2022; [cited 2022 Jul 18]. Available from: [https://www.moh.gov.bt/wp-content/uploads/ict-files/2022/07/Annual-Health-Bulleti-2022\\_Link-3.pdf](https://www.moh.gov.bt/wp-content/uploads/ict-files/2022/07/Annual-Health-Bulleti-2022_Link-3.pdf)
  6. Asia Pacific Malaria Elimination Network [Internet]. DPR Korea. Highlights; [cited 2022 Aug 23]. Available from: <https://www.apmen.org/country/dpr-korea>
  7. Government of India [Internet]. Annual Report 2018. National Vector-Borne Disease Control Programme; [cited 2021 Aug 25]. Available from: <https://nvbdcp.gov.in/Doc/Annual-Report-2018.pdf>
  8. National Statistical Office [Internet]. EnviStats-India 2022. Vol. I. Environment Statistics, Ministry of Statistics & Programme Implementation, Government of India, New Delhi; [cited 2022 May 12]. Available from: <https://www.mospi.gov.in/documents/213904/301563/Component%2051648726348116.pdf/b498b21d-e486-5e98-b84c-397f1884f60a>
  9. World Health Organization [Internet]. Malaria 2021 country profile: Indonesia; [cited 2022 May 17]. Available from: <https://www.who.int/publications/m/item/malaria-2021-country-profile-idn>
  10. World Health Organization, Myanmar [Internet]. Malaria surveillance – key to help prevent malaria; 2018 Sep [cited 2022 May 27]. Available from: [https://www.who.int/docs/default-source/searo/myanmar/help-prevent-malaria-\(english\).pdf?sfvrsn=7e71af10\\_0](https://www.who.int/docs/default-source/searo/myanmar/help-prevent-malaria-(english).pdf?sfvrsn=7e71af10_0)
  11. McLean AR, Indrasuta C, Khant ZS, Phyo AK, Maung SM, Heaton J, Aung H, Aung Y, Soe K, Swe MM, von Seidlein L, Tun NN, Tun KM, Day NP, Ashley EA, Hlaing T, Kyaw TT, Dondorp AM, Imwong M, White NJ, Smithuis FM. Mass drug administration for the acceleration of malaria elimination in a region of Myanmar with artemisinin-resistant falciparum malaria: a cluster-randomised trial. *Lancet Infect Dis* [Internet]. 2021 [cited 2022 May 27];21(11):1579-89. Available from: [https://doi.org/10.1016/S1473-3099\(20\)30997-X](https://doi.org/10.1016/S1473-3099(20)30997-X) [PubMed] [Google Scholar]
  12. Awasthi KR, Jancey J, Clements AC, Leavy JE. A qualitative study of knowledge, attitudes, and perceptions towards malaria prevention among people living in rural upper river valleys of Nepal. *PLoS One* [Internet]. 2022 [cited 2022 May 26];17(3):e0265561. Available from: <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0265561> [PubMed] [Google Scholar]
  13. Trading Economics [Internet]. Nepal - malaria cases reported; [cited 2022 May 26]. Available from: <https://tradingeconomics.com/nepal/malaria-cases-reported-wb-data.html>
  14. Shah JA. Learnings from Thailand in building strong surveillance for malaria elimination. *Nat Commun* [Internet]. 2022 [cited 2022 May 2];13:2677. Available from: <https://www.nature.com/articles/s41467-022-30267-x> [PubMed] [Google Scholar]
  15. World Health Organization [Internet]. Thailand gears up to eliminate malaria by 2024; [cited 2022 May 12]. Available from: <https://www.who.int/news-room/feature-stories/detail/thailand-gears-up-to-eliminate-malaria-by-2024>
  16. World Health Organization [Internet]. Malaria 2021 country profile: Timor-Leste; [cited 2022 May 18]. Available from: <https://www.who.int/publications/m/item/malaria-2021-country-profile-tls>