

Mosquito-Borne Disease in New Zealand

This surveillance report presents information on how the health of New Zealanders is affected by exotic mosquito-borne diseases such as dengue, malaria, chikungunya, Zika, and Ross River virus between 2004 and 2024. It is based on data provided to EHINZ by PHF Science in March 2026.

Key facts

- Mosquito-borne disease notifications increased from 122 in 2023 to 168 in 2024, driven mainly by rises in dengue cases.
- Southeast Asian and Asian countries were common travel destinations for individuals returning to New Zealand with dengue in 2024. Those with malaria had travelled to the Pacific and Africa.
- Higher mosquito-borne disease rates were observed for males and Pacific peoples.
- Mosquito-borne disease rates were different between the least and most deprived quintiles.
- In 2020–24, the Auckland district had a high mosquito-borne disease rate that was more than twice the national rate.

Mosquito-borne and other exotic diseases pose a threat to New Zealand's health

Certain exotic diseases pose a greater risk to the public health of Aotearoa New Zealand because:

- People are not immune, as these diseases do not occur naturally in New Zealand, and vaccines are not readily available.
- They can spread easily and are often difficult to detect.
- They can cause serious illness and can be hard to treat.

High-risk exotic diseases include:

- **Vector-borne diseases** (eg, dengue, malaria, chikungunya, Zika virus, and Ross River virus), which can cause chronic illness and disability (WHO 2020), often with mild or no symptoms, making it difficult to determine the true burden of disease (Duffy et al 2009; Lau et al 2012).
- **Public Health Emergency of International Concern diseases** as classified by the World Health Organisation (see [Overseas infectious diseases of concern](#) for more information).
- **Respiratory diseases**, which can cause serious lung infections (eg, influenza, COVID-19).

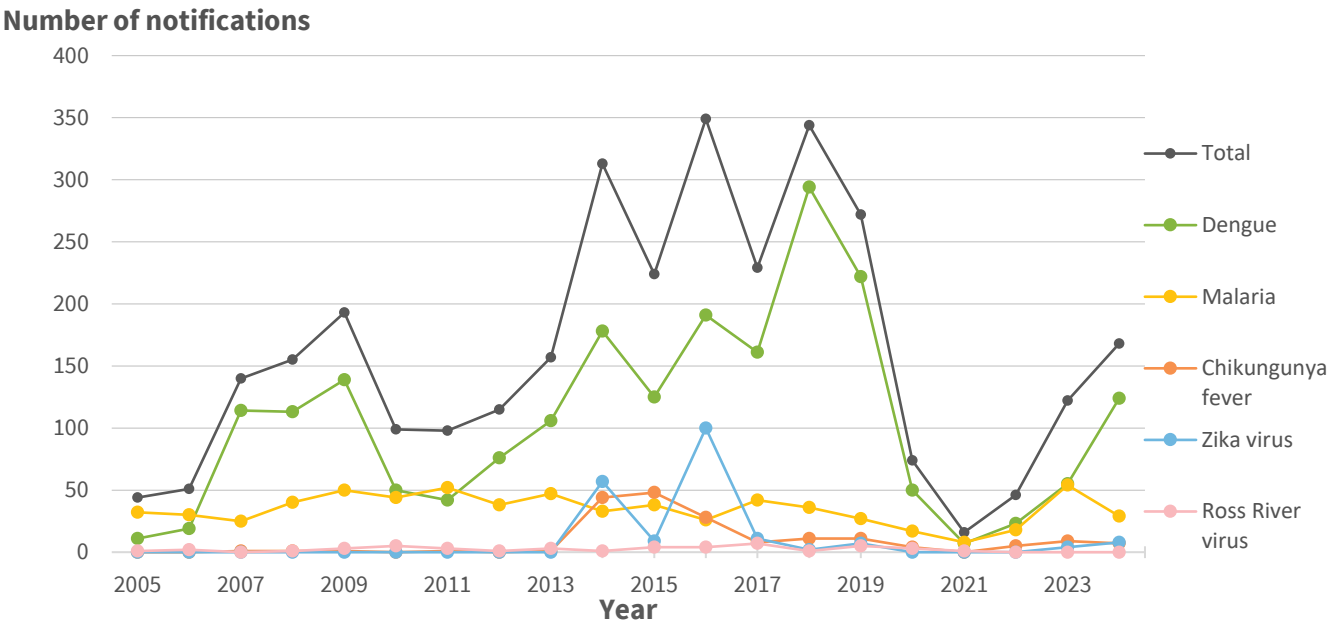
This report focuses on **mosquito-borne diseases (MBD)**, a subset of exotic diseases that pose a growing risk to New Zealand. Although New Zealand currently has no established populations of disease-carrying mosquitoes such as *Aedes aegypti*, *Aedes albopictus*, or *Culex annulirostris* (see Appendix 1), there is still

