



# NOTIFIABLE DISEASES IN NEW ZEALAND ANNUAL REPORT 2024

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# SUMMARY

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This report provides a summary of the key trends in notifiable diseases for 2024.

In 2024, a total of 179,256 notifications were reported through New Zealand's notifiable disease database, EpiSurv, compared with 432,669 in 2023. COVID-19 accounted for 91.3% of notifications or 163,718 cases in 2024 and 96.8% of notifications in 2023. Excluding COVID-19, there were 15,538 notifications in 2024 and 13,908 in 2023.

Notifications of the following diseases increased significantly from 2023 to 2024: cryptosporidiosis, dengue fever, hepatitis A, mpox, pertussis, and tuberculosis (Table 1). Notifications of campylobacteriosis, COVID-19, legionellosis, leptospirosis, malaria, measles, paratyphoid fever and yersiniosis decreased significantly.

## VACCINE-PREVENTABLE DISEASES

There was a significant increase in pertussis from 2023 to 2024. There were 1748 cases (32.7 per 100,000) notified in 2024, compared with 141 cases (2.7 per 100,000) in 2023. Infants aged less than 1 year (207.4 per 100,000) had the highest notification rate and almost two thirds (65%) of cases aged less than 1 year were hospitalised. One death due to pertussis was reported in 2024, in an infant aged less than 1 year.

There was a significant decrease in measles. One measles case was notified in 2024, compared with 14 cases in 2024. The case was an adult who had travelled to Vietnam during the incubation period. The case's vaccination status was unknown.

## ENTERIC DISEASES

There were significant increases from 2023 to 2024 for cryptosporidiosis and hepatitis A. There were 1234 cases (23.1 per 100,000) of cryptosporidiosis in 2024, compared with 831 (15.8 per 100,000) in 2023. Children aged 1–4 years (98.8 per 100,000) had the highest notification rate. Recreational water contact and contact with farm animals were the most common risk factors reported for cryptosporidiosis.

There were 68 cases (1.3 per 100,000) of hepatitis A notified in 2024, compared with 34 cases (0.6 per 100,000) in 2023. Forty-one cases (61%) had travelled overseas during the incubation period, with India being the most visited country. Of the cases that did not travel overseas, eight were linked to an outbreak at a childcare centre.

There were significant decreases in campylobacteriosis, paratyphoid fever and yersiniosis. There were 5801 cases (108.7 per 100,000) of campylobacteriosis and 1140 cases (21.4 per 100,000) of yersiniosis notified in 2024, compared with 6092 cases (116.1 per 100,000) of campylobacteriosis and 1408 cases (26.8 per 100,000) of yersiniosis in 2023. Consumption of food from retail premises and contact with farm animals were the most common risk factors reported for both campylobacteriosis and yersiniosis.

There were 14 cases (0.3 per 100,000) of paratyphoid fever notified in 2024, compared with 28 cases (0.5 per 100,000) in 2023. All 14 cases had travelled overseas with most having been in India (12 cases).

## ENVIRONMENTAL DISEASES

There was a significant decrease in legionellosis notifications in 2024, with 183 cases (3.4 per 100,000) notified, compared with 238 cases (4.5 per 100,000) in 2023. Adults aged 70 years and over had the highest notification rate (12.9 per 100,000). One death was reported in a case aged 70 years and over. The majority (83%) of cases reported exposure to known environmental risk factors.



## RESPIRATORY DISEASES

There was a significant decrease in COVID-19 notifications in 2024, with 163,718 cases (3067 per 100,000) notified, compared with 418,761 cases (7984 per 100,000) in 2023. Adults aged 70 years and over had the highest notification rate (5326 per 100,000).

## VECTOR-BORNE DISEASES

There was a significant increase in dengue fever notifications in 2024. There were 124 cases (2.3 per 100,000) of dengue fever notified in 2024, compared with 55 cases (1.0 per 100,000) in 2023. The countries most commonly visited were Indonesia (61 cases), India (11 cases), Thailand (11 cases) and French Polynesia (8 cases).

There was a significant decrease in malaria notifications in 2024. There were 29 cases (0.5 per 100,000) of malaria in 2024, compared with 54 cases (1.0 per 100,000) in 2023. The countries most commonly visited were the Solomon Islands and Papua New Guinea (7 cases each).

## ZOONOTIC DISEASES

There was a significant decrease in leptospirosis in 2024, with 101 cases (1.9 per 100,000) notified, compared with 170 (3.2 per 100,000) in 2023. Over half (52%) of the cases were engaged in occupations considered high risk for exposure to *Leptospira* spp. or that involved contact with contaminated environments.

## OTHER DISEASES

There was a significant increase in mpox notifications in 2024 with 23 cases notified, compared with eight cases in 2023. All 23 cases were men who have sex with men. Six cases acquired their infection overseas.

There was a significant increase in tuberculosis cases, with 365 cases (6.8 per 100,000) notified in 2024, compared with 305 cases (5.8 per 100,000) in 2023. Adults aged 30–39 years had the highest notification rate (12.0 per 100,000). The majority (91%) of tuberculosis cases were born overseas. Six tuberculosis deaths were reported in 2024.

**Table 1. Number of cases and rate per 100,000 population for selected notifiable diseases in New Zealand, 2023 and 2024**

Disease	Number of notifications		Rate per 100,000		Change <sup>a,b</sup>
	2023	2024	2023	2024	
Campylobacteriosis	6092	5801	116.1	108.7	↓
COVID-19	418761	163718	7984.0	3066.7	↓
Cryptosporidiosis	831	1234	15.8	23.1	↑
Dengue fever	55	124	1.0	2.3	↑
Gastroenteritis (acute) <sup>c</sup>	462	440	8.8	8.2	↓
Giardiasis	898	844	17.1	15.8	↓
Hepatitis A	34	68	0.6	1.3	↑
Hepatitis B <sup>d</sup>	19	12	0.4	0.2	↓
Hepatitis C <sup>d</sup>	31	20	0.6	0.4	↓
Invasive pneumococcal disease	757	718	14.4	13.4	↓
Legionellosis	238	183	4.5	3.4	↓
Leptospirosis	170	101	3.2	1.9	↓
Listeriosis	37	36	0.7	0.7	↓
Malaria	54	29	1.0	0.5	↓
Measles	14	1	0.3	0.0	↓
Meningococcal disease	57	43	1.1	0.8	↓
Mpox	8	23	0.2	0.4	↑
Mumps	16	19	0.3	0.4	↑
Paratyphoid fever	28	14	0.5	0.3	↓
Pertussis	141	1748	2.7	32.7	↑
Rheumatic fever <sup>e</sup>	183	208	3.5	3.9	↑
Salmonellosis	827	844	15.8	15.8	↑
Shigellosis	122	157	2.3	2.9	↑
STEC infection	1005	1115	19.2	20.9	↑
Tuberculosis disease	305	365	5.8	6.8	↑
Typhoid fever	71	63	1.4	1.2	↓
Yersiniosis	1408	1140	26.8	21.4	↓

<sup>a</sup> ↓ = significant decrease, ↑ = significant increase, ↓ = non-significant decrease, ↑ = non-significant increase.

<sup>b</sup> Fisher's exact tests were used to determine statistical significance. Results are considered statistically significant when  $P \leq 0.05$ .

<sup>c</sup> Cases of acute gastroenteritis from a common source or person in a high-risk category (eg food handler or childcare worker) or foodborne intoxication, eg, staphylococcal intoxication.

<sup>d</sup> Only acute cases of this disease are notifiable.

<sup>e</sup> Includes rheumatic fever initial episodes and recurrent cases.

# INTRODUCTION

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The *Notifiable Diseases in New Zealand: Annual Report 2024* gives an overview of the state of notifiable diseases in New Zealand in 2024. The report includes diseases that are notifiable under the Health Act 1956.

The data presented is from surveillance systems operated by the New Zealand Institute for Public Health and Forensic Science (PHF Science) and from other organisations in New Zealand.

Surveillance is “the ongoing systematic collection, analysis and interpretation of outcome-specific data for use in the planning, implementation and evaluation of public health practice”.<sup>[1]</sup> A surveillance system “includes the functional capacity for data collection and analysis, as well as the timely dissemination of information derived from these data to enable effective prevention and control activities”.<sup>[2]</sup>

Surveillance provides *information for action*. Specific objectives for disease surveillance may include the following:<sup>[3]</sup>

- to identify cases of disease that require immediate public health control measures;
- to monitor disease incidence and distribution and alert health workers to changes in disease activity in their area;
- to identify outbreaks and support their effective management;
- to assess disease impact and help set priorities for prevention and control activities;
- to identify risk factors for disease to support development of effective prevention measures;
- to evaluate prevention and control activities;
- to identify and predict emerging hazards;
- to monitor changes in disease agents through laboratory testing;
- to generate and evaluate hypotheses about disease occurrence;
- to fulfil statutory and international reporting requirements.

Details about the individual surveillance systems are provided in the ‘Surveillance Methods’ section of this report.

The report focuses on diseases notified in 2024. The report presents each notifiable disease, or disease grouping, in alphabetical order.

National data and trends over time are shown in summary tables in the Appendix. Data is also presented for specific population groups including by health district, sex, age group and ethnic group.

Information on influenza-like illness and sexually transmitted infections can be found in separate reports on the [PHF Science website](#).

# SURVEILLANCE METHODS

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## INTERPRETING DATA

Data in this report is presented by the date the case was reported to a public health service (PHS) and not by the date of the onset of illness. In general, cases are allocated to geographic location based on where a medical practitioner first diagnosed them.

Notifiable disease data in this report may differ from that published in other reports depending on:

- the date of data extraction from EpiSurv;
- the date used to aggregate data (eg, the date reported or date of onset of illness);
- whether laboratory-reported cases, notified cases or self-reported cases are used;
- whether the case has been confirmed by laboratory tests.

The information in this report shows disease trends by age group, sex, ethnic group and health district.

It should be noted that various factors influence disease notification and therefore the calculation of incidence rates. Where the illness is not severe, cases are less likely to consult a medical practitioner and, even if diagnosed, are less likely to be notified without laboratory confirmation.[4] Issues associated with the cost of and access to healthcare may also determine whether people visit healthcare providers for diagnosis.[5] Public awareness of the disease, case definitions and the resources and priorities of local healthcare services are other factors that affect disease notification rates.

This report presents the number of cases and population rates for different ethnic groups. However, caution should be exercised in the interpretation of these numbers as ethnicity information is not always provided, different ethnic groups have different patterns of access to healthcare, and the numbers may not accurately reflect the true burden of disease in the population.

For different ethnic groups, numbers and disease rates are based on a prioritised classification of ethnicity, with the Māori ethnic group prioritised first, followed by Pacific peoples, Asian, Middle Eastern/Latin American/African (MELAA) and European or Other (including New Zealander) ethnic groups. A disadvantage of using prioritised ethnicity is that people who identify with more than one ethnic group can be placed into a group they may not self-identify with. Furthermore, prioritisation undercounts non-Māori ethnic groups. This has been found to be most significant for Pacific peoples.[6] This undercount may generate an age-related bias, as the reporting of multiple ethnic groups is more common in younger age groups.[7].

The small New Zealand population and the low number of cases for some diseases mean that the disease rates calculated in this report may be highly variable from year to year. As such, it is necessary to interpret trends with caution. The 'Analytical Methods' section contains more information about the calculation of population rates for diseases.

## DATA SOURCES

The key sources of data used in this report are described below.

### EpiSurv – the national notifiable disease surveillance system

Under the Health Act 1956, health professionals are required to inform their local medical officer of health of any notifiable disease that they suspect or diagnose. Since December 2007, diagnostic laboratories have also been required to report notifiable diseases to medical officers of health. These notifications provide the basis for surveillance, and therefore control, of these diseases in New Zealand.

Notification data is entered by PHS staff via a secure web-based portal into a database (EpiSurv). PHF Science collates and analyses the near real-time data on behalf of the Ministry of Health. The data collected depends on the specific disease, but usually includes demography, outcome, basis of diagnosis, risk factors and some case and contact management information. Data in EpiSurv dates back to January 1997. For the current schedule of notifiable diseases see Schedule 1 Part 1 of the [Health Act 1956](#).

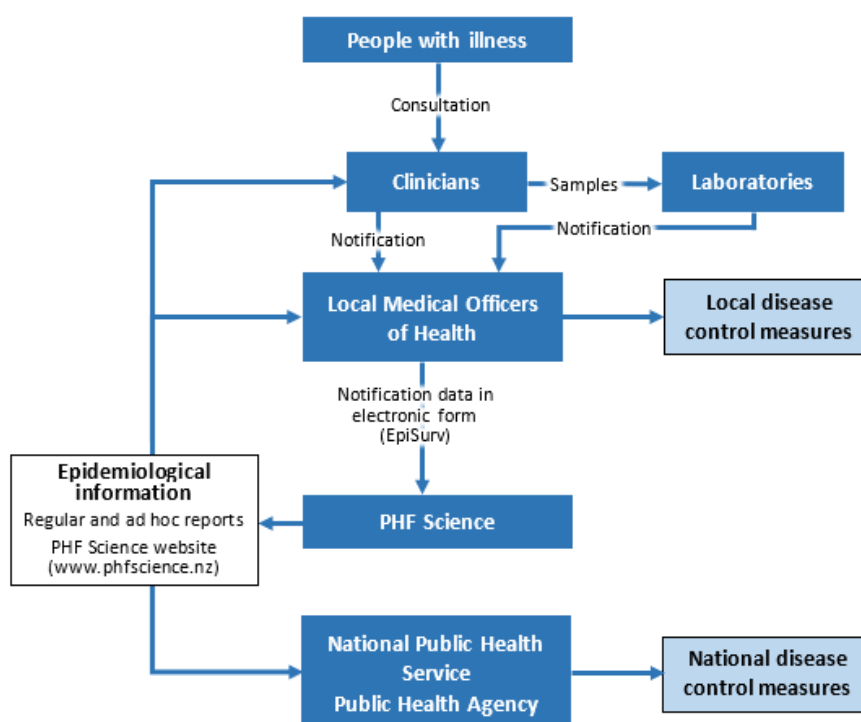
This report includes sections on diseases that are currently notifiable in New Zealand under the Health Act 1956, excluding AIDS, gonorrhoea, HIV, syphilis, lead absorption and poisoning arising from chemical contamination of the environment. Sexually transmitted infections are reported elsewhere, while Massey University's Centre for Public Health Research is responsible for the collection and reporting of surveillance data on lead absorption and poisoning arising from chemical contamination of the environment.

Case definitions (including laboratory and clinical criteria) for notification of diseases and/or conditions are in the latest version of the [Communicable Disease Control Manual](#).<sup>[8]</sup>

Information on trigger points for notification of a laboratory test result is in [Appendix 4](#) of the Communicable Disease Control Manual.<sup>[8]</sup>

Figure 1 illustrates the major components and information flow of the notifiable disease surveillance system. Since July 2022, provision of public health services has been the responsibility of Health New Zealand.

