Information topic	Details
Indicator name	**Mosquito-borne disease in New Zealand**
Domain and topic	Border Health domain: Mosquito-borne disease in New Zealand
Indicator definition and units	The number and rate of notifications of mosquito-borne disease. Rates are presented per 100,000 population.
Data source	National database of notifiable diseases (EpiSurv), from PHF Science (NZ Institute for Public Health and Forensic Science).
Numerator	Number of notifications of mosquito-borne disease in New Zealand.
Denominator	• Notification rate: population estimates (Statistics NZ) • Notification rate by NZDep: NZDep2018 Index of Deprivation (Atkinson et 2021).
Methodology	**Data collection** Mosquito-borne disease is notifiable in New Zealand. All cases diagnosed by doctors and/or laboratories are required to be notified to the Medical Officer of Health in the region, who notifies the case to the national data collection (EpiSurv) administered by PHF Science, or directly to EpiSurv for further investigation. **Confidence Interval** 95% confidence intervals were calculated based on the methodology outlined in APHO (2008). Confidence intervals are presented as vertical bars on graphs. **Interpreting graphs** Crude rates are suppressed for counts less than 5 or populations less than 30, due to unreliability of the estimate with small numbers. When comparing groups of varying population sizes, differences that involve small groups may not be statistically significantly different, compared with similar differences for larger groups. This is due to a higher variability associated with the rate of the small group. For a more detailed explanation of this issue, see Appendix 2 – EHINZ Analytical Toolkit & Glossary. Prioritised ethnic groups have been used in the following prioritisation order: Māori, Pacific peoples, Asian, European/Other.
Time period and time scale	Annual data, from 2004 to the most recent data available. Aggregations of data across years were used for comparative analysis between specific subgroups due to small numbers in recent years.
Population coverage	New Zealand usually resident population.

Spatial coverage	Nationally, with regional results available by district (formerly District Health Board areas).
Measures of frequency	Results are presented by year, month, origin of disease, sex, age group, prioritised ethnicity, NZDep2018 decile, and district.
Limitations of indicator	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. Some diseases, including mosquito-borne diseases, can have a high proportion of asymptomatic or mild associated infection (Duffy et al 2009). Case under detection is likely for exotic diseases. New Zealand can only identify diseases which are currently notifiable, which health practitioners know to look for, and for which we have current national diagnostic capacity. All reported cases to date have been acquired overseas, meaning the indicator reflects patterns in international travel and exposure rather than local disease transmission. Annual notification counts may be small for some subgroups, making statistical trend analysis unfeasible.
Related indicators	Overseas infectious diseases of priority concern to New Zealand High-risk insects caught at New Zealand's border Exotic mosquito species established in New Zealand
For more information	PHF Science. Notifiable disease summaries: Available from https://www.phfscience.nz/expertise/infectious-disease/infectious-disease-intelligence-surveillance/#Surveillancereports
References	APHO. 2008. Technical Briefing 3: Commonly used public health statistics and their confidence intervals. York, UK: Association of Public Health Observatories. Atkinson J, Salmond C, & Crampton P. 2020. *NZDep2018 index of deprivation*. Wellington: Department of Public Health, University of Otago. Duffy MR, Chen TH, Hancock WT, et al. 2009. Zika virus outbreak on Yap Island, Federated States of Micronesia. *The New England Journal of Medicine* 360: 2536 – 43.