

Short Article



# A STUDY OF MALARIA IN NAGALAND STATE OF INDIA

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## Abstract

The Annual Parasite Incidence (API) of Malaria for Nagaland has been observed to be decreasing from 2018 till 2020 when it reached 0.01. Although the state did not reach zero Malaria cases in 2020, it is a good candidate for being the first state in the country to be able to achieve near-elimination goals.

**Keywords:** Malaria, Nagaland, API

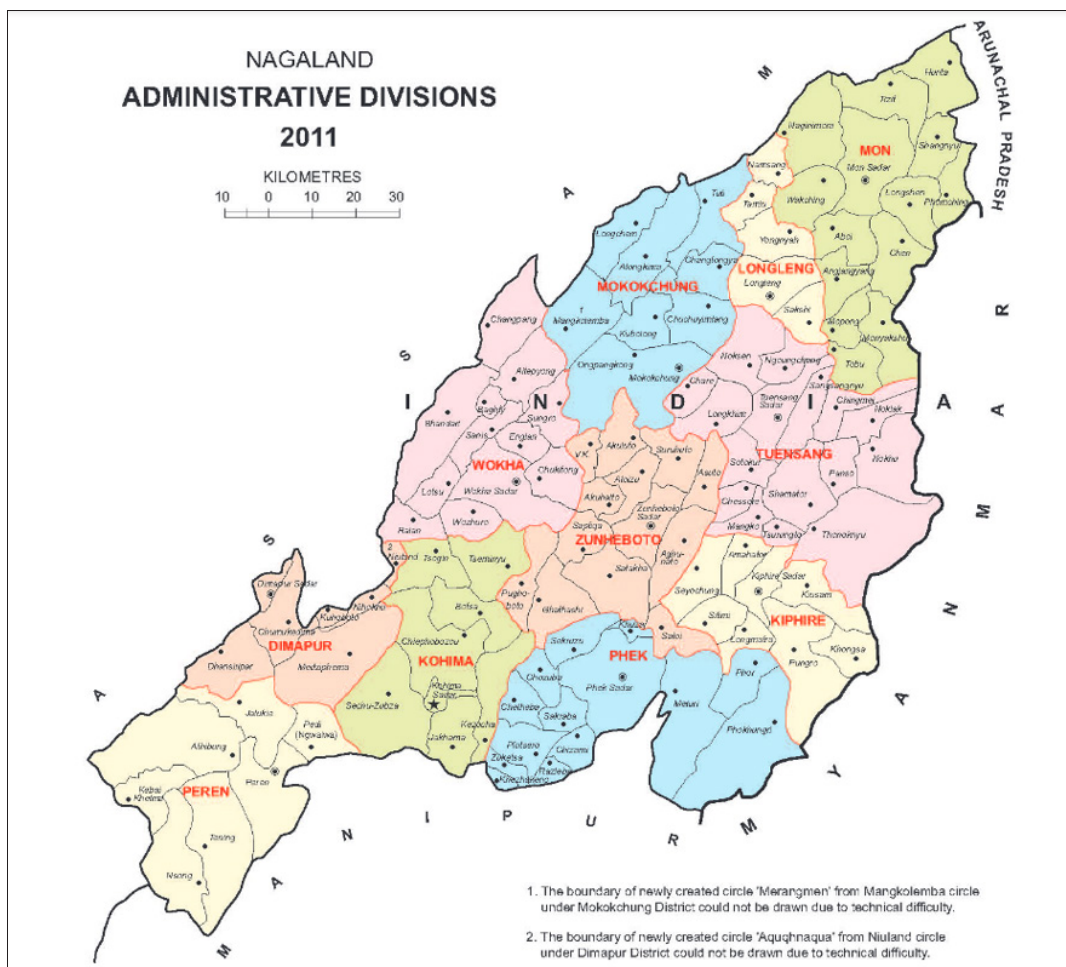


Figure 1: Map of Nagaland [Source: (1)]

### 1. Introduction

Nagaland is in the northeastern part of India. It is bordered by Myanmar on the east, Assam in the west, Arunachal Pradesh in the north and Manipur in the south.

During the last decade, Malaria was endemic in all the eleven districts of Nagaland. This can be seen from the table below which shows the number of

Malaria cases and deaths (district-wise) from 2009 to 2012.

