



A Study of Malaria in Haryana State of India

Arvind Nath ^{a++*}

^a ICMR – National Institute of Malaria Research, Sector 8 Dwarka, New Delhi–110077, India.

Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

Short Communication

Received: 08/03/2023

Accepted: 01/05/2023

Published: 04/05/2023

ABSTRACT

Background: The Annual Parasite Incidence (API) of Malaria for Haryana had been observed to be decreasing from 2017 to 2018 when it reached 0.11 from 0.20.

Methodology: 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 web search for information on Malaria in Haryana.

Results: There is one district, Nuh, which deserves special mention because it's API was 5.07 in 2015 which came down to 0.02 in 2020.

Conclusions: Although Haryana did not reach zero Malaria cases in 2021, it did reach an API of 0.11 during 2018. Therefore, it is a good candidate for being the first state in the country close to being able to achieve near-elimination goals.

Keywords: Malaria; Haryana; annual parasite incidence.

1. INTRODUCTION

"Malaria is a well-known mosquito-borne illness and it continues to be a major public health problem at the start of new millennium. It is a common mosquito-borne illnesses in our country. It is a protozoan disease caused by the parasites of the genus plasmodium. Owing to existence of an ideal environment for the breeding of

mosquitoes such as warm climate, heavy rain, and stagnant water, industrialization, and expanding urbanization are the factors attributed toward the mosquito breeding. The incidence of malaria peaks in monsoon (June to October), as stagnant water provides the optimal conditions for the breeding of mosquitoes" [1]. The present study discusses about occurrence of malaria in Haryana, India.

^{**} Scientist 'E';

^{*}Corresponding author: Email: natha.hq@icmr.gov.in;



Fig. 1. Map of Haryana
[Source: (1)]

Table 1. API of PHC Nuh from 2008 to 2012

PHC	API				
	2008	2009	2010	2011	2012
Nuh	1.35	0.11	0.27	3.11	2.13

[Source: (3)]

Haryana is in the northern part of India. It is bordered by Punjab and Himachal Pradesh in the north, Rajasthan in the west and south, and Delhi and Uttar Pradesh in the east (Fig. 1).

During the last decade, an API of 5.07 for 2015 was recorded in Nuh district [2]. Nuh district was formerly known as Mewat district. Primary Health Centre (PHC) data from Nuh headquarters can be seen from the table above (Table 1) which shows the API from 2008 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 web search for information on Malaria in Haryana.

Annual Parasite Incidence (API): Annual Parasite Incidence (API) is given by the formula:

$$API = \frac{\text{Confirmed cases for one year}}{\text{Population under surveillance}} \times 1000$$

3. RESULTS

“According to the most recent data available on the NCVBDC website (data for 2018), the API for Haryana was 0.11” [3]. 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 (Table 2).

So, it is seen that out of the twenty-one districts, Malaria was present in a greater proportion in Nuh District.

It may be further useful to study what was the trend of Malaria in Nuh District over the years. The following findings were observed:

Table 2. API of the Districts of Haryana State, 2018

S. No.	District	API
1	Ambala	0.00
2	Bhiwani	0.04
3	Faridabad	0.09
4	Fatehabad	0.00
5	Gurugram	0.01
6	Hissar	0.05
7	Jhajjar	0.06
8	Jind	0.01
9	Kaithal	0.00
10	Karnal	0.01
11	Kurukshetra	0.01
12	Mahendragarh	0.02
13	Nuh	1.42
14	Palwal	0.29
15	Panchkula	0.11
16	Panipat	0.03
17	Rewari	0.01
18	Rohtak	0.06
19	Sirsa	0.03
20	Sonapat	0.00
21	Yamunanagar	0.07
STATE	HARYANA	0.11

[Source: (4)]

Table 3. API of Malaria in Nuh District 2015 to 2020

District	Year				
	2015	2017	2018	2019	2020
Nuh	5.07	2.92	1.42	0.68	0.02

[Source: (2), (4) and (5)]

4. DISCUSSION

It is observed that Haryana presently has a low API of 0.11 (2018 data) and that there has been a decrease in API in the Malaria-endemic region of Nuh District over the years between 2015 and 2020. The “Malaria-Mukt Mewat” campaign took place during 2018. In this campaign which consisted of two phases covering different villages, mass screening was done, and mosquito nets were distributed. The results were that in 2020, only 24 cases of Malaria were reported in Nuh District while in 2021, till June 14th, no cases of Malaria were reported.

In 2021, Haryana reported 54 cases of Malaria only [4].

“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 2023 and India is about to reach the halfway mark of the period from 2016 to 2027” [6-9].

5. CONCLUSION

Although Haryana did not reach zero Malaria cases in 2021, it did reach an API of 0.11 during 2018. Therefore, it is a good candidate for being the first state in the country close to being able to achieve near-elimination goals.

CONSENT AND ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Naz R, Khalid FM, Ruchi G, Malik AK. Pattern of malaria infection at tertiary care hospital of Haryana—A hospital based

study. *Int J Curr Microbiol App Sci.* 2016;5(2):330-7.

2. Available:<https://www.republicworld.com/india-news/general-news/no-case-of-malaria-reported-in-haryanas-nuh-district-this-year-so-far.html>
Accessed on 27 May 2022.
3. Government of India. Annual Report of National Vector-Borne Disease Control Programme 2018. Available:<https://nvbdcp.gov.in/Doc/Annual-Report-2018.pdf>
Accessed on 25 August 2021.
4. Available:<https://timesofindia.indiatimes.com/city/gurgaon/month-long-anti-malaria-drive-in-hry-from-june-1/articleshow/91824274.cms>
Accessed on 30 May 2022
5. Government of India. National Framework for Malaria Elimination in India 2016 – 2030. Available:<https://nvbdcp.gov.in/WriteReadData/l892s/National-framework-for-malaria-elimination-in-India-2016%E2%80%932030.pdf>
Accessed on 17 September 2021.
6. World Health Organization. Global Technical Strategy for Malaria 2016 – 2030. Available:<https://www.who.int/publications/i/item/9789240031357>
Accessed on 17 September 2021.
7. Registrar General and Census Commissioner of India 2011. Map of Haryana. Available:<https://censusindia.gov.in/nada/index.php/catalog/24>
Accessed on 27 May 2022.
8. Kumari A, Kant R, Sharma P. K., Chaudhary A. Trend of Malaria Incidence in Rohtak and Mewat Districts of Haryana, India During 2008 – 2013. *Ind. J. of Health Sciences & Care.* 2015;2(1):36-40. Available:https://www.researchgate.net/publication/291696841_Trend_of_Malaria_Incidence_in_Rohtak_and_Mewat_Districts_of_Haryana_India_During_2008-2013
Accessed on 27 May 2022.
9. Government of India. Annual Report of National Vector-Borne Disease Control Programme; 2017. Available:<https://nvbdcp.gov.in/Doc/Annual-Report-2017.pdf>
Accessed on 31 August 2021.