

**SHORT COMMUNICATION**

**A Study of Malaria in Meghalaya State**

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**ABSTRACT**

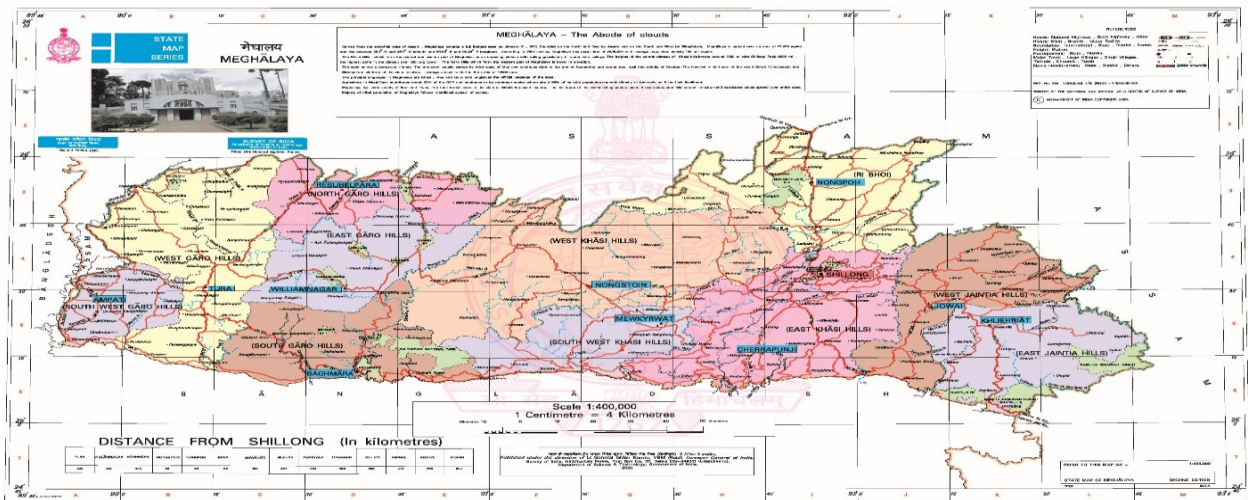
The South Garo Hills District of Meghalaya had a high number of 284 Malaria cases out of which 281 were due to *Plasmodium falciparum* and an Annual Parasite Incidence (API) of 1.69 during 2021. However, if interventions like the treatment of asymptomatic carriers take place, it is expected that the API and the number of Malaria cases will come down further.

**Key words:** Malaria, Meghalaya, API

**Introduction**

Meghalaya is in the north-eastern part of India. It is bordered by Bangladesh in the south and Assam in the north. The state is covered with hills and forests and is known for its heavy rainfall. In 2011, Meghalaya had a population of 29,66,889 and had a literacy rate of 74.43%.<sup>1</sup>

Fig.-1: Map of Meghalaya



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## Methods

The study design included analysis of the annual reports of the Meghalaya State Vector Borne Disease Control Programme (NVBDCP) pertaining to the years 2019 to 2021 and the reports pertaining to insecticide-susceptibility of Malaria vectors.

## Results

According to the most recent data available with the Meghalaya State NVBDCP (data for the year 2021), the API for Meghalaya is 0.13. However, by going through the data for Meghalaya state, it is seen that the Malaria problem is not equally distributed in the districts; it is focal as can be seen from the following information:

**Table -1:** API of the Districts of Meghalaya State, 2021

Rank	District	No. of Malaria Cases	No. of <i>P. falciparum</i> cases	API
1	East Khasi Hills	6	5	0.01
2	Ri-Bhoi	5	2	0.02
3	West Jaintia Hills	38	3	0.11
4	East Garo Hills	27	26	0.14
5	West Khasi Hills	34	34	0.09
6	West Garo Hills	58	52	0.10
7	South Garo Hills	284	281	1.69
8	East Jaintia Hills	1	0	0.01
9.	South West Khasi Hills	3	2	0.02
10	South West Garo Hills	12	11	0.06
11	North Garo Hills	15	14	0.07
<b>Total</b>	<b>Meghalaya</b>	<b>483</b>	<b>430</b>	<b>0.13</b>

So, it is seen that out of the eleven districts, Malaria is highly concentrated in mainly South Garo Hills District.

It may be further useful to study what was the trend of the APIs in the South Garo Hills District over the years. For this, the annual records were referred to and the following findings were observed:

**Table- 2:** API of South Garo Hills District, 2019 to 2021

District	Year		
	2019	2020	2021
South Garo Hills	7.95	5.85	1.69

Regarding insecticide-susceptibility, it has been observed that the Malaria vectors are showing resistance to DDT (Dichloro-diphenyl-trichloroethane) but are susceptible to Deltamethrin.

## Discussion

It is observed that there is a decline in API over the years, but the problem is still large. The percentage of Malaria cases in South Garo Hills District which were due to *Plasmodium falciparum* was 97.32% in 2018 while it was 93.05 in 2017.<sup>2,3</sup> However, in Chhattisgarh, during 2020 and 2021, four rounds of “Malaria-Mukt Bastar” took place wherein every person living in each of the villages in the Bastar region had their finger pricked and a drop of blood drawn which was examined for the *Plasmodium* antigen using Rapid Diagnostic Kits. These campaigns detected the malarial antigen in both febrile persons and asymptomatic carriers and the most recent round was held from June 15, 2021, till July 31, 2021. If the diagnosis was *P. vivax*, Chloroquine and Primaquine were given to the patient. If it was *P. falciparum*, Artemisinin-based Combination Therapy (ACT) and Primaquine were provided. Mixed infections were treated by ACT and Primaquine<sup>4,5</sup>. As a result, though in the one year preceding till November 2019 there were 5272 cases of Malaria in the Bastar region, during the following year till November 2020 there were only 2696 cases i.e., there was a drop of about 49% in the number of cases<sup>6</sup>. That means there was some useful effect of these campaigns in that the reservoirs of the Malarial parasite i.e., the humans were effectively treated thereby reducing the number of those persons who could be sources of infection to the female Anopheline mosquitoes.

## Conclusions

If an approach of universal diagnosis and radical treatment like that which was used in the “Malaria-Mukt Bastar” campaigns is adopted in South Garo Hills District, it is possible that the API may come down further and more quickly in Meghalaya State, especially if it must reach the target of zero cases of Malaria by 2027. This would enable the country to receive the certification of Malaria elimination in 2030. Some recent reviews have also corroborated this view.<sup>7-11</sup>

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