a real risk that these mosquitoes could become established. While the current climate in New Zealand limits their survival, rising temperatures due to [climate change](#) may allow these mosquitoes to establish and increase the risk of outbreaks, especially in the Auckland and Northland regions (Derraik and Slaney 2007).

Increase in mosquito-borne diseases following a decline in 2021

The number of MBD notifications in New Zealand increased from 122 in 2023 (2.3 per 100,000; 95%CI 1.9–2.8) to 168 in 2024 (3.2 per 100,000; 95%CI 2.7–3.7). Of the 2024 notifications, 124 were dengue fever cases, 29 malaria cases, 7 chikungunya cases, and 8 Zika virus cases (Figure 1). This marks a renewed increase in MBD notifications following a decline in 2021, which was largely due to COVID-19 border restrictions. Dengue has shown a notable increase from 55 in 2023 (1.1 per 100,000; 95%CI 0.8–1.4) to 124 in 2024 (2.3 per 100,000; 95%CI 1.9–2.8) while malaria shows a decrease from 55 in 2023 (1.0 per 100,000; 95%CI 0.8–1.4) to 29 in 2024 (0.5 per 100,000; 95%CI 0.4–0.8).

Figure 1: Number of notifications of mosquito-borne diseases, 2005–2024

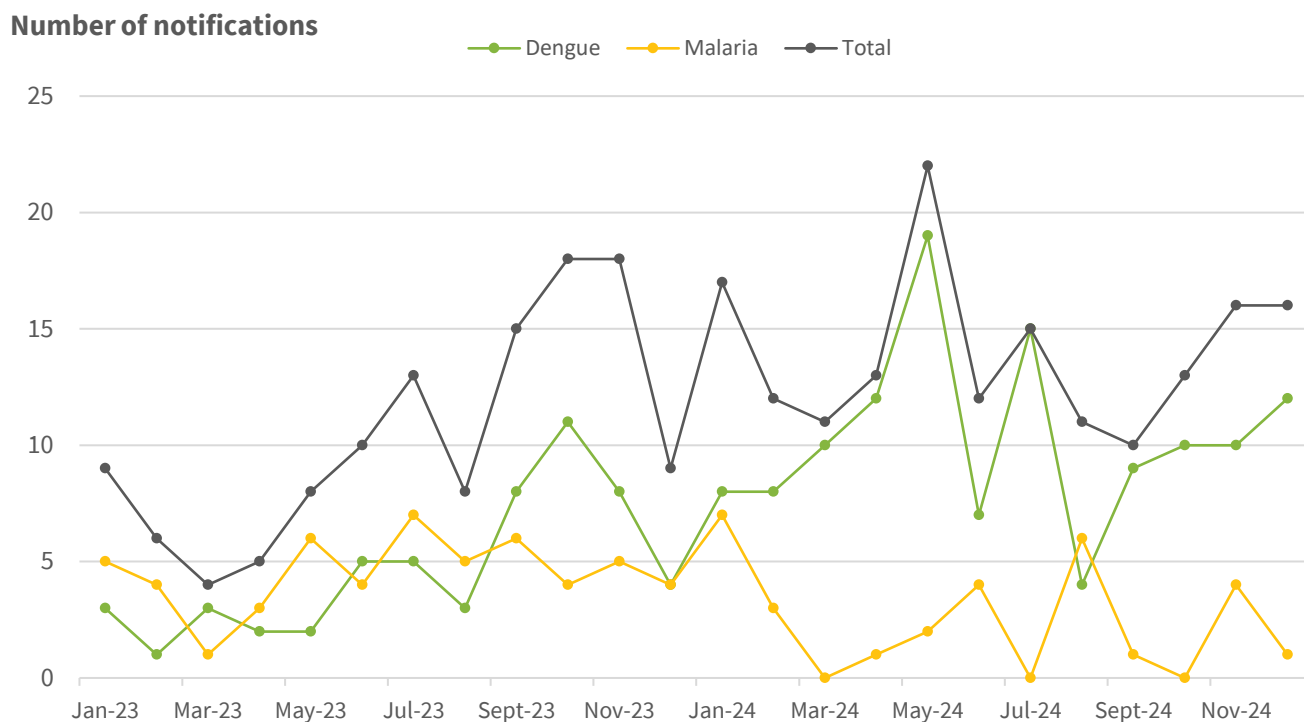


Source: EpiSurv, PHF Science 2026

Gradual rise in mosquito-borne disease cases with late-year peaks in 2023 and 2024

The total number of MBD notifications rose gradually from early 2023 to late 2024, peaking in May 2024, primarily driven by increases in dengue cases. Malaria cases increased from March 2023, then declined from January 2024, and remained lower than dengue cases during most of 2024 (Figure 2).

Figure 2: Number of notifications of mosquito-borne diseases, by month, 2023–2024



Source: EpiSurv, PHF Science 2026

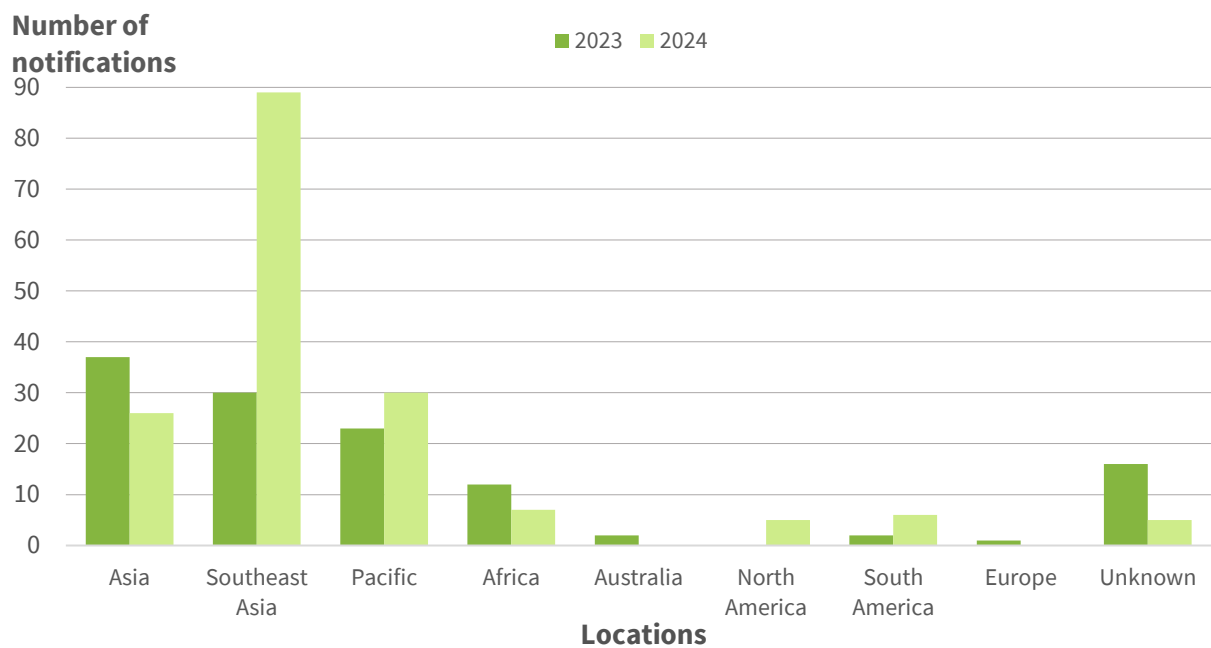
All mosquito-borne disease cases acquired overseas

Between 2023 and 2024, all people diagnosed with a MBD in New Zealand were thought to have acquired it while travelling overseas. Many cases had travelled to multiple countries, making it difficult to determine the exact location of exposure. As a result, all countries visited by travellers prior to diagnosis are included (Figure 3).

