

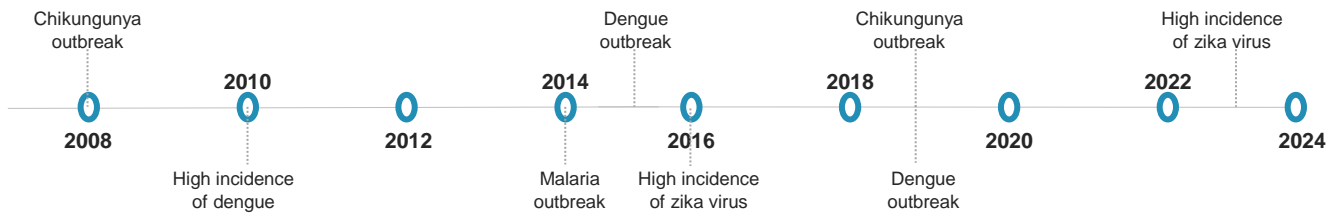
MOSQUITO-BORNE DISEASES IN THAILAND:

EPIDEMIOLOGY OF DENGUE, MALARIA, CHIKUNGUNYA, AND ZIKA VIRUS IN THAILAND



Mosquito-borne diseases are infectious diseases that are spread by the bite of infected mosquito species such as *Aedes* and *Anopheles* that carries the pathogens. In Thailand, the common mosquito-borne diseases include dengue fever, malaria, chikungunya, and zika virus. The country has successfully managed to eliminate lymphatic filariasis, while the prevalence of yellow fever and West Nile fever is extremely low.

OCCURANCE OF MOSQUITO-BORNE DISEASES IN THAILAND

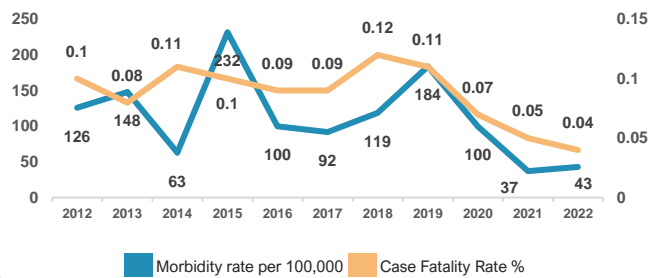


- In Thailand, prevalent mosquito-borne diseases are dengue fever, malaria, chikungunya, and zika virus. The primary vectors responsible for transmission include *Aedes*, *Anopheles*, *Culex*, and *Mansonia* mosquitoes.
- Thailand has previously experienced outbreaks, leading to concerted efforts to control and minimize their impact on public health.
- Notably, the government has implemented proactive measures to address the threat of these diseases, such as mandatory yellow fever vaccinations for tourists, greatly contributing to the reported cases in the country.

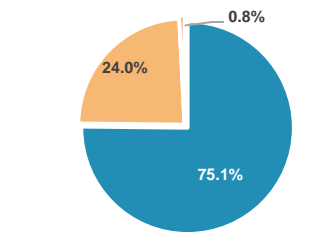
BURDEN OF DENGUE FEVER

Dengue fever in Thailand typically tends to surge in the rainy season between June and August. Dengue cases in Thailand have cyclical patterns, with outbreaks happening every few years.

Dengue transmission in Thailand is associated with refugee influx and tourists. Hence, despite the decreasing trend, a consistent decline has not been observed.



■ Fever ■ hemorrhagic fever ■ shock syndrome



Dengue fever was the most common symptoms, followed by dengue hemorrhagic fever and hock syndrome.