### 2. Methods

The study design included analysis of the annual report of the Malaria Division of the National Centre for Vector-Borne Diseases Control (NCVBDC) for 2018 and a study of the website of the Department of Health and Family Welfare, Nagaland.

**Table 1: No. of Malaria Cases & Deaths (District-wise) 2009 till 2012 and API of Malaria, 2012**

District	2009		2010		2011		2012		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	API
Dimapur	1392	19	1460	1	666	0	513	0	2.81
Kiphire	114	0	72	0	68	0	96	0	1.3
Kohima	882	1	540	0	568	0	409	0	1.51
Longleng	208	0	291	0	112	0	162	0	3.2
Mokukchung	2552	1	1118	0	781	0	548	0	2.84
Mon	669	2	297	0	68	0	53	0	0.21
Peren	63	0	97	2	15	1	13	0	0.14
Phek	433	0	157	0	344	1	349	1	2.14
Tuensang	286	0	127	0	90	0	133	0	0.68
Wokha	1393	1	367	0	298	0	190	0	1.14
Zunheboto	280	0	129	0	123	0	114	0	0.81
NAGALAND	8849	35	4959	14	3363	4	2891	1	1.46

[Source: (2)]

**Table 2: API of the Districts of Nagaland State, 2018**

S. No.	District	API
1	Dimapur	0.08
2	Kiphire	0.46
3	Kohima	0.01
4	Longleng	0.02
5	Mokukchung	0.03
6	Mon	0.03
7	Peren	0.00
8	Phek	0.03
9	Tuensang	0.06
10	Wokha	0.05
11	Zunheboto	0.07
STATE	NAGALAND	0.06

[Source: (3)]

**Table 3: No. of Malaria Cases in Nagaland, 2019 and 2020**

S. No.	District	No. of Malaria Cases	
		2019	2020
1	Dimapur		
2	Kiphire		Zero
3	Kohima		Zero
4	Longleng	Zero	Zero
5	Mokukchung	Zero	Zero
6	Mon		
7	Peren		
8	Phek	Zero	
9	Tuensang		
10	Wokha		
11	Zunheboto		Zero
STATE	NAGALAND		

[Source: (4)]

**Table 4: API of Malaria in Nagaland 2018 till 2020**

State	Year		
	2018	2019	2020
Nagaland	0.06	0.01	0.01

[Source: (3), (4)]

### 3. Results

According to the most recent data available on the NCVBDC website (data for 2018), the API for Nagaland was 0.06[2]. It is seen that the distribution of Malaria is not the same throughout the state. It is uneven as can be seen from the following table.

So, it is seen that out of the eleven districts, Malaria is present in a small proportion in Peren, Kohima and Longleng districts.

It may be further useful to study what was the trend of Malaria cases in Manipur over the years. For this, the website of the Department of Health and Family Welfare, Nagaland was referred to and the following findings were observed:

It will also be helpful to see the trend in API of Malaria over the years.

### 4. Discussion

It is observed that there has been a decrease in API over the years between 2018 and 2020 with nearly half of the districts in the state reporting zero Malaria cases during 2020. An important factor is that the Indian Army is posted throughout the state and rather than carrying out spraying activities, they make generous use of Mosquito Larvicidal Oil (MLO) throughout their campuses for Malaria control. Even if there is a small puddle of water, MLO is immediately applied.

The Government of India, in 2016, adopted a framework for Malaria Elimination in India covering the period 2016 – 2030[5]. This was based on WHO’s Global Technical Strategy for Malaria, covering the same period, adopted in 2015 and updated in 2021[6].

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 already the beginning of 2022 and India is about to reach the halfway mark of this period from 2016 to 2027.

## 5. Conclusion

Although Nagaland did not reach zero Malaria cases in 2020, it did reach an API of 0.01 that year. Therefore, it is a good candidate for being the first state in the country close to being able to achieve near-elimination goals. Chhattisgarh is making great efforts through its mass drug treatment program to achieve a lower API in its high-endemic districts.<sup>[7]</sup>

A similar strategy has been proposed for Bihar also.<sup>[8]</sup>

**Conflict of Interest:** None

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