**Figure 1. Notifiable disease surveillance system**



## Laboratory-based surveillance

Laboratory results for all organisms that meet the laboratory criteria for notification are reported directly to medical officers of health. After further testing at a reference laboratory, some reported cases may not meet the laboratory criteria of the surveillance case definition. Laboratory-reported cases may also not meet the clinical criteria of the case definition. For this reason, the number of laboratory-reported cases may not match the number of notified cases for some diseases.

Laboratory-based surveillance may be conducted to enhance data gathered by notifiable disease surveillance. Organisms under laboratory-based surveillance include *Legionella* spp., *Leptospira* spp, *Neisseria meningitidis*, *Salmonella* spp. and invasive *Streptococcus pneumoniae*. For these organisms, isolates are referred to a reference laboratory for confirmation and typing.

## Statistics New Zealand

Statistics New Zealand provides the denominator data used to calculate the population rates of disease. Further details are provided in the 'Analytical Methods' section.

## National Minimum Dataset

Health New Zealand collates national data on patients discharged from publicly funded hospitals. This data is stored as part of the National Minimum Dataset (NMDS) (see [www.tewhaturora.govt.nz](http://www.tewhaturora.govt.nz) for more information). Upon discharge, patients are assigned disease codes using the 10<sup>th</sup> revision of the International Classification of Diseases (ICD10) coding system.[9] Information provided in this report uses the principal or primary diagnosis, which is the condition that was chiefly responsible for the hospital admission. This may be different from the diagnoses for the patient on admission, while in hospital, or from the final diagnosis after discharge.

Anonymised data for selected diseases was extracted from the NMDS and sent to PHF Science for analysis and comparison with data from other surveillance systems.

Hospital discharge data presented in this report includes multiple records for patients with chronic notifiable diseases (eg, tuberculosis), for diseases that have long-term health impacts (eg, meningococcal disease) and may include re-admissions for acute diseases (eg, pertussis). For some diseases, the criteria for notification (clinical and laboratory or epidemiological evidence) do not match those required for diagnostic coding. For these reasons, the NMDS and EpiSurv hospitalisation numbers may differ.

EpiSurv uses the same [definition for hospitalisations](#) as the NMDS: healthcare users who receive assessment and/or treatment for three hours or more (excluding time in a waiting room and triage), or who have a general anaesthetic.

## New Zealand Creutzfeldt-Jakob Disease Registry

The New Zealand Creutzfeldt-Jakob disease (CJD) Registry (the Registry), at the University of Otago was established in 1996 to monitor sporadic, familial, iatrogenic and variant CJD. A medical practitioner must immediately report any suspected cases of CJD directly to the Registry as well as inform the local Medical Officer of Health. Any cases suspected of being iatrogenic or variant CJD are also notified to the Director of Public Health at the Ministry of Health.[8]

## New Zealand Paediatric Surveillance Unit

The New Zealand Paediatric Surveillance Unit (NZPSU) [10] was established in 1997 to provide active surveillance of acute flaccid paralysis (AFP) to fulfil World Health Organization (WHO) requirements for the certification of polio eradication. Since then, other conditions have been added for surveillance by the NZPSU. Conditions currently under surveillance include acute hepatitis, congenital rubella syndrome (CRS), COVID-19 and perinatal exposure to syphilis and human immunodeficiency virus (HIV) (see <http://www.otago.ac.nz/nzpsu> for a complete list).

Every month, participating paediatricians and other specialists in paediatric practice are sent an email with a linked REDCap survey to report whether they have seen any children with the conditions under surveillance in the previous month. In 2023, there were between 262 and 303 clinicians participating in the surveillance programme with an average monthly response rate of 66%.[11] The NZPSU then collates and analyses the data. Information from the NZPSU is used in this report to enhance notification data on polio (AFP data) and rubella (CRS data).

## ANALYTICAL METHODS

Key analytical methods are provided below.

### Dates

The notification data contained in this report is based on information recorded on EpiSurv as at 24 February 2025. Changes made to EpiSurv data by PHS staff after this date are largely not reflected in this report. Consequently, future analyses of data may produce revised results. Notification data from previous years has been updated to reflect cases in EpiSurv as at 24 February 2025.

Disease numbers are reported according to the date of notification. Laboratory results are reported according to the date the specimen was received.

### Geographic breakdown

This report provides rates for health districts. The health district populations used are shown in Table 2. These are from the Statistics New Zealand 2024 mid-year population estimates.

**Table 2. Health district populations, 2024**

Health district	Population
Northland	204,800
Waitemata	675,100
Auckland	511,100
Counties Manukau	638,900
Waikato	471,300
Lakes	120,400
Bay of Plenty	281,300
Tairāwhiti	53,300
Taranaki	131,000
Hawke's Bay	185,300
Whanganui	70,300
MidCentral	194,500
Hutt Valley	163,500
Capital & Coast	324,900
Wairarapa	52,000
Nelson Marlborough	167,600
West Coast	34,800
Canterbury	628,200
South Canterbury	64,800
Southern	365,400
<b>Total</b>	<b>5,338,500</b>



## Map classification scheme

On the maps provided in this report, the darkest colour represents the highest disease notification rates, and the lightest colour represents the lowest rates. The dark grey colour shows where there was insufficient data (fewer than five cases) to calculate a rate.

## Case classification for notifications

All notifications recorded in EpiSurv that meet the case definitions [8], apart from cases classified as 'not a case', are included for analysis in this report. In some instances, the investigation of a case may not be complete, and the classification may be set to 'under investigation'. Cases that are under investigation are included in this report. Any changes to the final case classification will be reflected in future surveillance reports.

## Population rate calculations for diseases

The denominator data used to determine disease rates (except the data used to determine disease rates for ethnic groups) has been derived from the 2024 mid-year population estimates published by Statistics New Zealand.

Denominator data used to determine disease rates for ethnic groups is based on the proportion of people in each ethnic group from the 2018 'estimated resident population' applied to the 2024 mid-year population estimates from Statistics New Zealand. Ethnicity is prioritised in the following order: Māori, Pacific peoples, Asian, MELAA, European or Other (including New Zealander) ethnic groups.

Rates are not calculated where a category has fewer than five notified cases. Calculating population rates from fewer than five cases produces unstable rates.

## Percentages

Percentages are calculated using the total number of cases for which the information was known as the denominator, unless specified otherwise. Cases with 'unknown' information are excluded from the denominator. These percentages are usually presented with numbers in brackets that show the numerator and denominator used, eg, 49.3% (523/1061).

## Risk factors and sources of infection

For many diseases, an analysis of exposure to risk factors for the cases is reported. These risk factors are those included in the current EpiSurv case report forms. More than one risk factor is often reported for each case. The reporting of exposure to a risk factor does not mean that this was the source of the infection.

## Vaccination data

Data on vaccinations is reported for a number of vaccine-preventable diseases. This represents the vaccination status of the case as reported in EpiSurv and has not been routinely validated against the Aotearoa Immunisation Register.

## Statistical tests

Fisher's exact tests were used to determine statistical significance. Results are considered to be statistically significant where  $P \leq 0.05$ .



# LIMITATIONS OF SURVEILLANCE DATA

## Quality

Quality assurance in the collection and reporting of notifiable disease data in EpiSurv is supported by validation at the time of data entry (eg, field validation, allowable values), regular (weekly, monthly, quarterly, annual) data quality reports run by PHF Science on key reporting fields and liaison with PHSs.

## Sensitivity

Sensitivity is a measure of our ability to identify the true burden of disease. More common and less severe diseases, such as acute gastroenteritis, are significantly less likely to be notified than severe diseases such as meningococcal disease.[12, 13]

The introduction of new diagnostic methods can alter our ability to detect notifiable diseases over time. For example, diagnostic tests for enteric disease can now screen for multiple disease agents at the same time and increase their detection. Changes in test sensitivity should be considered when interpreting disease trends.

## Completeness

The completeness of data recorded in EpiSurv varies among diseases. Table 3 shows the percentage of notifications for which complete data was provided for selected demographic variables from 2015 to 2024.

The completeness of date of birth, age and sex has remained very high (99%) over the past 10 years. The completeness of ethnicity data in 2024 (98.1%) was higher than in the previous two years but not as high as in 2019–2021.

Table 3. Completeness for selected EpiSurv variables, 2015–2024

Report year	Completeness of data (%)				
	Date of birth	Age	Sex	Ethnicity	NHI
2015	99.8	99.8	100.0	94.9	97.7
2016	99.9	100.0	100.0	96.3	98.5
2017	99.9	99.9	100.0	96.5	98.6
2018	99.9	99.9	100.0	93.6	99.0
2019	99.9	99.9	100.0	99.2	99.0
2020	99.7	99.8	100.0	99.7	99.4
2021	99.8	99.9	100.0	99.6	99.9
2022	99.8	99.8	100.0	97.7	99.6
2023	99.8	99.8	100.0	96.3	99.7
2024	99.7	99.7	100.0	98.1	99.7

## Accuracy

A limitation to accuracy is the identification of cases on the basis of serology, which may not be as specific as isolating the implicated organism or detecting it using polymerase chain reaction (PCR).

## Timeliness

Timely receipt of information is essential for appropriate public health investigation and action.

Table 4 shows a summary of the timeliness of notifications by disease for 2024.

In 2024, 63.0% of disease notifications (excluding COVID-19) had an onset date recorded, compared with 63.1% in 2023. Of these, 46.9% were reported to a PHS within one week of the onset of symptoms and 76.4% were reported within two weeks of the onset of symptoms.

For some diseases, reporting delays are related to the nature of the symptoms, leading to late presentation eg, giardiasis, pertussis, rheumatic fever, tuberculosis disease. For other diseases there may be delays in confirmation of the diagnosis due to the particular laboratory test required eg, leptospirosis.

In 2024, 86.0% (84.4% in 2023) of notifications were entered into EpiSurv within a day of being reported to a PHS and over 99% were entered within one week.

**Table 4. Timeliness of disease reporting and data entry for selected notifiable diseases, 2024**

Disease	Onset date recorded (%)	Reporting delay (%) <sup>a</sup>		Entry delay (%) <sup>b</sup>		
		≤1 week	≤2 weeks	≤1 day	≤1 week	≤2 weeks
Campylobacteriosis	45.0	60.0	89.5	84.8	99.7	99.9
Cryptosporidiosis	55.8	31.2	76.5	83.7	99.6	99.6
Dengue fever	97.6	38.8	76.9	96.0	100.0	100.0
Gastroenteritis (acute) <sup>c</sup>	90.2	59.2	85.1	81.4	96.6	98.6
Giardiasis	51.4	18.7	49.5	84.4	100.0	100.0
Hepatitis A	91.2	51.6	85.5	94.1	100.0	100.0
Invasive pneumococcal disease	87.6	67.7	88.7	86.6	99.4	99.9
Legionellosis	94.0	45.3	82.6	85.2	99.5	100.0
Leptospirosis	89.1	38.9	77.8	79.2	100.0	100.0
Measles	100.0	100.0	100.0	100.0	100.0	100.0
Meningococcal disease	100.0	93.0	100.0	88.4	100.0	100.0
Mpox	100.0	78.3	91.3	100.0	100.0	100.0
Pertussis	89.8	36.9	65.4	90.7	99.9	99.9
Rheumatic fever	94.7	26.4	58.9	94.2	98.1	98.1
Salmonellosis	86.6	56.9	87.6	87.2	99.9	99.9
Shigellosis	92.4	41.4	76.6	89.8	100.0	100.0
STEC infection	75.9	46.3	74.1	84.9	99.6	100.0
Tuberculosis disease	62.2	6.6	12.8	91.0	99.5	99.5
Typhoid fever	93.7	16.9	55.9	98.4	100.0	100.0
Yersiniosis	47.6	28.2	62.1	85.3	99.8	100.0
Other	47.5	57.3	74.1	83.4	93.7	94.4
<b>Total</b>	<b>63.0</b>	<b>46.9</b>	<b>76.4</b>	<b>86.0</b>	<b>99.5</b>	<b>99.7</b>

<sup>a</sup> Percentage of notifications reported (with onset date recorded) to a PHS within 1 week and 2 weeks of the onset of symptoms.

<sup>b</sup> Percentage of notifications entered into EpiSurv within 1 day, 1 week and 2 weeks of being reported to a PHS.

<sup>c</sup> Cases of acute gastroenteritis from a common source or person in a high-risk category (eg food handler or childcare worker) or foodborne intoxication, eg, staphylococcal intoxication.

# NOTIFIABLE DISEASES

## Anthrax

No cases of anthrax were notified in 2024. The last case was notified in 1940. New Zealand has been considered free of anthrax since the last recorded outbreak among domestic livestock in 1954.[14]

## Arboviral diseases

This section includes arthropod-borne viral diseases with one or more cases notified since 1997 (when EpiSurv records begin). All notifications of arboviral infection to date have been in recent overseas travellers. Yellow fever is reported in a separate section later in the report.

### Barmah Forest virus infection

No cases of Barmah Forest virus infection were notified in 2024. Six cases have been notified since 1997, most recently two cases in 2009, all with a history of travel to Australia.

### Chikungunya fever

Seven cases of chikungunya fever were notified in 2024, compared with nine cases in 2023.

The cases were aged 60–69 (3 cases), 30–39 (2 cases), 20–29 and 50–59 years (1 case each). Four cases were female and three were male. Five cases were of Asian ethnicity and one each were Māori and European or Other.

Hospitalisation status was recorded for all seven cases and four were hospitalised.

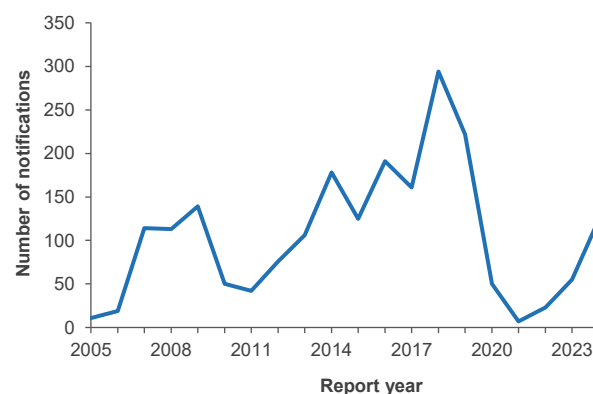
All seven cases had travelled overseas during the incubation period. The countries visited or lived in were India (4 cases), Indonesia, the Philippines and Vietnam (1 case each).

### Dengue fever

In 2024, 124 cases of dengue fever were notified, compared with 55 cases in 2023. The 2024 notification rate (2.3 per 100,000) was significantly higher than the 2023 rate (1.0 per 100,000).

Figure 2 shows dengue fever notifications since 2005. Notifications peaked in 2018 when 294 cases were notified. There was a marked decrease in cases in 2020 and 2021 due to COVID-19 border restrictions.

Figure 2. Dengue fever notifications by year, 2005–2024



Adults aged 30–39 years had the highest notification rate (4.8 per 100,000) followed by those aged 40–49 and 20–29 years (3.3 and 3.1 per 100,000 respectively).

Males and females had similar rates (2.4 and 2.2 per 100,000 respectively).

Ethnicity was recorded for 122 (98.4%) cases. The ethnic group with the highest notification rate was MELAA (10.3 per 100,000), followed by Asian (3.0 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 119 (96.0%) cases, of which 46 (38.7%) cases were hospitalised.