The most commonly visited regions prior to diagnosis were:

- Southeast Asia (119 cases)
- Asia (63 cases)
- Pacific (53 cases)
- Africa (19 cases).

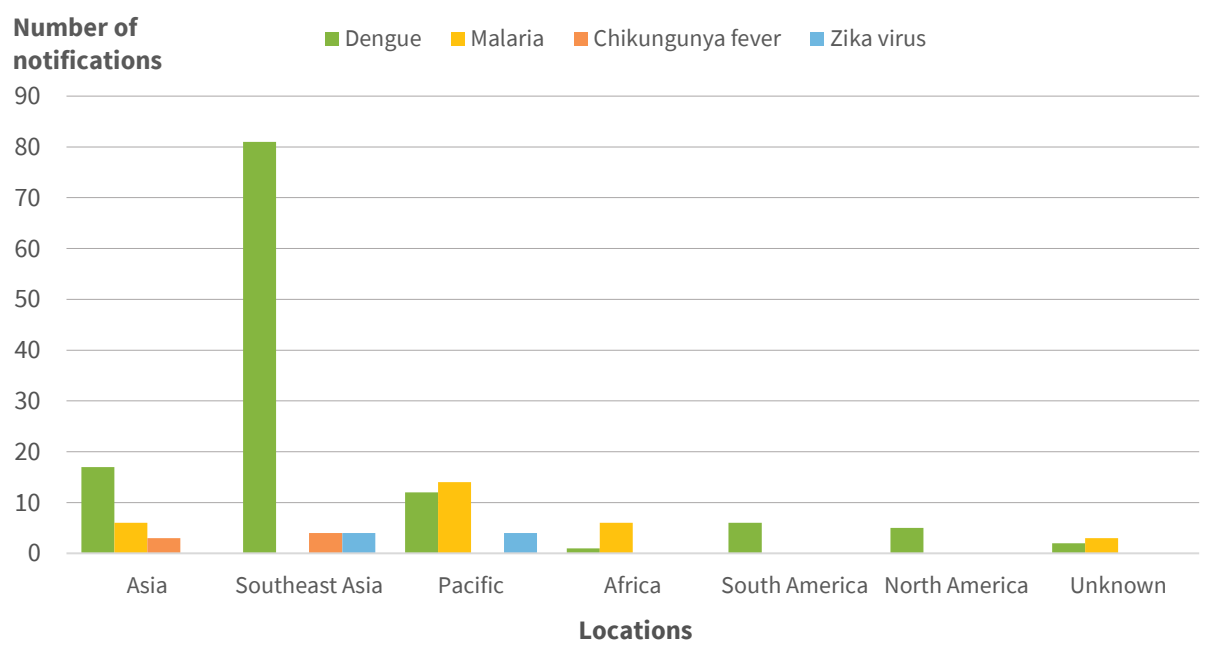
Figure 3: Number of mosquito-borne disease notifications, by locations visited by New Zealand travellers prior to diagnosis, 2023–2024



Source: EpiSurv, PHF Science 2026

In 2024, dengue (124 cases) and malaria (29 cases) were the most commonly reported MBDs. For dengue, 81 cases had recently travelled in Southeast Asia (60 from Indonesia and 11 from Thailand) and 17 from Asia (with 11 recently returning from India) (Figure 4).