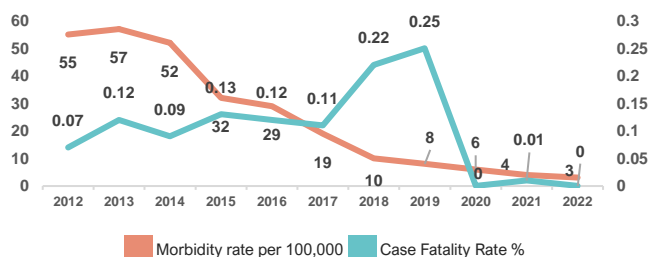
16 median age of patients who contracted dengue

Sector	Cases in 2022
Central region	48,008
North region	36,193
Northeast	33,746
South	25,131
Bangkok	15,627

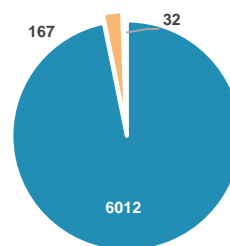
BURDEN OF MALARIA

Malaria morbidity and mortality in Thailand have declined in the last decades due to the strengthen malaria control program headed by the Division of Vector Borne Diseases.

In 2015–16, the multidrug resistant malaria strain increased in Northeast Thailand. Malaria is now an endemic in Thailand, with peak transmission seen during monsoons.



■ *P. vivax* ■ *P. falciparum* ■ Mixed



P. vivax comprises ~96% of occurrence among malaria causing plasmodium.

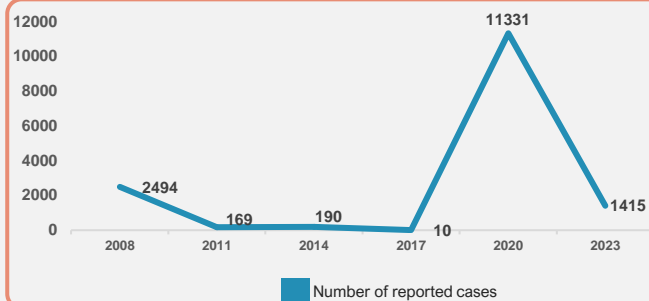
Thailand's national strategic plan for malaria elimination envisages achieving a malaria-free status by 2024.

42/77 provinces achieved malaria-free status in 2022

68% reduction in malaria cases since 2012

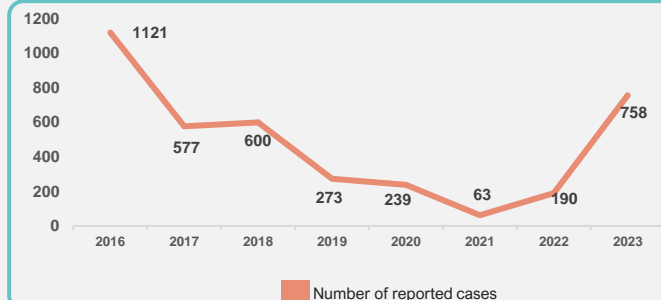
40% decline in malaria deaths since 2012

BURDEN OF CHIKUNGUNYA FEVER



- Chikungunya in Thailand has been mostly controlled, apart from the slight rise in 2022 due to travelers.
- Thailand has experienced **three chikungunya outbreaks**, with the first one in 1958. The strains that caused the outbreak during 2018–20 were from India and Eastern, Central and Southern Africa (ECSA). The morbidity rates of chikungunya in 2019 was 19.73 per 100,000 population but dropped to 1.17 in 2023.

BURDEN OF ZIKA VIRUS



- Since 2022, Thailand experienced a **300% rise** in zika virus cases, mainly affecting the central and north areas of Thailand. Until 2022, an endemic stage was maintained, with occasional increases during rainy periods.
- The disease pattern indicates that zika virus has circulated at a consistently low level for at least 16 years, demonstrating its ability to adapt to persistent endemic transmission. Zika's resurgence coincides with a global dengue outbreak.

Despite a substantial reduction in malaria and chikungunya cases, Thailand still faces a prolonged challenge in completely eradicating dengue and zika. The country's proximity to high-risk nations and the continuous influx of tourists emphasize the need to combat these mosquito-borne diseases.

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- 02 Diagnosis and Treatment Paradigm:** Analysis of diagnosis and treatment algorithm adopted in clinical practice
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- 04 Humanistic, Economic Burden, and Unmet Need Analysis:** Impact of a disease on the patient's mental and economic well-being
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