All 124 cases had travelled overseas during the incubation period. The countries most commonly visited were Indonesia (61 cases), India (11 cases), Thailand (11 cases) and French Polynesia (8 cases).

### Japanese encephalitis

No cases of Japanese encephalitis were notified in 2024. Since 1997, only one case of Japanese encephalitis has been notified (in 2004).

### Ross River virus infection

No cases of Ross River virus infection were notified in 2024. There have been 60 cases of Ross River virus infection notified since 1997.

### Zika virus infection

Eight cases of Zika virus infection were notified in 2024, compared with four cases in 2023.



The cases were aged 40–49, 50–59 (3 cases each), 20–29 and 60–69 years (1 case each). Four cases were male and four were female. All eight cases were European or Other ethnicity.

Hospitalisation status was recorded for all eight cases and three were hospitalised.

All eight cases had travelled overseas during the incubation period. The countries visited or lived in were Thailand (4 cases), Fiji (3 cases) and the Solomon Islands (1 case).

## Botulism

One confirmed case of botulism was notified in 2024. The case was aged 1–4 years and was considered to be a case of infant botulism due to their premature birth (meaning their corrected age was less than 1 year). No source was identified. Since 1997, seven cases of botulism have been notified, including four cases in 2020 and one each in 2014 and 2021.

## Brucellosis

One case of brucellosis was notified in 2024. The case was laboratory confirmed and was a male, aged 60–69 years, who had consumed unpasteurised milk in Ethiopia. The case had previously been diagnosed with brucellosis and their infection was considered to be chronic.

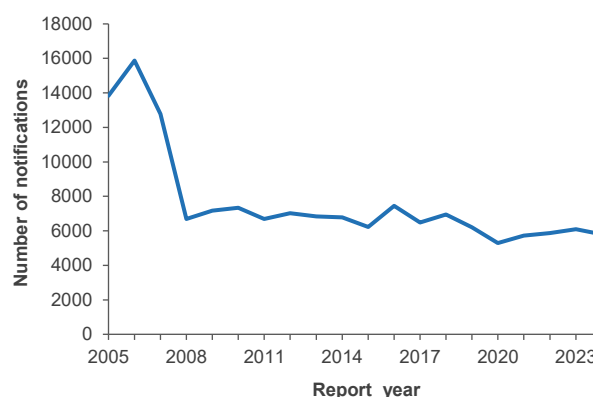
Since 1997, 30 cases of brucellosis have been notified. There has been no evidence of locally acquired brucellosis in humans since New Zealand's declaration of freedom from bovine brucellosis in 1996.[15]

## Campylobacteriosis

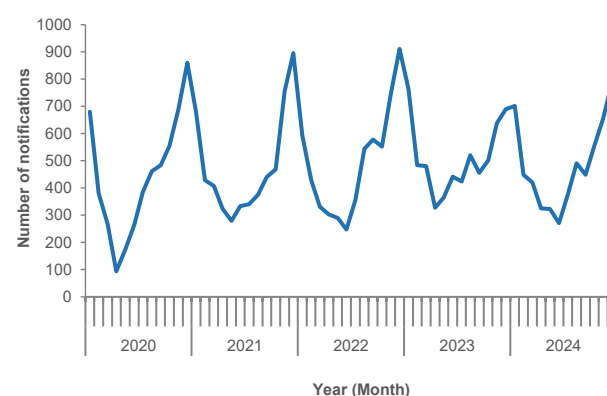
In 2024, 5801 cases of campylobacteriosis were notified, compared with 6092 cases in 2023. The 2024 rate of 108.7 per 100,000 was a significant decrease from the 2023 rate of 116.1 per 100,000. Since 2008, the annual number of campylobacteriosis cases reported has been much lower than in preceding years (Figure 3).

Figure 4 shows campylobacteriosis notifications by month since January 2020. There is a distinct seasonal pattern, with an early summer peak and a winter trough. The monthly low in 2020 occurred in April, shortly after the closure of the New Zealand border on 20 March 2020 to stop the spread of COVID-19.

**Figure 3. Campylobacteriosis notifications by year, 2005–2024**



**Figure 4. Campylobacteriosis notifications by month, January 2020–December 2024**



The highest notification rates for campylobacteriosis were reported from South Canterbury, Taranaki, Southern and Wairarapa districts (180.6, 174.0, 139.0 and 138.5 per 100,000 respectively) (Figure 5).

Children aged 1–4 years (194.3 per 100,000), infants aged less than 1 year (176.3 per 100,000) and adults aged 70 years and over (164.9 per 100,000) had the highest notification rates.

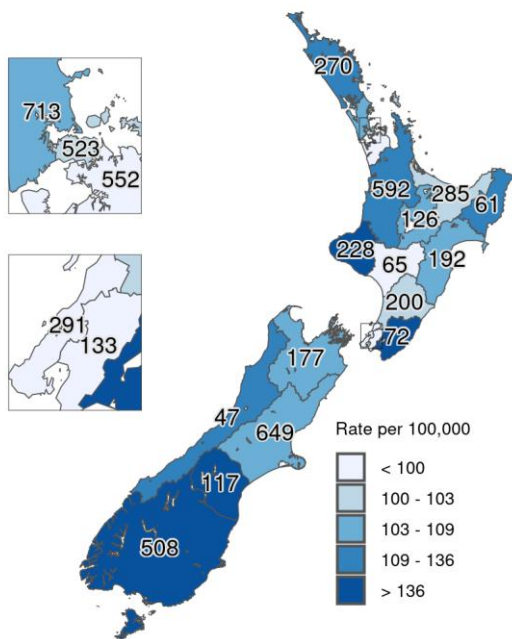
Males (120.8 per 100,000) had a higher rate than females (96.5 per 100,000).

Ethnicity was recorded for 5541 (95.5%) cases. The ethnic group with the highest rate for campylobacteriosis was European or Other (127.9 per 100,000), followed by MELAA (108.1 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 3476 (59.9%) cases, of which 560 (16.1%) cases were hospitalised.

**Figure 5. Campylobacteriosis notifications by district, 2024**



Consumption of food from retail premises and contact with farm animals were the most common risk factors reported for campylobacteriosis (Table 5). Multiple risk factors are often reported for individual cases.

Ten outbreaks of campylobacteriosis were reported in 2024, involving 102 cases (Table 26)

### Cholera

One case of cholera was notified in 2024. The case was a male, aged 60–69 years with recent travel to India.

Since 1997, 16 laboratory-confirmed cases of cholera have been notified. All 16 cases were overseas during the incubation period.

### COVID-19

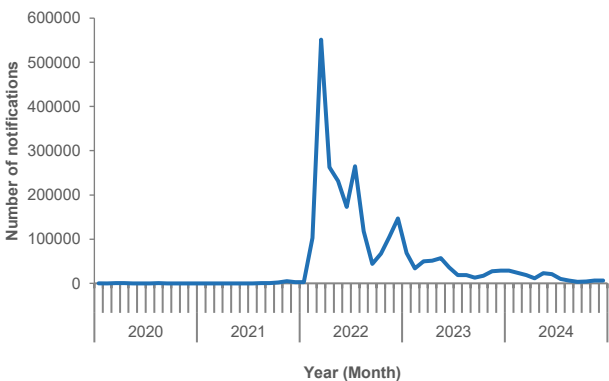
COVID-19 became a notifiable disease in New Zealand on 30 January 2020.[16] Public health measures were implemented to prevent the spread of the disease in March 2020.[17] The last of the COVID-19 specific restrictions were removed in August 2023.[18]

Since February 2022, COVID-19 notifications have been automatically generated from laboratory notifications and self-administered rapid antigen tests reported through the 'My Health Record' website or app. EpiSurv records contain demographic details only.

In 2024, 163,718 cases of COVID-19 were notified, compared with 418,761 cases in 2023. The 2024 notification rate (3067 per 100,000) was a significant decrease from the 2023 rate (7984 per 100,000).

Figure 6 shows COVID-19 notifications by month since January 2020. Monthly cases reported in 2022 far exceeded those in 2020 and 2021. Cases peaked in March 2022, with 551,324 cases reported.

**Figure 6. COVID-19 notifications by month, January 2020–December 2024**



**Table 5. Exposure to risk factors associated with campylobacteriosis, 2024**

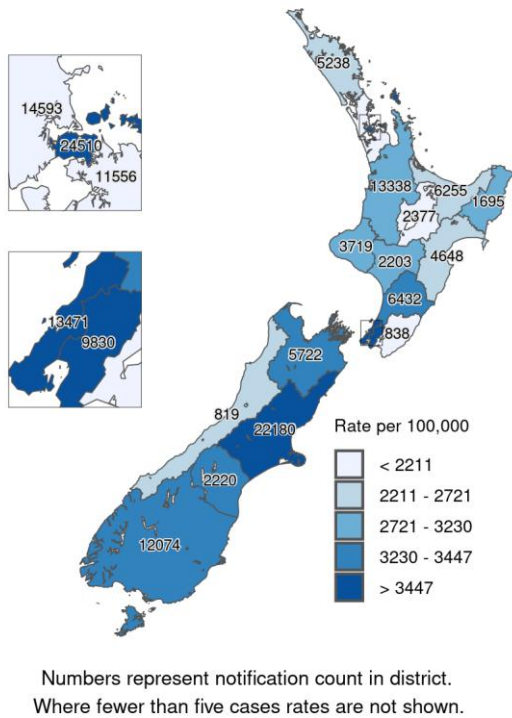
Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Consumed food from retail premises	841	864	4096	49.3
Contact with farm animals	832	1050	3919	44.2
Consumed untreated water	364	1225	4212	22.9
Recreational water contact	341	1403	4057	19.6
Contact with faecal matter	306	1910	3585	13.8
Travelled overseas during the incubation period	218	1502	4081	12.7
Contact with other symptomatic people	209	1440	4152	12.7
Contact with sick animals	97	1522	4182	6.0

<sup>a</sup> Percentage refers to the number of cases that answered "yes" out of the total number of cases for which this information was known. Some cases had more than one risk factor recorded.



The highest notification rates were reported from Hutt Valley, Auckland, Capital & Coast, and Canterbury districts (6012, 4796, 4146, and 3531 per 100,000 respectively (Figure 7).

**Figure 7. COVID-19 notifications by district, 2024**



Adults aged 70 years and over had the highest notification rate (5326 per 100,000), followed by those aged 60–69 years and 50–59 years (4245 and 4074 per 100,000 respectively).

Females (3762 per 100,000) had a higher rate than males (2356 per 100,000).

Ethnicity was recorded for 163,135 (99.6%) cases. The ethnic group with the highest rate of COVID-19 was European or Other (3549 per 100,000), followed by MELAA (2809 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisations and deaths are no longer recorded in EpiSurv.

In 2024, 70 outbreaks of COVID-19 were reported, involving 865 cases (Table 26).

### Creutzfeldt-Jakob disease

The National Creutzfeldt-Jakob Disease (CJD) Registry is responsible for receiving notifications of suspected cases of CJD, undertaking a review of each notified case and providing advice and

reporting on CJD in New Zealand. This section is based on the 28th annual report of the Registry (1 January 2024 to 31 December 2024).[19]

In 2024, seven cases of CJD were confirmed by the New Zealand CJD Registry. The cases were classified as one definite and six probable cases.

The cases were aged 60–69 years (4 cases), 30–39 years, 50–59 years and 70 years and over (1 case each).

Five cases were male and two were female.

Since 1997, the Registry has documented 146 cases of CJD, consisting of 61 definite and 85 probable cases.

No cases of variant CJD, the form linked with bovine spongiform encephalopathy, have been identified in New Zealand to date.

### Cronobacter species invasive disease

*Cronobacter* species invasive disease (previously known as *Enterobacter sakazakii*) has been notifiable in New Zealand since mid-2005. In December 2017, the case definition for *Cronobacter* species invasive disease was restricted to infants aged less than 1 year.

No cases of *Cronobacter* species invasive disease were notified in 2024, and there have been no cases in infants or neonates since it became notifiable in mid-2005.

### Cryptosporidiosis

In 2024, 1234 cases of cryptosporidiosis were notified, compared with 831 in 2023 (Figure 8). The 2024 notification rate (23.1 per 100,000) was significantly higher than the 2023 rate (15.8 per 100,000).

**Figure 8. Cryptosporidiosis notifications by year, 2005–2024**

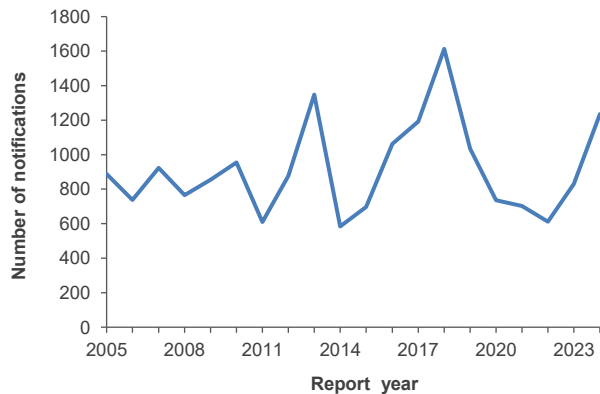
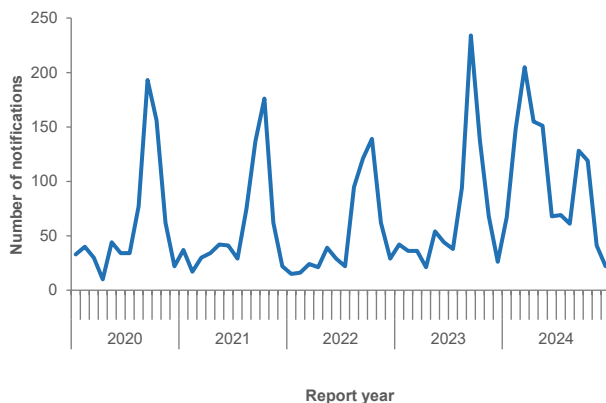


Figure 9 shows cryptosporidiosis cases by month since January 2020. There is a distinct seasonal pattern, with the highest number of notifications generally reported during spring each year. In 2024 there was also an earlier peak in cases in Autumn followed by a smaller spring peak. Culture independent diagnostic testing for cryptosporidiosis was introduced in 2024 which may partially explain the out-of-season increase.

**Figure 9. Cryptosporidiosis notifications by month, January 2020–December 2024**



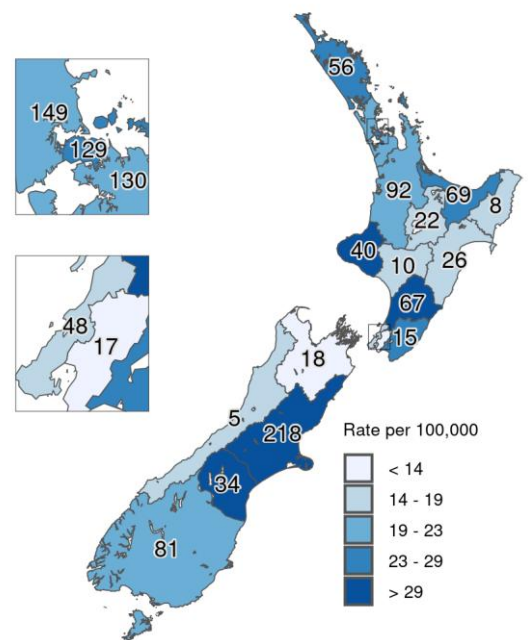
In 2024, the highest notification rate for cryptosporidiosis was reported from South Canterbury District (52.5 per 100,000) followed by Canterbury, MidCentral and Taranaki districts (34.7, 34.4 and 30.5 per 100,000 respectively) (Figure 10).