Figure 4: Number of mosquito-borne disease notifications, by locations visited by New Zealand travellers prior to diagnosis, 2024



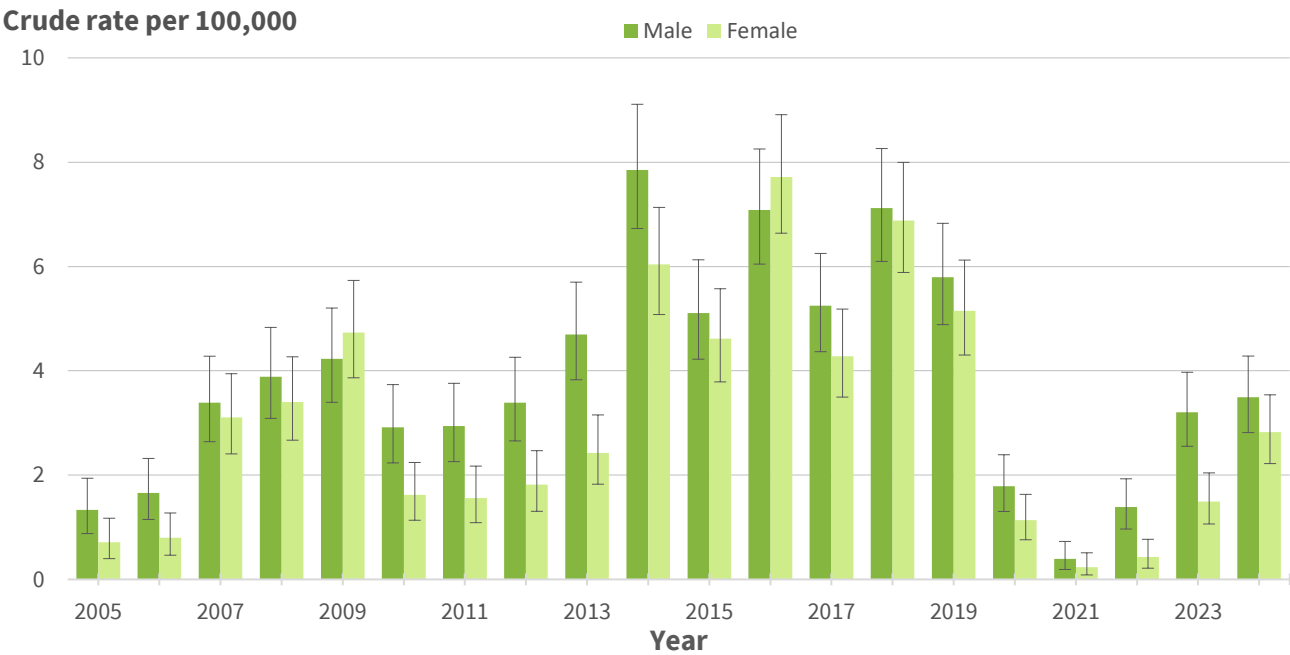
Source: EpiSurv, PHF Science 2026

Of the 29 malaria cases, 14 recently returned from the Pacific, including 7 from Papua New Guinea and 7 from the Solomon Islands. There were also 6 cases of malaria in people who had recently travelled in Africa. There were 7 cases of chikungunya, with 3 people having recently returned from India and 4 from Southeast Asia. Eight cases of Zika virus were reported, including 4 from Thailand, 1 from Fiji, and 1 from Solomon Islands.

Males consistently have higher mosquito-borne disease rates than females

From 2005 to 2024, males consistently had higher rates of MBD than females in New Zealand (Figure 5). After peaking in 2016, rates for both genders declined, reaching their lowest point in 2021. Since then, there has been a slight increase, though rates remain relatively low compared to earlier years. The gender gap persists, with males continuing to show higher rates than females.

