

Short Communication

# A Study of Malaria in Sikkim

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## A B S T R A C T

**Background:** To the best knowledge of the author, there is no available literature on the status of Malaria in Sikkim. Hence the preparation of this document.

**Objectives:** To find out the parameters of Malaria in Sikkim till as recently as possible.

**Methods:** By studying the documents prepared by the National Centre for Vector Borne Diseases (NCVBD) and the website of National Health Mission (NHM), Sikkim.

**Results:** It is seen that the Annual Parasite Incidence (API) of Malaria in Sikkim had come down to the very low level of 0.03 in 2018 and that there were only 2 cases of Malaria in Sikkim during 2021 (up to 19th September).

**Conclusions:** Sikkim is very close to achieving Malaria-elimination goals.

**Keywords:** Malaria, Sikkim, API, NCVBD, WHO

## Introduction

Sikkim is in the north-eastern part of India. It is bordered by Nepal in the west, West Bengal, and Bhutan in the south and China in the north and east.

## Materials & Methods

The study design included analysis of the annual reports of the Malaria Division of the National Centre for Vector-Borne Diseases Control (NCVBDC) for 2017 and 2018 and a study of the National Health Mission (NHM) website of Sikkim.

## Results

According to the most recent data available on the NCVBDC website (data for 2018), the API for Sikkim was 0.03.<sup>2</sup> It's comparison with the API from 2017 can be seen from Table 1.



Figure 1. Map of Sikkim<sup>1</sup>

**Table 1. API of Sikkim, 2017 and 2018<sup>2, 3</sup>**

State	Year	
	2017	2018
Sikkim	0.06	0.03

Thus, it is seen that the API in 2018 was half as that seen in 2017.

In 2018, the API was not uniform throughout the state but varied between the districts. This can be seen from Table 2.

**Table 2. API of the Districts of Sikkim, 2018<sup>2</sup>**

S. No.	District	API
1.	East Sikkim	0.04
2.	West Sikkim	0.00
3.	North Sikkim	0.00
4.	South Sikkim	0.03
State	Sikkim	0.03

**Table 3. Data on Malaria Cases in Sikkim, 2013 till 2021<sup>4</sup>**

Reference period	Number of malaria cases
2013	38
2014	35
2015	26
2016	15
2017	14
2018	6
2019	7
2020	4
2021 (till 19th September)	2

A study of the NHM Sikkim website revealed the following information on Malaria cases in Sikkim during 2013 till 2021 and is shown in the Table 3.

The breakup of the two 2021 cases were one *P. vivax* male patient from east district and one *P. falciparum* male patient from South district.

## Discussion

Beginning in 2013, there has been a decline in the incidence of Malaria in Sikkim.

During 2021, there was no indigenous transmission of Malaria in Sikkim. The two cases that were reported during that year were imported cases. If Sikkim maintains this absence of indigenous transmission of Malaria for three consecutive years, it will be eligible for receiving certification of Malaria elimination.

Foci investigation of Malaria cases is carried out by taking

a history of recent travel outside the place of Malaria diagnosis and applying knowledge of minimal incubation periods for *P. falciparum* and *P. vivax*.

In 2016, the Government of India adopted a framework for Malaria Elimination in India covering the period 2016 – 2030.<sup>5</sup> This was based on WHO's Global Technical Strategy for Malaria covering the period 2016 – 2030 which was adopted in 2015 and updated in 2021.<sup>6</sup>

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 nearly the middle of 2022 and India is about to reach the halfway mark of the period from 2016 to 2027.

## Conclusion

The state of Sikkim may qualify soon for elimination of Malaria if the same pace is sustained. The state may intensify the efforts to ensure that no indigenous case is reported and sustained for three years. All support will be required to strengthen epidemiological and entomological surveillance during post-elimination phase as per guidelines.

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**Conflict of Interest:** None

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