Children aged 1–4 years (98.8 per 100,000) had the highest notification rate, followed by children aged 5–9 years and infants aged less than 1 year (42.0 and 41.5 per 100,000 respectively).

Females (25.1 per 100,000) had a higher rate than males (21.0 per 100,000).

Ethnicity was recorded for 1228 (99.5%) cases. The ethnic group with the highest notification rate for cryptosporidiosis was European or Other (27.2 per 100,000), followed by Māori (22.4 per 100,000) and MELAA (21.9 per 100,000).

**Figure 10. Cryptosporidiosis notifications by district, 2024**



Numbers represent notification count in district. Where fewer than five cases rates are not shown.

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 1161 (94.1%) cases, of which 119 (10.2%) cases were hospitalised.

Recreational water contact and contact with farm animals were the most common risk factors reported for cryptosporidiosis (Table 6).

Thirteen outbreaks of cryptosporidiosis were reported in 2024, involving 176 cases (Table 26).

### Cysticercosis

No cases of cysticercosis were notified in 2024. The last case was notified in 2018.

**Table 6. Exposure to risk factors associated with cryptosporidiosis, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Recreational water contact	246	328	660	42.9
Contact with farm animals	228	327	679	41.1
Consumed food from retail premises	164	263	807	38.4
Contact with other symptomatic people	174	328	732	34.7
Contact with faecal matter	164	332	738	33.1
Consumed untreated water	113	363	758	23.7
Travelled overseas during the incubation period	85	547	602	13.4
Contact with sick animals	41	447	746	8.4

<sup>a</sup> Percentage refers to the number of cases that answered "yes" out of the total number of cases for which this information was known. Some cases have more than one risk factor recorded.

### Decompression sickness

Two cases of decompression sickness were notified in 2024. The cases were both males and were aged 30–39 years and 40–49 years.

Health New Zealand hospital discharge data for 2024 included 10 cases where decompression sickness was the principal diagnosis (Table 36).

Over the last five years, the number of hospitalisations with decompression sickness as the principal diagnosis has ranged from 8 to 31 annually, compared with only eight notifications in EpiSurv during this time, indicating consistent under-notification of this condition.

### Diphtheria

Diphtheria is caused by toxigenic strains of the bacterium *Corynebacterium diphtheriae* or, more rarely, toxigenic strains of *C. ulcerans* or *C. pseudotuberculosis*.

Two confirmed cases of cutaneous toxigenic diphtheria were notified in 2024. Both cases were female and were aged 1–4 years and 70 years and over.

One case had recently travelled to Samoa. The other case was due to *C. Ulcerans* and had contact with an unwell pet. This is the first case of toxigenic *C. Ulcerans* reported in New Zealand.

The last case of toxigenic respiratory diphtheria was notified in 1998.[20]

In 2024, the Special Bacteriology Laboratory at PHF Science received 139 *Corynebacterium* isolates for toxin testing (137 *C. diphtheriae* and two *C. ulcerans* isolates). The majority (118/127 isolates, 92.9%) were from cutaneous sources, seven were from the throat and nose and two were from blood. No site was given for 12 patients. Isolates from two patients were toxigenic (both cutaneous).

### Gastroenteritis (acute)

Not all cases of acute gastroenteritis are notifiable. Acute gastroenteritis is notifiable if there is a suspected common source, or it is in a person in a high-risk category (eg, food handler or early childhood service worker) or it is an infectious gastroenteritis of public health importance. Single cases of chemical, bacterial or toxic food poisoning are notifiable under this category. Botulism and toxic shellfish poisoning (TSP) are reported in separate sections

elsewhere in this report. Diseases and conditions that are notifiable separately (eg, campylobacteriosis, giardiasis, STEC infection and salmonellosis) are reported in their own sections.

In 2024, 440 cases of acute gastroenteritis (other than botulism and TSP) were notified. The 2024 notification rate (8.2 per 100,000) was similar to the 2023 rate (8.8 per 100,000, 462 cases).

A causal agent was reported for 229 (52.0%) cases. The most common cause was enterotoxigenic *Escherichia coli* (30.9%, 136 cases). The distribution of acute gastroenteritis cases by cause is shown in Table 7.

**Table 7. Acute gastroenteritis cases by cause, 2024**

Cause <sup>a</sup>	Cases	Percentage (%)
<b>Cause identified</b>	<b>229</b>	<b>52.0</b>
Enterotoxigenic <i>Escherichia coli</i> (ETEC)	136	30.9
Norovirus	32	7.3
<i>Vibrio parahaemolyticus</i>	29	6.6
Enteropathogenic <i>Escherichia coli</i> (EPEC)	10	2.3
<i>Clostridium perfringens</i> food intoxication	9	2.0
Histamine (scombroid) poisoning	4	0.9
Astrovirus	3	0.7
Rotavirus infection	3	0.7
Sapovirus	1	0.2
<i>Vibrio fluvialis</i>	1	0.2
Cucurbitacin poisoning	1	0.2
<b>Cause not identified</b>	<b>211</b>	<b>48.0</b>

<sup>a</sup> Does not include diseases that are notifiable separately.

Note: there may be more cases associated with specific causes through outbreak reporting, see Table 26.

The highest notification rates for acute gastroenteritis were reported from West Coast, Lakes, Waikato and Bay of Plenty districts (25.9, 22.4, 22.1 and 20.3 per 100,000 respectively).

Children aged less than 1 year and 1–4 years had the highest notification rates (12.1 and 11.9 per 100,000 respectively), followed by adults aged 50–59 years (10.1 per 100,000).

Females (9.0 per 100,000) had a higher rate than males (7.4 per 100,000).

Ethnicity was known for 433 (98.4%) cases. The ethnic group with the highest notification rate was European or Other (9.2 per 100,000), followed by MELAA (7.7 per 100,000).



**Table 8. Exposure to risk factors associated with acute gastroenteritis, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Consumed food from retail premises	214	99	127	68.4
Travelled overseas during the incubation period	149	231	60	39.2
Consumed water other than regular supply	68	210	162	24.5
Recreational water contact	58	225	157	20.5
Contact with other symptomatic people	52	248	140	17.3
Consumed untreated water	31	232	177	11.8
Contact with farm animals	31	266	143	10.4
Contact with human faecal matter	24	252	164	8.7

<sup>a</sup> Percentage refers to the number of cases that answered “yes” out of the total number of cases for which this information was known. Some cases had more than one risk factor recorded.

Hospitalisation status was recorded for 417 (94.8%) cases, of which 47 cases (11.3%) were hospitalised.

The most common risk factor associated with acute gastroenteritis was consumption of food from retail premises (Table 8).

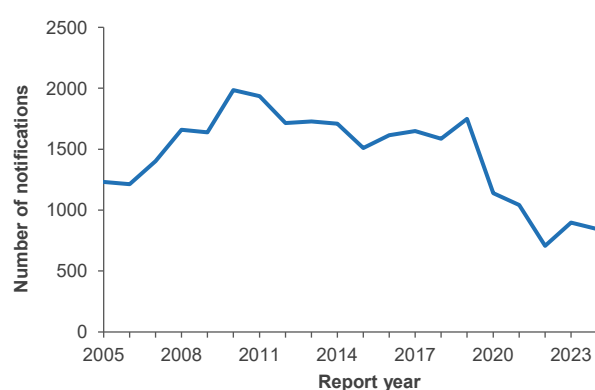
In 2024, 532 outbreaks of acute gastroenteritis were reported, involving 10,127 cases (Table 26).

## Giardiasis

In 2024, 844 cases of giardiasis were notified, compared with 898 in 2023. The 2024 notification rate (15.8 per 100,000) was lower than the 2023 rate (17.1 per 100,000).

Figure 11 shows giardiasis notifications by year from 2005 to 2024. Annual numbers have declined since 2019 when 1749 cases of giardiasis were notified.

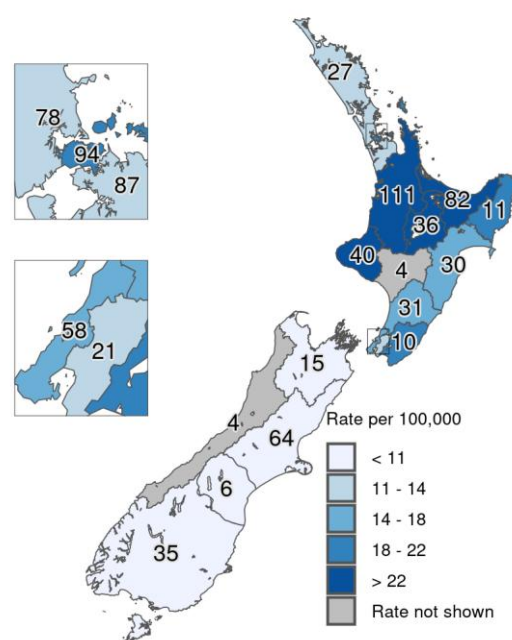
**Figure 11. Giardiasis notifications by year, 2005–2024**



The highest notification rates for giardiasis were reported from Taranaki, Lakes, Bay of Plenty and Waikato districts (30.5, 29.9, 29.2 and 23.6 per 100,000 respectively) (Figure 12).

Children aged 1–4 years (48.4 per 100,000) had the highest notification rate, followed by adults aged 30–39 years (21.4 per 100,000).

**Figure 12. Giardiasis notifications by district, 2024**



Numbers represent notification count in district. Where fewer than five cases rates are not shown.

Males (16.9 per 100,000) had a higher rate than females (14.8 per 100,000).

Ethnicity was recorded for 843 (99.9%) cases. The ethnic group with the highest notification rate for giardiasis was MELAA (34.7 per 100,000), followed by European or Other (18.4 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 561 (66.5%) cases, of which 29 (5.2%) cases were hospitalised.

**Table 9. Exposure to risk factors associated with giardiasis, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Consumed food from retail premises	123	181	540	40.5
Recreational water contact	120	220	504	35.3
Contact with farm animals	118	236	490	33.3
Contact with faecal matter	96	216	532	30.8
Contact with other symptomatic people	93	251	500	27.0
Travelled overseas during the incubation period	108	315	421	25.5
Consumed untreated water	71	215	558	24.8

<sup>a</sup> Percentage refers to the number of cases that answered “yes” out of the total number of cases for which this information was known. Some cases had more than one risk factor recorded.

Consumption of food from retail premises and recreational water contact were the most commonly reported risk factors for giardiasis (Table 9).

Five outbreaks of giardiasis were reported in 2024, involving 48 cases (Table 26).

### *Haemophilus influenzae* serotype b disease

*Haemophilus influenzae* serotype b (Hib) vaccine was introduced in January 1994. The recommended vaccination schedule consists of a primary course of three doses of DTaP-IPV-HepB/Hib vaccine for infants at age 6 weeks, 3 months and 5 months and a booster of Hib vaccine at 15 months of age.[21]

One case of Hib disease was notified in 2024, compared with four cases in 2023.

The case was a female, aged 50–59 years of Pacific ethnicity. The case was hospitalised.

### Hepatitis A

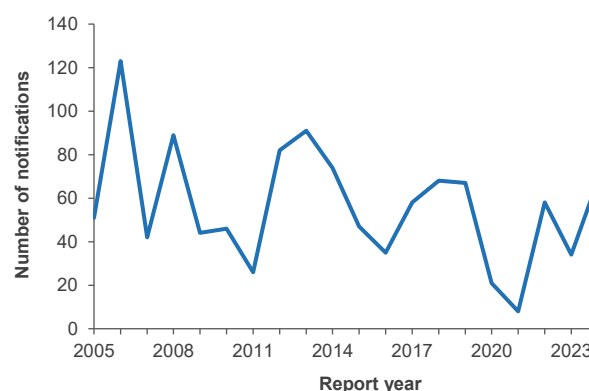
In 2024, 68 cases of hepatitis A were notified, compared with 34 cases in 2023. The 2024 notification rate (1.3 per 100,000) was significantly higher than the 2023 rate (0.6 per 100,000). Since 2005, annual notifications have fluctuated, ranging from 8 to 123 cases (Figure 13).

The highest notification rates for hepatitis A were reported from Bay of Plenty, Capital & Coast, Canterbury and Waikato districts (2.5, 2.2, 2.1 and 1.9 per 100,000 respectively).

Adults aged 20–29 years (2.5 per 100,000) and children aged 1–4 years (2.5 per 100,000) and 5–9 years (2.4 per 100,000) had the highest notification rates.

Males and females had the same rate (1.3 per 100,000).

**Figure 13. Hepatitis A notifications by year, 2005–2024**



Ethnicity was recorded for 67 (98.5%) cases. The ethnic group with the highest notification rate for hepatitis A was MELAA (7.7 per 100,000), followed by Asian (4.4 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 67 (98.5%) cases, of which 48 (71.6%) cases were hospitalised

Travel information was recorded for 67 cases, with 41 cases (61.2%) having travelled overseas during the incubation period. The most commonly visited country was India (25 cases).

Of the 27 cases that did not travel overseas, eight were linked to an outbreak at a childcare centre. No risk factors were identified in nine cases.

Three outbreaks of hepatitis A were reported in 2024, involving 16 cases (Table 26).

### Hepatitis B

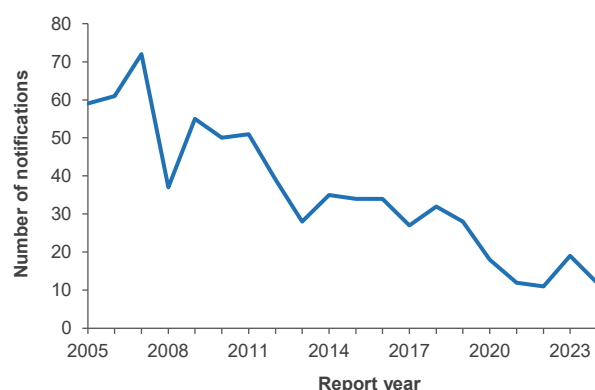
Hepatitis B vaccine was added to the national immunisation schedule in 1988. The current vaccination schedule consists of three doses of DTaP-IPV-HepB/Hib vaccine given to infants at age 6 weeks, 3 months and 5 months.[21]

Only acute hepatitis B is notifiable, so notification rates do not give an indication of the burden of chronic hepatitis B infection.

In 2024, 12 cases of hepatitis B were notified, compared with 19 cases in 2023. The 2024 notification rate (0.2 per 100,000) was similar to the 2023 rate (0.4 per 100,000).

There has been a steady decrease in the annual number of acute hepatitis B cases since 2007 when 72 cases were notified (Figure 14).