Figure 5: Mosquito-borne disease notification rate, by sex, 2005–2024

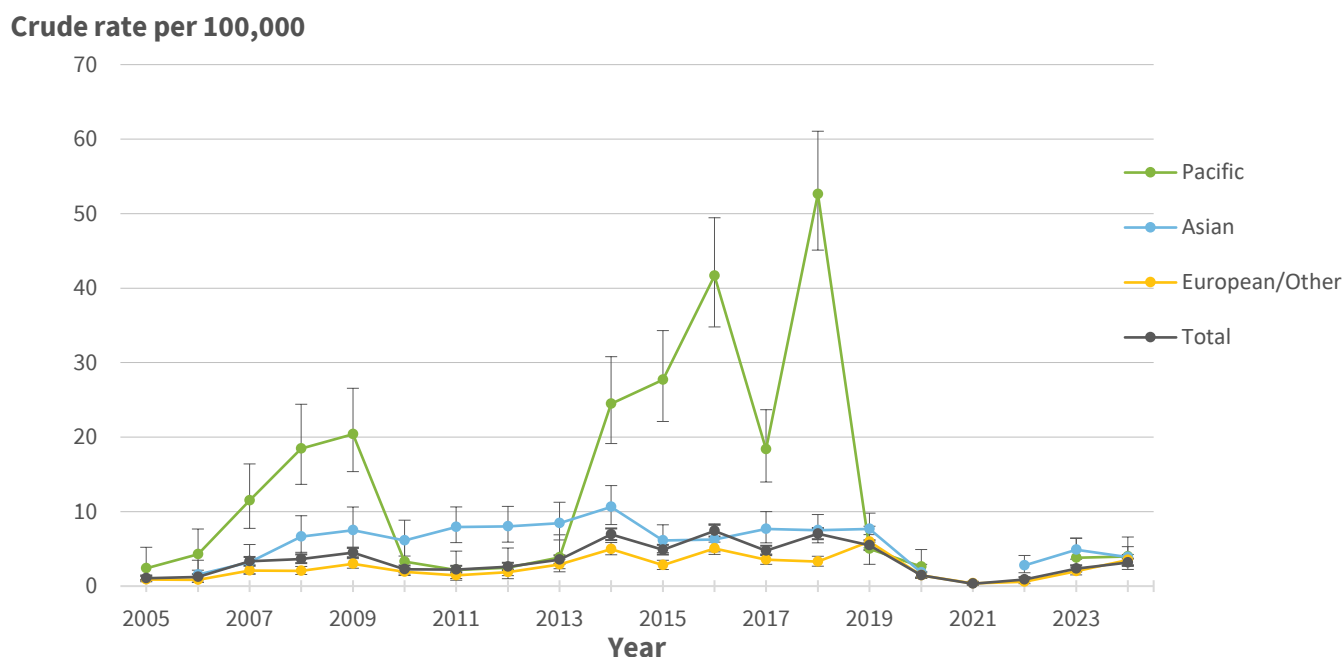


Note: 95% confidence intervals have been shown as vertical bars.
Source: EpiSurv, PHF Science 2026

Mosquito-borne disease rates are often highest among Pacific peoples

Since 2005, Pacific peoples have consistently had the highest rates of MBD in New Zealand compared to other ethnic groups (Figure 6). After peaking in earlier years, their rates dropped sharply in 2019, largely due to a decrease in dengue cases (from 170 to 13), and have remained relatively low since. By 2024, however, the Asian population reported a similar rate (3.9 per 100,000; 95%CI 2.8–5.3) as Pacific peoples(4.0 per 100,000; 95%CI 2.2–6.6).

Figure 6: Mosquito-borne disease notification rate, by ethnic group (prioritised), 2005–2024



Note 1: 95% confidence intervals have been presented as vertical bars.

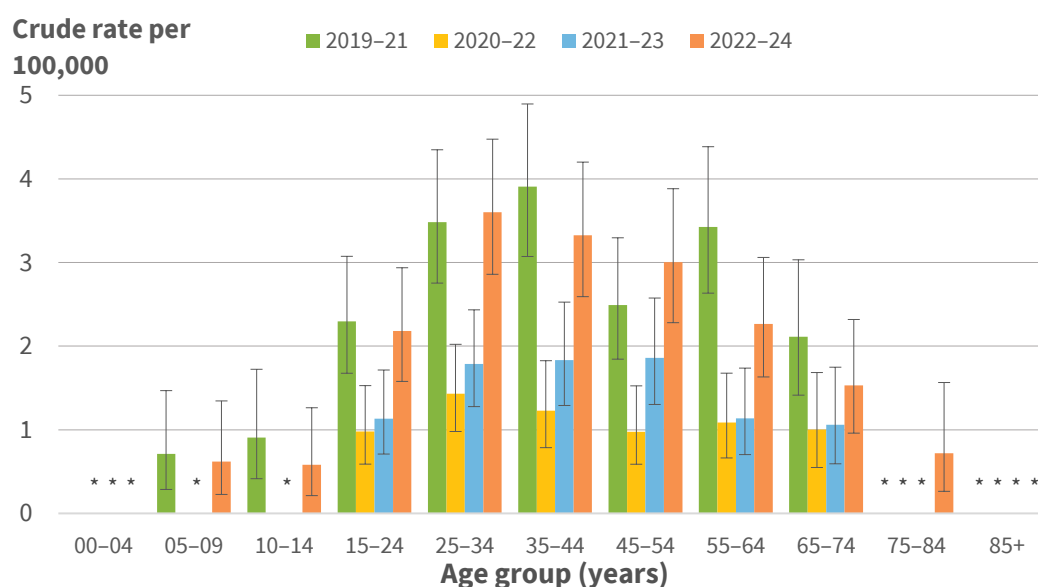
Note 2: Māori rates have been suppressed due to low numbers (count <5).

Source: EpiSurv, PHF Science 2026

Recent years show similar mosquito-borne disease rates across age groups

In 2022–24, MBD rates were highest among people aged 25–54 years (Figure 7). The rates in 2020–22 and 2021–23 were relatively similar across age groups, indicating a recent shift from being evenly distributed to being concentrated among those aged 25–54.

Figure 7: Mosquito-borne disease notification rate, by age group, 2019–21 to 2022–24



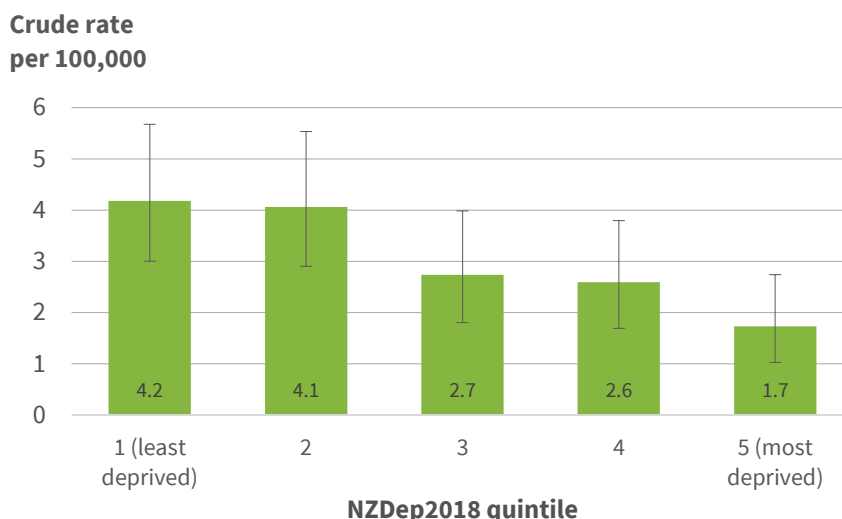
Note: 95% confidence intervals have been presented as vertical bars. An asterisk (*) shows that the rate has been suppressed due to low numbers (count <5).

Source: EpiSurv, PHF Science 2026

Mosquito-borne disease rates were different between the least and most deprived quintiles

In 2024, there were statistically significant differences in MBD notification rates between the least and most deprived quintiles, with an SRR of 0.43 (95% CI 0.24–0.76) (Figure 8).