**Figure 14. Acute hepatitis B notifications by year, 2005–2024**



The highest number of cases was reported from Bay of Plenty District (3 cases), followed by Counties Manukau and Southern districts (2 cases each).

The age groups with the highest number of cases were 50–59 years (6 cases) and 40–49 years (4 cases).

Eight cases were male and four were female.

Ethnicity was recorded for 11 cases. Four cases were European or Other ethnicity, three were Pacific peoples, three were Asian and one was Māori.

Hospitalisation status was recorded for all 12 cases and six (50.0%) were hospitalised.

The most commonly reported risk factors for acute hepatitis B were overseas travel and occupational exposure to blood (Table 10).

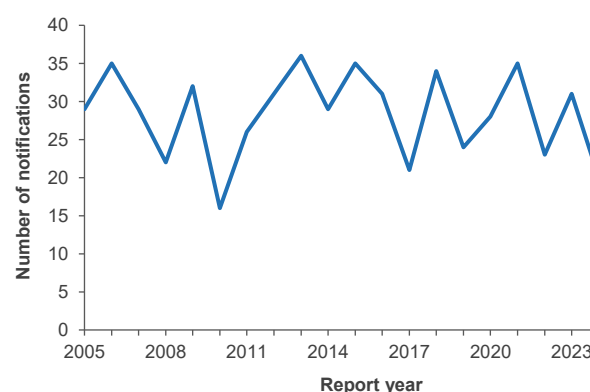
## Hepatitis C

Only acute hepatitis C is notifiable, so notification rates do not give an indication of the burden of chronic hepatitis C infection.

In 2024, 20 cases of hepatitis C were notified, compared with 31 cases in 2023. The 2024 notification rate (0.4 per 100,000) was similar to the 2023 rate (0.6 per 100,000).

Since 2005, the annual number of notifications has ranged from 16 to 36 cases (Figure 15).

**Figure 15. Acute hepatitis C notifications by year, 2005–2024**



The highest number of cases was reported from Waitemata District (5 cases), followed by Auckland (4 cases) and Southern (3 cases) districts.

The age groups with the highest number of cases were 40–49 years (7 cases), 60–69 years (4 cases) and 20–29 years (3 cases).

Seventeen (85.0%) cases were male and three were female.

Eleven cases were European or Other ethnicity, six were Māori and one each were Pacific peoples, Asian and MELAA.

Hospitalisation status was recorded for all 20 cases and three (6.0%) were hospitalised.

**Table 10. Exposure to risk factors associated with acute hepatitis B, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Travelled overseas during incubation period	4	7	1	36.4
Occupational exposure to blood	3	8	1	27.3
History of injecting drug use	1	9	2	10.0
Sexual contact with confirmed case	1	9	2	10.0
Household contact with a confirmed case	1	10	1	9.1

<sup>a</sup> Percentage refers to the number of cases that answered “yes” out of the total number of cases for which this information was known. Some cases had more than one risk factor recorded.

**Table 11. Exposure to risk factors associated with acute hepatitis C, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
History of injecting drug use	9	4	7	69.2
Body piercing/ tattooing in last 12 months	4	5	11	44.4
Sexual contact with confirmed case	5	7	8	41.7
Travelled overseas during incubation period	3	9	8	25.0

<sup>a</sup> Percentage refers to the number of cases that answered “yes” out of the total number of cases for which this information was known. Some cases had more than one risk factor recorded.

The most commonly reported risk factor for acute hepatitis C was a history of injecting drug use, followed by body piercing or tattooing in the 12 months prior, and sexual contact with a confirmed case (Table 11).

### Hepatitis (viral) not otherwise specified

In 2024, five cases of hepatitis (viral) not otherwise specified (NOS) were notified, compared with eight cases in 2023. Three cases were hepatitis D and two were hepatitis E.

### Hepatitis D

The three hepatitis D cases were aged 40–49 years (2 cases) and 30–39 years (1 case). Two cases were male, and one was female.

The cases were of Pacific peoples, Asian and European or Other ethnicity (1 case each).

No cases were hospitalised.

### Hepatitis E

The two hepatitis E cases were both Asian males and were aged 50–59 years and 70 years and over.

Both cases were hospitalised.

The cases had both travelled overseas during the incubation period.

### Highly pathogenic avian influenza

Highly pathogenic avian influenza (HPAI) became a notifiable disease in New Zealand in February 2004. No human cases have been reported in New Zealand to date.

In December 2024 an outbreak of HPAI was detected on a commercial egg farm in rural Otago. The outbreak was limited to a single property and the strain was identified as H7N6. Prior to this event, New Zealand was free from HPAI.[22]

### Hydatid disease

Two cases of hydatid disease (*Echinococcus granulosus*) were notified in 2024. The cases

were aged 50–59 years and 70 years and over. Both cases were overseas acquired.

Since 1997, 80 cases of hydatid disease have been notified.

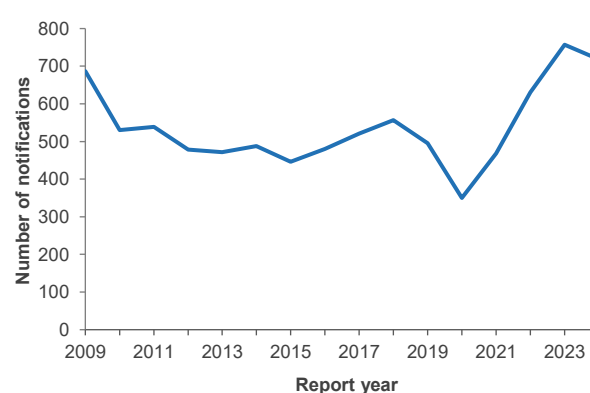
*Echinococcus* species are notifiable organisms under the Biosecurity Act 1993. All cases of hydatid disease are reported to the Ministry for Primary Industries for investigation of possible disease reservoirs in New Zealand animals. In September 2002, New Zealand was declared provisionally free of hydatids. Given the natural history of the disease, it is expected that cases may occur for some years.

### Invasive pneumococcal disease

In 2024, 718 cases of invasive pneumococcal disease (IPD) were notified, compared with 757 cases in 2023. The 2024 notification rate (13.4 per 100,000) was lower than the 2023 rate (14.4 per 100,000).

Figure 16 shows the number of cases each year since 2009 (the first full year since IPD became a notifiable disease in October 2008). Annual notifications have increased in recent years from a low of 350 cases in 2020.

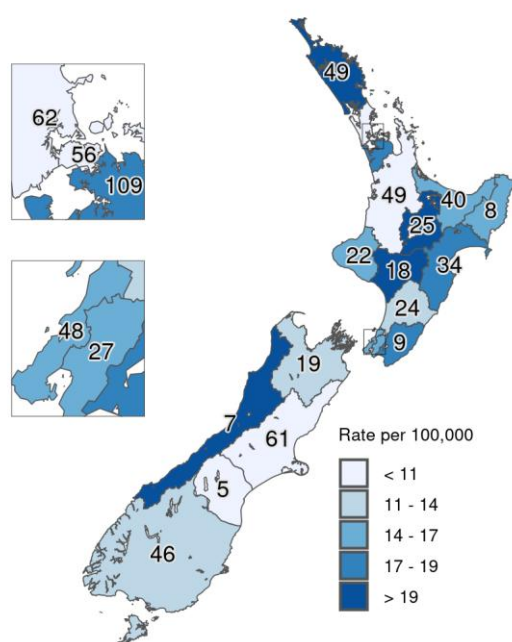
**Figure 16. Invasive pneumococcal disease notifications by year, 2009–2024**



In 2024, the highest notification rate for IPD was reported from Whanganui District (25.6 per 100,000), followed by Northland, Lakes and West Coast districts (23.9, 20.8 and 20.1 per 100,000 respectively) (Figure 17).



**Figure 17. Invasive pneumococcal disease notifications by district, 2024**



Adults aged 70 years and over (39.5 per 100,000) had the highest rate of IPD, followed by those aged 60–69 years (22.6 per 100,000) and infants aged less than 1 year (20.7 per 100,000).

Males (15.1 per 100,000) had a higher rate than females (11.8 per 100,000).

Ethnicity was recorded for 716 (99.7%) cases. The ethnic group with the highest rate of IPD was Pacific peoples (35.6 per 100,000), followed by Māori (21.5 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 706 (98.3%) cases, of which 681 (96.5%) cases were hospitalised.

There were 25 deaths due to IPD reported in 2024 (Table 35). One death was in a child aged 1–4 years and 24 deaths were in adults aged 50 years and over.

The most commonly reported risk factors for children aged less than 5 years were premature birth (for cases aged less than 1 year) and having a chronic illness (Table 12). Having a chronic illness and being a current smoker (for cases aged 15 years and over) were the most common risk factors for cases aged 5 years and over (Table 13).

Pneumococcal conjugate vaccine (PCV) was added to the national immunisation schedule in June 2008. The 7-valent conjugate vaccine (PCV7) was used until July 2011 when the 10-valent conjugate vaccine (PCV10) was introduced. This was in turn replaced by the 13-valent conjugate vaccine (PCV13) in July 2014, which was changed back to PCV10 in July 2017. On 1 December 2022, PCV13 was reintroduced.

**Table 12. Exposure to risk factors associated with invasive pneumococcal disease for cases aged less than 5 years, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Premature (<37 weeks gestation) <sup>b</sup>	2	9	1	18.2
Chronic illness	7	40	3	14.9
Congenital or chromosomal abnormality	3	37	10	7.5
Immunocompromised	3	41	6	6.8

<sup>a</sup> Percentage refers to the percentage of cases that answered “yes” out of the total number of cases for which this information was known.

<sup>b</sup> Only cases aged less than 1 year are included for reporting of this risk factor.

Some cases had more than one risk factor recorded. No cases reported asplenia, cochlear implants or chronic lung disease as risk factors.

**Table 13. Exposure to risk factors associated with invasive pneumococcal disease for cases aged 5 years and over, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Chronic illness	398	225	45	63.9
Current smoker <sup>b</sup>	118	387	130	23.4
Chronic lung disease or cystic fibrosis	122	476	70	20.4
Immunocompromised	94	500	74	15.8
Resident in long-term or other chronic-care facility	27	582	59	4.4

<sup>a</sup> Percentage refers to the percentage of cases that answered “yes” out of the total number of cases for which this information was known.

<sup>b</sup> Only cases aged 15 years and over are included in the reporting of this risk factor.

Some cases had more than one risk factor recorded.

The recommended schedule for PCV is three doses given at age 6 weeks, 5 months and 12 months. For defined groups of high-risk children and adults, the immunisation schedule also includes PCV13 and the 23-valent pneumococcal polysaccharide vaccine (23PPV).[21]

The Invasive Pathogens Laboratory at PHF Science received a viable *Streptococcus pneumoniae* isolate from a normally sterile site for serotyping for 670 (93.3%) notified cases in 2024. Serotype 19A was the most prevalent serotype (176 cases, 26.3%), followed by the non-PCV serotype 8 (124 cases, 18.5%). Overall, 40.6% (272/670) of cases with a known serotype were due to a serotype covered by PCV13.

## Legionellosis

During 2024, 183 cases of legionellosis were notified, compared with 238 in 2023. The 2024 notification rate (3.4 per 100,000) was a significant decrease from the 2023 rate (4.5 per 100,000).

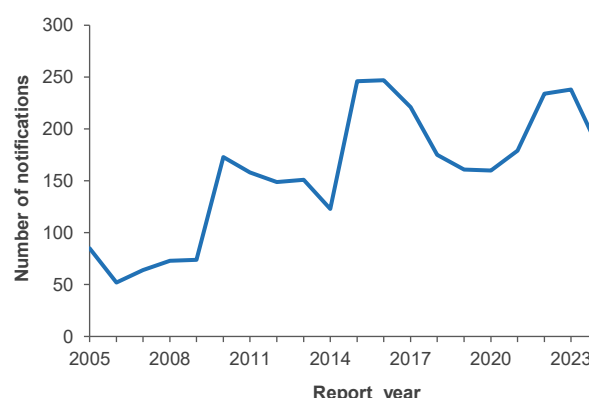
The annual number of notifications was relatively stable between 2005 and 2009 but increased in 2010 and has remained high since (Figure 18). The increase in legionellosis cases in 2015 and 2016 is likely due to the LegiNZ study [23] which involved testing hospitalised patients with suspected pneumonia for *Legionella* spp. using PCR. The study ran from May 2015 to May 2016.

In 2024, the highest notification rates for legionellosis were reported from Bay of Plenty, Canterbury and Counties Manukau districts (6.0, 5.9 and 5.3 per 100,000 respectively).

Adults aged 70 years and over (12.9 per 100,000) and 60–69 years (9.4 per 100,000) had the highest notification rates for legionellosis.

Males (4.4 per 100,000) had a higher rate than females (2.5 per 100,000).

**Figure 18. Legionellosis notifications by year, 2005–2024**



The ethnic group with the highest notification rate was European or Other (4.2 per 100,000), followed by Māori (2.7 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 181 (98.9%) cases, of which 168 (92.8%) cases were hospitalised.

One death due to legionellosis was reported in 2024 (Table 35). The death was in an adult aged 70 years and over.

Table 14 provides a summary of risk factors for which data was available. A total of 137 (82.5%) cases reported exposure to known environmental risk factors during the incubation period. Risk factors for *Legionella pneumophila* include water sources such as hot water systems, air conditioning cooling towers, decorative fountains, humidifiers, spa pools and respiratory medical devices, while risk factors for *L. longbeachae* include exposure to compost, potting mixes and soil.[24]

The species was identified in 175/183 (95.6%) legionellosis cases in 2024. As in previous years, the most common *Legionella* species identified were *L. longbeachae* (49.1%, 86 cases) and *L. pneumophila* (47.4%, 83 cases) (Table 15).

**Table 14. Exposure to risk factors associated with legionellosis, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Exposure to known environmental source	137	29	17	82.5
Pre-existing immunosuppressive or debilitating condition	68	88	27	43.6
Smokes cigarettes	20	141	22	12.4

<sup>a</sup> Percentage refers to the percentage of cases that answered “yes” out of the total number of cases for which this information was known. Some cases had more than one risk factor recorded.

**Table 15. *Legionella* strains for laboratory-reported cases, 2024**

<i>Legionella</i> species and serogroup	Cases	Percentage (%)
<b><i>L. longbeachae</i></b>	<b>86</b>	<b>49.1</b>
<i>L. longbeachae</i> sg 1	51	29.1
<i>L. longbeachae</i> sg not determined	35	20.0
<b><i>L. pneumophila</i></b>	<b>83</b>	<b>47.4</b>
<i>L. pneumophila</i> sg 1	55	31.4
<i>L. pneumophila</i> sg 2	2	1.1
<i>L. pneumophila</i> sg 3	2	1.1
<i>L. pneumophila</i> sg 5	1	0.6
<i>L. pneumophila</i> sg 10	1	0.6
<i>L. pneumophila</i> sg 12	2	1.1
<i>L. pneumophila</i> sg 13	2	1.1
<i>L. pneumophila</i> sg not determined	18	10.3
<b>Other <i>Legionella</i> species</b>	<b>6</b>	<b>4.2</b>
<i>L. micdadeii</i>	3	1.7
<i>L. bozemanii</i> sg 1	1	0.6
<i>L. lytica</i>	1	0.6
<i>L. sainthelensi</i>	1	0.6
<b>Total</b>	<b>175</b>	<b>100.0</b>

## Leprosy

Three cases of leprosy were notified in 2024, compared with four cases as in 2023.

Two cases were female and one was male. The cases were aged 20–29 years (2 cases) and 40–49 years (1 case). Two cases were Pacific peoples and one was Asian.

The cases had been in Samoa (2 cases), India, Fiji, Nauru and Tuvalu (1 case each). One case had lived in several countries.

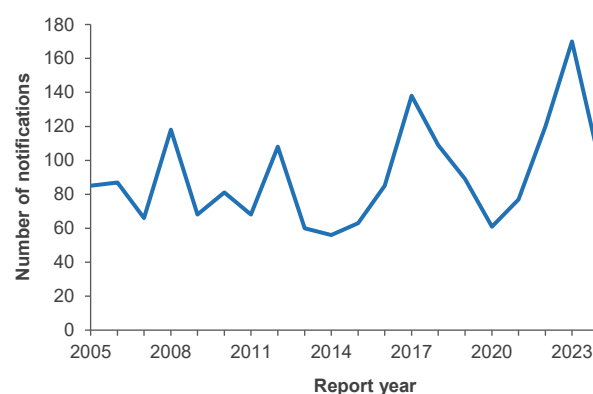
## Leptospirosis

In 2024, 101 cases of leptospirosis were notified, compared with 170 cases in 2023. The 2024 notification rate (1.9 per 100,000) was a significant decrease from the 2023 rate (3.2 per 100,000).

Figure 19 shows the number of notified cases of leptospirosis each year since 2005.

The highest notification rate for leptospirosis was reported from Waikato District (7.4 per 100,000), followed by Bay of Plenty (6.0 per 100,000).

**Figure 19. Leptospirosis notifications by year, 2005–2024**



Adults aged 50–59, 40–49, 60–69 and 30–39 years had the highest notification rates (3.1, 2.9, 2.9 and 2.8 per 100,000 respectively).

Males (2.4 per 100,000) had a higher rate than females (1.4 per 100,000).

Ethnicity was recorded all 101 cases. European or Other (2.6 per 100,000) and Māori (1.2 per 100,000) and had the highest notification rates.

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 98 (97.0%) cases, of which 80 (81.6%) cases were hospitalised.

Occupation was recorded for 97 (96.0%) cases. Of these, 37 (38.1%) were engaged in occupations considered high risk for exposure to *Leptospira* spp. in New Zealand.[25] Of the 37 cases with a high-risk occupation, 33 (89.2%) were farmers, farm workers or those providing services to farms and four (10.8%) worked in the meat processing industry. A further 13 cases worked in an occupation that involved contact with contaminated environments including horticulture, aquaculture, forestry and garden workers. Other risk factors reported included exposure to farm or wild animals (70 cases) and exposure to lakes, rivers or streams (27 cases).

The *Leptospira* Reference Laboratory at PHF Science confirmed 28 cases of infection with *Leptospira* in 2024. The most common *Leptospira* serovars reported were *L. borgpetersenii* sv Hardjo and *L. borgpetersenii* sv Ballum (21.4%, 6 cases each) (Table 16).

**Table 16. *Leptospira* species and serovars for cases referred to PHF Science, 2024**

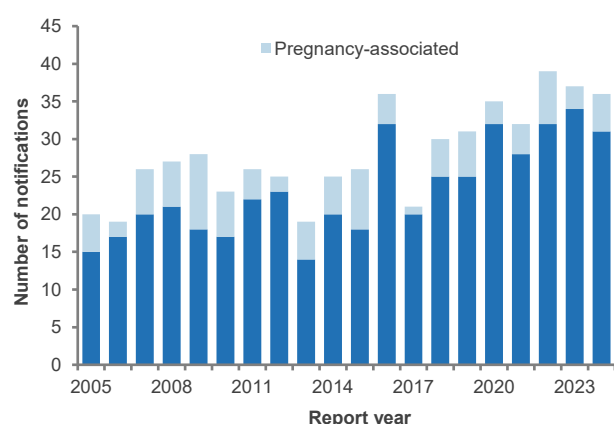
<i>Leptospira</i> species and serovar	Cases	Percentage (%)
<b><i>L. borgpetersenii</i></b>	<b>15</b>	<b>53.6</b>
<i>L. borgpetersenii</i> sv Hardjo	6	21.4
<i>L. borgpetersenii</i> sv Ballum	6	21.4
<i>L. borgpetersenii</i> sv Tarassovi	3	10.7
<b><i>L. interrogans</i></b>	<b>6</b>	<b>21.4</b>
<i>L. interrogans</i> sv Pomona	3	10.7
<i>L. interrogans</i> sv Copenhageni	2	7.1
<i>L. interrogans</i> sv Australis	1	3.6
<b>Serovar not identified</b>	<b>7</b>	<b>25.0</b>
<b>Total</b>	<b>28</b>	<b>100.0</b>

## Listeriosis

In 2024, 36 cases of listeriosis were notified (including five pregnancy-associated cases), compared with 37 cases (three pregnancy-associated) in 2023. The 2024 notification rate was the same as the 2023 rate (0.7 per 100,000).

Figure 20 shows listeriosis notifications for each year since 2005.

**Figure 20. Listeriosis notifications by year, 2005–2024**



The Special Bacteriology Laboratory at PHF Science received 34 isolates of *Listeria monocytogenes* in 2024, of which 30 were able to be serotyped. The serotypes identified were O1/2 (18 isolates, 60.0%) and O4 (12 isolates, 40.0%).

## Listeriosis not associated with pregnancy

The 31 listeriosis cases not associated with pregnancy were from 12 districts. Auckland District had the highest rate (1.2 per 100,000, 6 cases), followed by Waitemata (0.9 per 100,000, 6 cases). No more than four cases were reported in any other district, so rates were not calculated.

Adults aged 70 years and over (2.9 per 100,000) had the highest rate of listeriosis and accounted for over half (58.1%, 18 cases) of the cases.

Females (0.7 per 100,000, 18 cases) had a higher rate than males (0.5 per 100,000, 13 cases).

Ethnicity was recorded for all 31 cases. The ethnic group with the highest notification rate was Māori (0.8 per 100,000, 7 cases), followed by European or Other (0.5 per 100,000, 16 cases).

All 31 cases were hospitalised for listeriosis and 11 were also hospitalised for the treatment of another illness.

Information on underlying illness was recorded for 28 (90.3%) cases, of which 22 (78.6%) had an underlying illness such as cancer, renal failure, liver disease, diabetes, heart disease, or another chronic illness. Fourteen cases were reported to be receiving immunosuppressive drugs.

## Pregnancy-associated listeriosis

Five cases of pregnancy-associated listeriosis were notified in 2024. The gestation of pregnancy for the cases ranged from 14 to 39 weeks.

Two cases were aged 20–29 years, two were 30–39 years, and one was 15–19 years. Two cases were Māori, two were Asian and one was European or Other.

One perinatal death from listeriosis occurred in 2024 (Table 35).

## Malaria

In 2024, 29 cases of malaria were notified, compared with 54 cases in 2023. The 2024 notification rate (0.5 per 100,000) was a significant decrease from the 2023 rate (1.0 per 100,000).

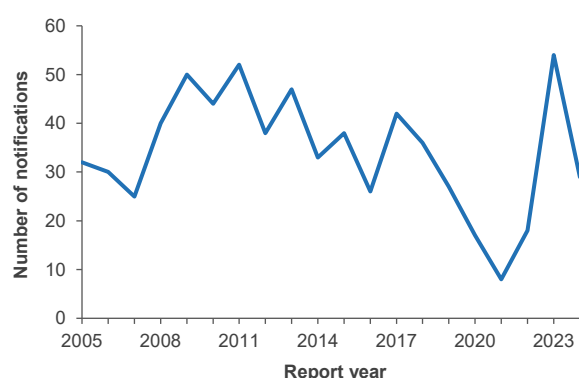
Figure 21 shows the number of notified cases of malaria each year since 2005. There was a large decrease in cases from 2020 to 2022 due to COVID-19 border restrictions.

Adults aged 20–29 years had the highest notification rate (1.2 per 100,000), followed by those aged 50–59 and 30–39 years (0.9 and 0.7 per 100,000 respectively).

Males (0.8 per 100,000) had a higher rate than females (0.3 per 100,000).



**Figure 21. Malaria notifications by year, 2005–2024**



Ethnicity was recorded for all 29 cases. The ethnic group with the highest notification rate was Pacific peoples (2.8 per 100,000), followed by Asian (1.4 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 28 (96.6%) cases, of which 22 (78.6%) cases were hospitalised.

Table 17 shows the region and country of overseas travel and the *Plasmodium* species identified for the 29 malaria cases. The species was identified in 26 (89.7%) cases: 14 were *Plasmodium vivax*, 10 were *P. falciparum*, two were *P. ovale* and one was *P. malariae* (one case was infected with both *P. falciparum* and *P. ovale*). The most commonly reported region was Oceania with 14 cases.

Information on prophylaxis was available for 24 cases, of which six (25.0%) were offered prophylaxis. Five (83.3%) cases were recorded as taking prophylaxis as prescribed.

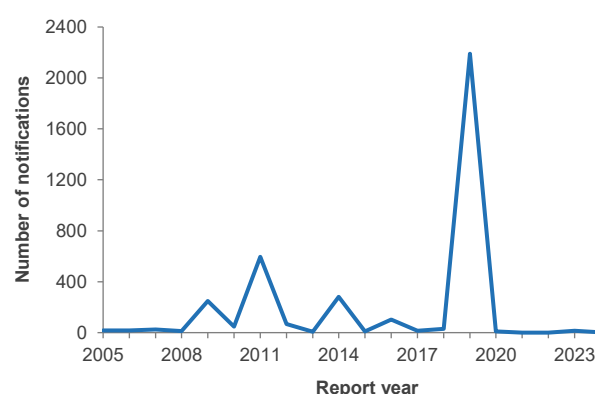
## Measles

Measles vaccination was introduced in 1969 [21] and measles has been a notifiable disease since June 1996.[3] The recommended schedule for measles, mumps and rubella (MMR) vaccine is two doses given at 12 months and 15 months of age.[21] In October 2017, New Zealand was verified by the WHO as having eliminated endemic measles.[26]

In 2024, one case of measles was notified, compared with 14 cases in 2023. The 2024 notification rate (0.02 per 100,000) was a significant decrease from the 2023 rate (0.3 per 100,000).

The number of measles cases notified since 2005 is shown in Figure 22. The most recent peak in notifications was in 2019 with 2190 cases.

**Figure 22. Measles notifications by year, 2005–2024**



The case was a male aged 30–39 years who travelled to Vietnam during the incubation period. The case was not hospitalised and had an unknown vaccination status.

Health New Zealand hospital discharge data for 2024 included four hospitalisations where measles was the principal diagnosis (Table 36).

**Table 17. Region and country of overseas travel and *Plasmodium* species for malaria notifications, 2024**

Region	Country resided in or visited	Plasmodium species				
		<i>P. falciparum</i>	<i>P. malariae</i>	<i>P. ovale</i>	<i>P. vivax</i>	Indeterminate
Sub-Saharan Africa	Burundi			1		
	Kenya	1				
	Nigeria	1				
	Sierra Leone	1				
	Zambia <sup>a</sup>	2		1		
Southern and Central Asia	Afghanistan					1
	India				2	1
	Pakistan				4	
Oceania	Papua New Guinea	3	1		2	1
	Solomon Islands	2			5	
Unknown	Unknown				1	

<sup>a</sup> One case had a dual infection with *P. falciparum* and *P. ovale* and has been counted twice.

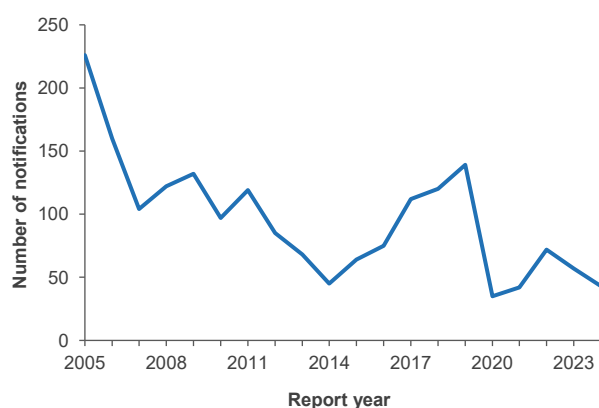
## Meningococcal disease

The meningococcal group B (MenB) vaccine was added to the national immunisation schedule on 1 March 2023. The recommended vaccination schedule for meningococcal group B disease is a primary course of MenB vaccine at ages 3 months and 5 months, followed by a booster dose at age 12 months. In addition, MenACWY and MenB vaccines are funded for high-risk groups, including those aged 13–25 years in their first year of close-living situations.[21]

In 2024, 43 cases of meningococcal disease were notified, compared with 57 cases in 2023. The 2024 notification rate (0.8 per 100,000) was lower than the 2023 rate (1.1 per 100,000).

Figure 23 shows the number of meningococcal disease notifications from 2005 to 2024. During that time notifications decreased from 226 in 2005 to a low of 35 in 2020.

**Figure 23. Meningococcal disease notifications by year, 2005–2024**



Only three districts reported five cases or more. These were Counties Manukau (7 cases, 1.1 per 100,000), Auckland (5 cases, 1.0 per 100,000) and Canterbury (5 cases, 0.8 per 100,000) districts.

Infants aged less than 1 year had the highest notification rate (13.8 per 100,000), followed by children aged 1–4 years (2.9 per 100,000) and young adults aged 15–19 years (2.3 per 100,000).

Males (0.9 per 100,000) had a slightly higher rate than females (0.7 per 100,000).

Ethnicity was recorded for all 43 cases. The ethnic group with the highest notification rate for meningococcal disease was Māori (1.9 per 100,000), followed by Pacific peoples (1.4 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for all 43 cases and all were hospitalised.

Two deaths due to meningococcal disease were reported in 2024 (Table 35), giving a case fatality rate of 4.7%. One death was in an infant aged less than 1 year and the other was aged 15–19 years. Both were due to group B.

Of the 43 cases, 40 met the confirmed case definition and three were probable cases. The group was determined for 35 confirmed cases. The majority (74.3%, 26 cases) were group B, five (14.3%) were group Y and four (11.4%) were group W (Table 18). For children aged less than 5 years, all 15 cases were confirmed and 12 had a group determined: all were group B strains.

**Table 18. Meningococcal disease strain group distribution by year, 2020–2024**

Strain group	2020	2021	2022	2023	2024
<b>Group B</b>	<b>18</b>	<b>29</b>	<b>46</b>	<b>33</b>	<b>26</b>
B:P1.7-12,14	3	12	14	11	10
B:P1.7-2,4	9	8	14	10	4
Other group B	6	9	18	12	12
<b>Group Y</b>	<b>2</b>	<b>1</b>	<b>8</b>	<b>6</b>	<b>5</b>
<b>Group W</b>	<b>11</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>4</b>
W:P1.5,2	11	6	3	2	3
Other group W	0	0	0	0	1
<b>Group C</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>
<b>Total*</b>	<b>32</b>	<b>36</b>	<b>57</b>	<b>43</b>	<b>35</b>

\*Total number of laboratory-confirmed cases where the strain was determined.