Figure 8: Mosquito-borne disease notification rate, by NZDep2018 quintiles, 2024



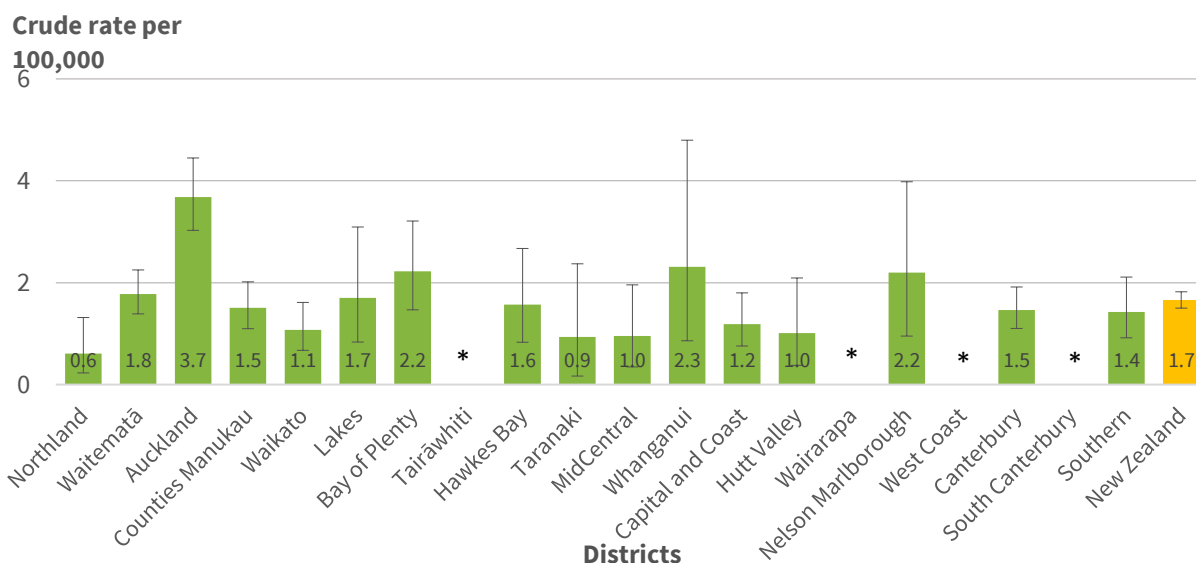
Note: 95% confidence intervals have been presented as vertical bars.

Source: EpiSurv, PHF Science 2026

Auckland district had a high mosquito-borne disease rate

In 2020–24, people living in the Auckland district had a notification rate of MBD (3.7 per 100,000; 95%CI 3.0–4.5) more than twice the national average (Figure 9). Possible to increase space here?

Figure 9: Rate of mosquito-borne disease notification, by district, 2020–24



Note 1: The 95% confidence intervals have been presented as error bars. An asterisk (*) shows that the rate has been suppressed due to low numbers (count <5). Note 2: This graph does not represent local transmission, as all mosquito-borne cases were contracted during international travel.

Source: EpiSurv, PHF Science 2026

Data for this indicator

This indicator is an analysis of the most recent data available from the EpiSurv notifications surveillance database, provided to EHINZ by the Public Health and Forensic Science (PHF Science – formerly ESR) in March 2026. The Institute for Environmental Science and Research (ESR) changed its name to the New Zealand Institute for Public Health and Forensic Science (PHF Science) on July 1 2025.

Notifications only cover those people who visited a GP or received hospital treatment, and therefore may underestimate the true rate of disease in the population.

For additional information, see the [Metadata](#) sheet.

References

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Appendix 1: High-risk exotic mosquitoes of concern to New Zealand's public health

Species	Global distribution	Diseases transmitted	Affinity for humans and environment
<i>Aedes aegypti</i>	All major continents, including Australia, Southeast Asia and most Pacific Island countries.	Dengue, yellow fever, Zika and multiple other mosquito-borne diseases (MBDs).	Feeds on humans rather than other animals when possible. Thrives in urban environments.
<i>Aedes albopictus</i>	Many Southeast Asian and Pacific Island countries, the Americas and Europe	Dengue, chikungunya, Japanese encephalitis, Ross River Virus, and yellow fever.	Feeds on humans rather than other animals when possible. Common in urban environments.
<i>Culex annulirostris</i>	Australia, and many Southeast Asian and Pacific Island countries.	Murray Valley encephalitis, Japanese encephalitis. Capable vector for multiple other MBDs.	Opportunistic feeder on mammals. Breeds in urban and rural settings.

Source: NZ Biosecure 2023

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