The antimicrobial susceptibilities of 26 viable meningococcal isolates received by PHF Science from cases of invasive disease in 2024 were tested. All isolates were susceptible to ciprofloxacin, ceftriaxone and rifampicin. One isolate was penicillin resistant (defined as minimum inhibitory concentration (MIC)  $\geq 0.5$  mg/L). Twelve (46.2%) isolates had a penicillin MIC  $\geq 0.12$  mg/L, including 10/16 (62.5%) group B isolates and 2/6 (33.3%) group Y isolates. None of the group W or non-groupable isolates had a penicillin MIC  $\geq 0.12$  mg/L.

## Middle East Respiratory Syndrome (MERS)

No cases of MERS have been notified in New Zealand since it became notifiable on 6 September 2013.

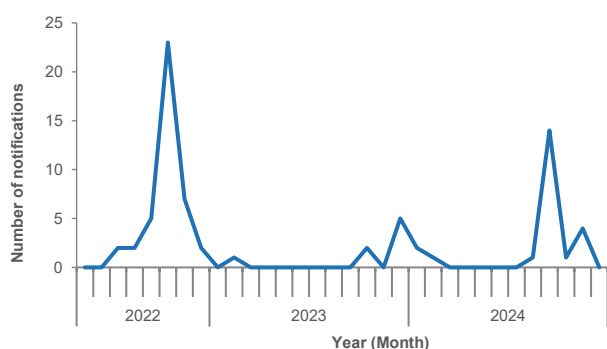
## Mpox (Monkeypox)

Mpox became a notifiable disease in New Zealand on 9 June 2022 [27] after a global outbreak began in early May 2022.[28]

In 2024, 23 cases of mpox were notified, compared with eight cases in 2023. The 2024 notification rate (0.4 per 100,000) was significantly higher than the 2023 rate (0.2 per 100,000).

Monthly notifications for mpox peaked in October 2022 when 23 cases were notified and again in September 2024 with 14 cases (Figure 24).

**Figure 24. Mpox notifications by month, May 2022–December 2024**



The highest number of cases was reported from Canterbury District (8 cases), followed by Southern (6 cases) and Auckland (4 cases) districts.

The cases were aged 30–39 years (14 cases), 40–49 years (6 cases), 20–29 years (2 cases), and 50–59 years (1 case).

All 23 cases were male.

Fourteen cases were European or Other ethnicity, three each were Māori and Asian, two were MELAA and one Pacific peoples.

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for all 23 cases and one (4.3%) was hospitalised.

Vaccination status was known for 22 (95.7%) cases. Of these, eight (36.4%) cases were not vaccinated, eight (36.4%) had received one vaccine dose and six (27.3%) had received two

or more doses.

All 23 mpox cases were men who have sex with men (MSM). Two cases also reported having sex with women.

Sixteen cases acquired their infection locally and six acquired their infection overseas. The source was unknown for one case. Of the overseas cases, five acquired their infection in Australia and one in Thailand.

One outbreak of mpox was reported in 2024, involving 12 cases (Table 26).

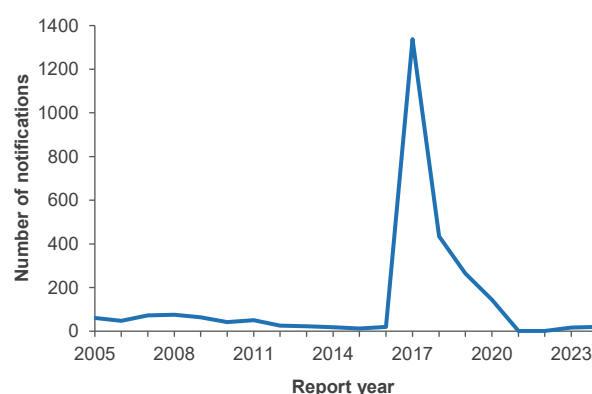
## Mumps

Vaccination against mumps was introduced to the national immunisation schedule in 1990 as part of the MMR vaccine,[21] and mumps became notifiable in June 1996.[3] The recommended schedule for MMR vaccine is two doses given at 12 months and 15 months of age.[21]

In 2024, 19 cases of mumps were notified, compared with 16 cases in 2023. The 2024 rate (0.4 per 100,000) was similar to the 2023 rate (0.3 per 100,000).

Figure 25 shows mumps notifications from 2005 to 2024. Prior to 2017, the last mumps epidemic occurred in 1994.[21]

**Figure 25. Mumps notifications by year, 2005–2024**



Waitemata, Auckland, Counties Manukau and Southern districts reported the highest number of cases (3 cases each).

The age groups with the highest number of cases were 30–39 years (8 cases) and 20–29 years (6 cases).

Eleven cases were male and eight were female.

Ethnicity was recorded for all 19 cases. Thirteen cases were Asian, four were European or Other and two were MELAA.

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for all 19 cases and one (5.3%) was hospitalised.

Vaccination status was known for 10 (52.6%) cases (Table 19). Of these, four (40.0%) cases were not vaccinated, two (20.0%) had received one vaccine dose and three (30.0%) had received two doses. One additional case was reported as being vaccinated but no dose information was available.

**Table 19. Age group and vaccination status of mumps notifications, 2024**

Age group	Total cases	One dose	Two doses	Vaccinated (no dose info)	Not vaccinated	Unknown
<1 year <sup>a</sup>	1	0	0	0	1	0
1–4 years	0	0	0	0	0	0
5–19 years	2	0	1	0	1	0
20+ years	16	2	2	1	2	9
<b>Total</b>	<b>19</b>	<b>2</b>	<b>3</b>	<b>1</b>	<b>4</b>	<b>9</b>

<sup>a</sup> Children aged less than 12 months are ineligible for vaccination.

Health New Zealand hospital discharge data for 2024 included 12 hospitalisations where mumps was the principal diagnosis (Table 36).

## Non-seasonal influenza

Non-seasonal influenza became a notifiable and quarantinable disease in New Zealand in April 2009, with confirmed cases requiring evidence of influenza A(H1N1)pdm09 infection (the pandemic strain). This strain was re-classified as seasonal on 1 January 2011.

In August 2013, influenza A(H7N9) became notifiable as non-seasonal influenza. No cases have been notified to date.

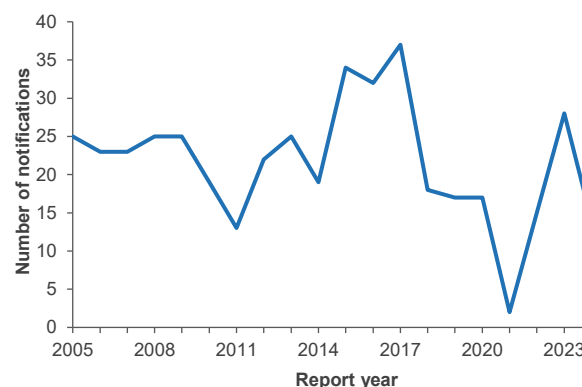
## Paratyphoid fever

In 2024, 14 cases of paratyphoid fever were notified, compared with 28 cases in 2023. The 2024 notification rate (0.3 per 100,000) was similar to the 2023 notification rate (0.5 per 100,000).

Figure 26 shows the number of notifications of paratyphoid fever each year since 2005. The case definition for paratyphoid fever was changed in December 2017 to exclude cases of *S. Paratyphi* B var. Java.[8] A low of two cases was reported in 2021 when the New Zealand

border was closed due to COVID-19 restrictions.

**Figure 26. Paratyphoid fever notifications by year, 2005–2024**



Note: Case definition changed in December 2017 to exclude cases due to *S. Paratyphi* B var. Java

The age groups with the highest number of cases were 20–29 years (4 cases), 30–39 years and 40–49 years (3 cases each).

Females (0.3 per 100,000, 8 cases) had a similar rate to males (0.2 per 100,000, 6 cases).

Ethnicity was recorded for all 14 cases. Thirteen cases were Asian, and one was European or Other.

Hospitalisation status was recorded for all 14 cases and 13 (92.9%) were hospitalised.

All 14 cases had travelled overseas. The countries visited were India (12 cases), Bolivia, Pakistan and Vietnam (1 case each). Some cases reported travel to more than one country.

The Enteric Reference Laboratory at PHF Science confirmed 14 isolates as *Salmonella* Paratyphi during 2024, consisting of 13 *S. Paratyphi* A and one *S. Paratyphi* B isolates. The 7-gene MLST types identified for the *S. Paratyphi* A isolates were ST85 (5 isolates), ST129 (5 isolates) and ST1938 (3 isolates), and the *S. Paratyphi* B isolate was ST86.

## Pertussis

Pertussis is a vaccine-preventable disease caused by the bacterium *Bordetella pertussis*. Epidemics occur every 2–5 years, with a periodicity that is less affected by mass vaccination than other childhood vaccine-preventable diseases.[21] Pertussis vaccination has been included in the national immunisation schedule in New Zealand since 1960. Pertussis has been notifiable since June 1996.[3]

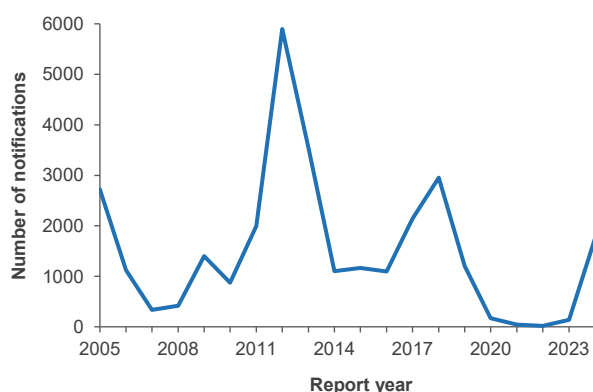


The recommended vaccination schedule for pertussis is a primary course of DTaP-IPV-HepB/Hib at ages 6 weeks, 3 months and 5 months, followed by booster doses at ages 4 years (DTaP-IPV) and 11 years (Tdap). Vaccination with Tdap is also recommended and funded for pregnant women from 16 weeks' gestation.[21]

In 2024, 1748 pertussis cases were notified, compared with 141 cases in 2023. The 2024 notification rate (32.7 per 100,000) was significantly higher than the 2023 rate (2.7 per 100,000).

The last national outbreak of pertussis began in October 2017 and continued throughout 2018. Pertussis notifications began to increase again in late 2024 (Figure 27). A national outbreak was declared in November 2024.

**Figure 27. Pertussis notifications by year, 2005–2024**



In 2024, the highest notification rate for pertussis was reported from Wairarapa District (180.8 per 100,000), followed by West Coast and Hawke's Bay districts (112.1 and 75.0 per 100,000 respectively) (Figure 28).

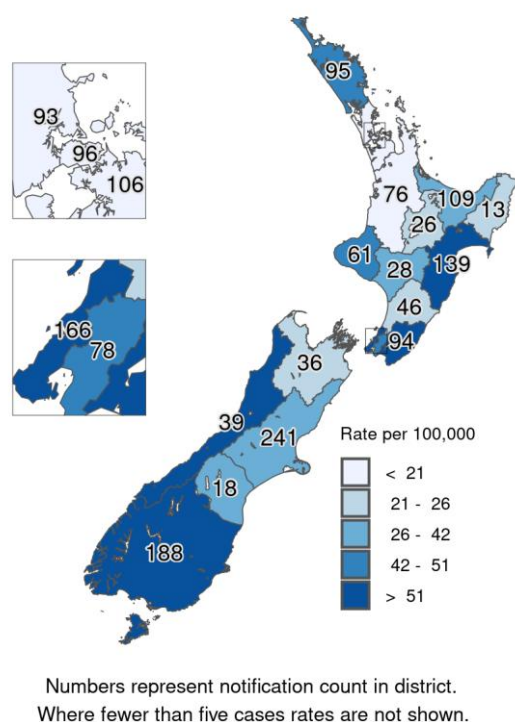
Infants aged less than 1 year (207.4 per 100,000) had the highest notification rate, followed by children aged 1–4 years (99.2 per 100,000), 5–9 years (89.5 per 100,000) and 10–14 years (87.8 per 100,000).

Females (34.8 per 100,000) had a higher rate than males (30.6 per 100,000).

Ethnicity was recorded for 1737 (99.4%) cases. The ethnic group with the highest notification rate was Māori (53.9 per 100,000), followed by MELAA (34.7 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

**Figure 28. Pertussis notifications by district, 2024**



Hospitalisation status was recorded for 1660 (95.0%) cases, of which 160 (9.6%) cases were hospitalised. For Pacific peoples, 27.0% (31/115) of cases were hospitalised and for Māori 14.6% (68/465) of cases were hospitalised. Almost two thirds (64.7%, 77/119) of cases aged less than 1 year were hospitalised.

There was one death due to pertussis reported in 2024 (Table 35), in an infant aged less than 1 year.

Vaccination status was known for 1223 (70.0%) cases (Table 20). Of these, 386 (31.6%) cases were not vaccinated, including 17 infants aged less than 6 weeks who were too young to be vaccinated. One hundred and twenty-six (10.3%) cases had received one dose of pertussis vaccine, 45 (3.7%) had received two doses and 550 (50.0%) had received three or more doses. A further 116 (9.5%) cases were reported as being vaccinated but no dose information was available. Information on maternal vaccination was not available for 2024.

There were 89 outbreaks of pertussis reported in 2024, involving 479 cases (Table 26).

Health New Zealand hospital discharge data for 2024 included 184 hospitalisations where pertussis was the principal diagnosis (Table 36).

**Table 20. Age group and vaccination status of pertussis notifications, 2024**

Age group	Total cases	One dose	Two doses	Three doses	Four doses	Five doses	Vaccinated (no dose info)	Not vaccinated	Unknown
0–5 weeks <sup>a</sup>	17	0	0	0	0	0	0	17	0
6 weeks–2 months	31	12	0	0	0	0	0	19	0
3–4 months	18	7	2	0	0	0	0	9	0
5 months–3 years	246	5	13	87	6	0	13	101	21
4–10 years	431	15	7	47	189	4	26	85	58
11+ years	1005	87	23	28	86	103	77	155	446
<b>Total</b>	<b>1748</b>	<b>126</b>	<b>45</b>	<b>162</b>	<b>281</b>	<b>107</b>	<b>116</b>	<b>386</b>	<b>525</b>

<sup>a</sup> Children aged less than six weeks are ineligible for vaccination.

## Plague

The last case of plague (*Yersinia pestis*) in New Zealand was reported in 1911. From 1900 to 1911, 21 cases of plague were recorded in New Zealand, nine of which were fatal.[29]

## Poliomyelitis (polio)

There were no polio notifications in 2024.

The NZPSU carries out active surveillance of acute flaccid paralysis (AFP) to demonstrate the absence of poliovirus. In 2024, nine cases of AFP were notified to the NZPSU. All nine cases were reviewed by the National Certification Committee for the Eradication of Poliomyelitis (NCCEP) and classified as non-polio.

Since the mass oral polio vaccine (OPV) immunisation campaigns in New Zealand in 1961 and 1962, six polio cases have been reported. All were either laboratory confirmed as vaccine associated (4 cases) or classified as probable vaccine-associated cases (2 cases).[21] The most recent vaccine-associated case occurred in 1999.[30]

No cases have been reported since the inactivated polio vaccine (IPV) replaced OPV in 2002.[21]

## Primary amoebic meningoencephalitis

The last case of primary amoebic meningoencephalitis (*Naegleria fowleri*) in New Zealand was notified in 2000. There were five prior cases, four of which were part of the same outbreak in 1968. All six cases were fatal and were linked to swimming in geothermal pools in the central North Island.[31]

## Q fever

Two cases of Q fever (*Coxiella burnetii*) were notified in 2024. Both cases were males aged 20–29 years who had worked on farms in Australia. Both cases were hospitalised.

Four cases of Q fever were notified in New Zealand between 1997 and 2023; one case each in 2004, 2010, 2011 and 2019. All four cases reported overseas travel during the incubation period.

## Rabies and other lyssaviruses

No cases of rabies or other lyssavirus were notified in 2024. New Zealand is classified as a rabies-free country.[32] An imported case of rabies was notified in 2023.[33]

## Rheumatic fever

In 2024, 208 cases of rheumatic fever were notified, compared with 183 cases in 2023. The 2024 notification rate (3.9 per 100,000) was higher than the 2023 rate (3.5 per 100,000).

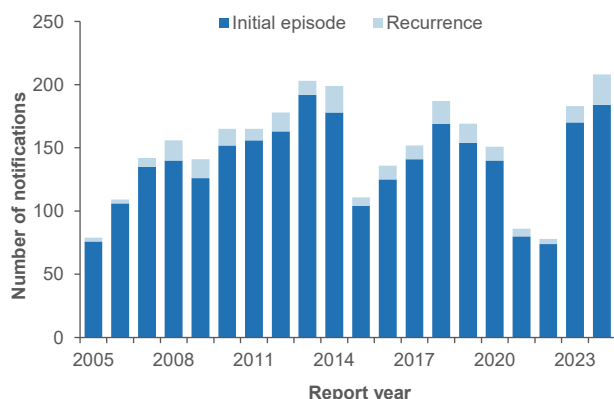
Of the 208 cases of rheumatic fever, 184 cases were initial episodes and 24 were recurrences.

Figure 29 shows the number of initial and recurrent episodes of rheumatic fever reported each year since 2005.

Counties Manukau District (13.3 per 100,000) had the highest rate, followed by Tairāwhiti (9.4 per 100,000), Auckland (5.5 per 100,000) and Lakes (4.2 per 100,000).

Children aged 10–14 years (20.4 per 100,000) had the highest rate, followed by those aged 5–9 years (13.7 per 100,000).

**Figure 29. Rheumatic fever notifications by year, 2005–2024**



Males (4.2 per 100,000) had a higher rate than females (3.6 per 100,000).

The ethnic group with the highest rate was Pacific peoples (34.2 per 100,000), followed by Māori (8.4 per 100,000). These two ethnic groups accounted for 95.2% of cases.

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for all 208 cases and 203 (97.6%) were hospitalised.

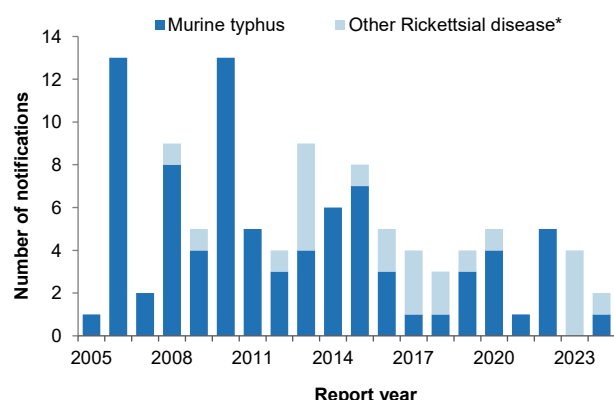
Health New Zealand hospital discharge data for 2024 included 298 hospitalisations where rheumatic fever was the principal diagnosis (Table 36).

### Rickettsial disease

This section includes murine typhus (*Rickettsia typhi*), typhus (*Rickettsia prowazekii*) and other rickettsial diseases caused by organisms of the *Rickettsia* genus.

Two cases of rickettsial disease were notified in 2024, compared with four cases in 2023 (Figure 30).

**Figure 30. Rickettsial disease notifications by year, 2005–2024**



\* Includes all other diseases caused by organisms of the *Rickettsia* genus, except typhus.

### Murine typhus (*Rickettsia typhi*)

A confirmed case of murine typhus was notified in 2024. The case was a female, aged 50–59 years and was hospitalised. The case lived in a rural area and reported exposure to rats.

### Typhus (*Rickettsia prowazekii*)

No cases of typhus have been reported from 1997 to 2024.

### Other rickettsial diseases

A confirmed case of rickettsial disease due to *Orientia tsutsugamushi* (formerly *Rickettsia tsutsugamushi*, scrub typhus) was notified in 2024.

The case was a male, aged 60–69 years and was hospitalised. The case was an Indian citizen who travelled to New Zealand to visit family and became unwell a day after arriving in New Zealand.

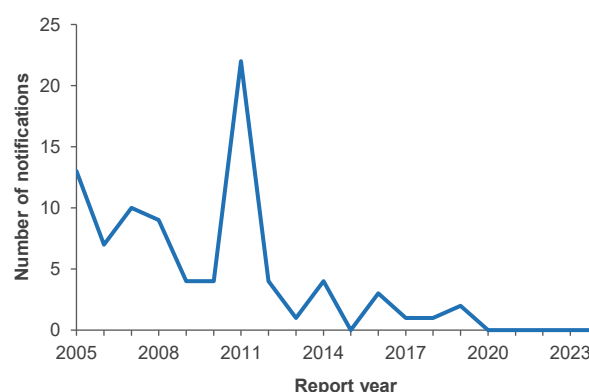
### Rubella

Rubella vaccination was introduced in 1970 for all children at age 4 years. In 1979 it was limited to girls at age 11 years and then extended to all children again when MMR was introduced in 1990. The recommended schedule for MMR vaccine is two doses given at 12 months and 15 months of age.[21] Rubella has been a notifiable disease since June 1996.[3]

No cases of rubella were notified in 2024. The last case was notified in 2019.

The number of rubella cases since 2005 is shown in Figure 31. The most recent peak in notifications was in 2011 with 22 cases. The last national rubella outbreak occurred in 1995.[21]

**Figure 31. Rubella notifications by year, 2005–2024**

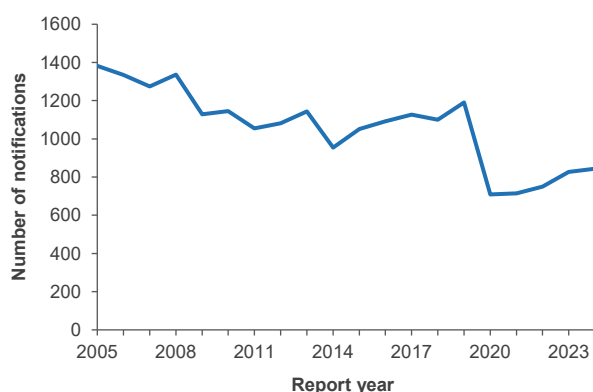


No cases of congenital rubella were reported to the NZPSU in 2024. There have been no reported cases of congenital rubella in New Zealand since 1998.

## Salmonellosis

In 2024, 844 cases of salmonellosis were notified, compared with 827 in 2023. The 2024 notification rate (15.8 per 100,000) was the same as the 2023 rate. The number of salmonellosis notifications was relatively stable between 2008 and 2019, then decreased in 2020 and 2021 due to COVID-19 border restrictions (Figure 32).

**Figure 32. Salmonellosis notifications by year, 2005–2024**



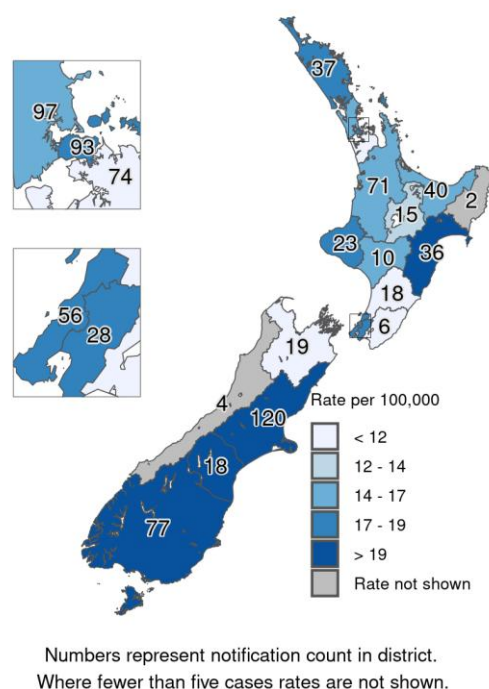
The highest rate of salmonellosis was reported from South Canterbury District (27.8 per 100,000), followed by Southern, Hawke's Bay and Canterbury districts (21.1, 19.4 and 19.1 per 100,000 respectively) (Figure 33).

Infants aged less than 1 year (79.5 per 100,000) had the highest notification rate, followed by children aged 1–4 years (33.6 per 100,000).

Females and males had similar rates (15.8 and 15.7 respectively).

Ethnicity was recorded for 838 (99.3%) cases. The ethnic group with the highest notification rate was Pacific peoples (17.8 per 100,000), followed by European or Other (16.4 per 100,000) and Māori (14.5 per 100,000).

**Figure 33. Salmonellosis notifications by district, 2024**



Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 805 (95.4%) cases, of which 273 (33.9%) cases were hospitalised.

The most common risk factors reported for salmonellosis in 2024 were overseas travel and consumption of food from retail premises (Table 21).

Nine outbreaks of salmonellosis were reported in 2024, involving 56 cases (Table 26).

**Table 21. Exposure to risk factors associated with salmonellosis, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Travelled overseas during the incubation period	328	401	115	45.0
Consumed food from retail premises	235	345	264	40.5
Recreational water contact	122	413	309	22.8
Contact with farm animals	91	428	325	17.5
Contact with other symptomatic people	90	450	304	16.7
Consumed untreated water	69	353	422	16.4
Contact with faecal matter	33	465	346	6.6
Contact with sick animals	18	473	353	3.7

<sup>a</sup> Percentage refers to the number of cases that answered "yes" out of the total number of cases for which this information was known. Some cases had more than one risk factor recorded.



The Enteric Reference Laboratory at PHF Science confirmed the identity of *Salmonella* isolated from 758 cases of salmonellosis in 2024. The most common serotypes identified were *S. Typhimurium* (261 cases) and *S. Enteritidis* (98 cases). Whole genome sequence analysis was used to confirm 7-gene sequence types and genomic clusters. The most common *S. Typhimurium* sequence types were ST19 (125 isolates) and ST568 (42 isolates).

### Severe acute respiratory syndrome (SARS)

No cases of SARS have been diagnosed in New Zealand since SARS emerged in Southern China in 2003.[8]

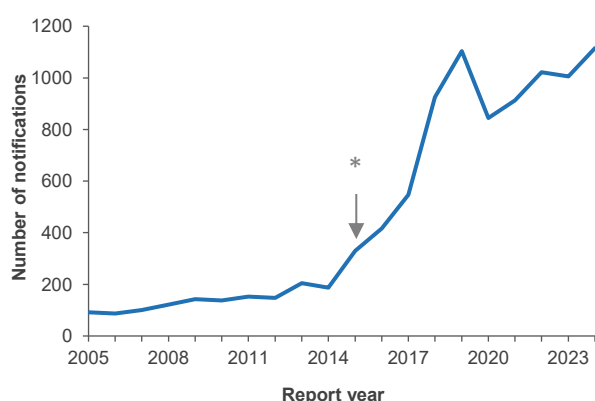
### Shiga toxin-producing *Escherichia coli* infection (STEC)

Shiga toxin-producing *Escherichia coli* (STEC) may also be referred to as Verocytotoxin-producing *E. coli* (VTEC) or enterohaemorrhagic *E. coli* (EHEC). STEC is now the preferred term.

In 2024, 1115 cases of STEC infection were notified, compared with 1005 cases in 2023. The 2024 notification rate (20.9 per 100,000) was higher than the 2023 rate (19.2 per 100,000).

The introduction of culture independent diagnostic testing (CIDT), which is particularly sensitive to detecting non-O157 serotypes, is the main contributor to the increase in STEC infection notifications since mid-2015 (Figure 34).

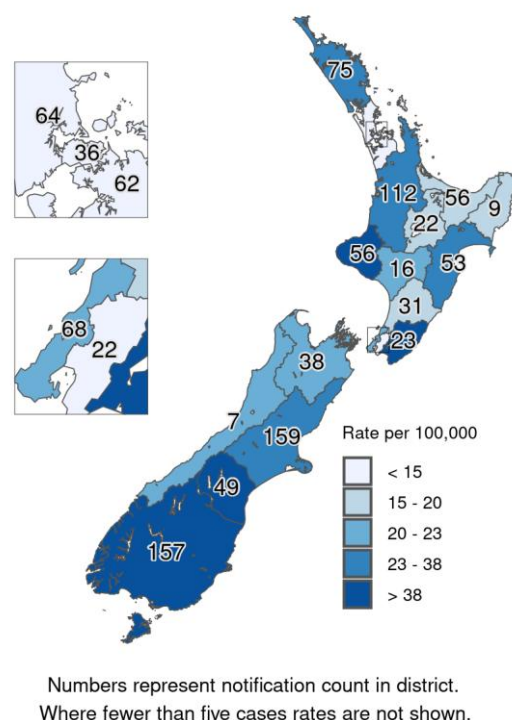
**Figure 34. STEC infection notifications by year, 2005–2024**



\*Screening of faecal specimens using PCR begins in some laboratories.

The highest rate of STEC infection notifications was from South Canterbury District (75.6 per 100,000), followed by Wairarapa, Southern and Taranaki districts (44.2, 43.0 and 42.7 per 100,000 respectively) (Figure 35).

**Figure 35. STEC infection notifications by district, 2024**



Numbers represent notification count in district. Where fewer than five cases rates are not shown.

Infants aged less than 1 year (69.1 per 100,000) had the highest notification rate, followed by children aged 1–4 years (66.8 per 100,000).

Females (21.8 per 100,000) had a higher rate than males (19.9 per 100,000).

Ethnicity was recorded for 1105 (99.1%) cases. The ethnic group with the highest notification rate was European or Other (26.5 per 100,000), followed by MELAA (24.4 per 100,000) and Māori (16.2 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 1032 (92.6%) cases, of which 291 (28.2%) cases were hospitalised. Of the 172 (59.1%) hospitalised cases that were serotyped, 70 (40.7%) were due to *E. coli* O157:H7 and 38 (22.1%) were due to *E. coli* O26:H11. Haemolytic uraemic syndrome (HUS) was confirmed in 21 hospitalised cases, and a serotype was determined in 17 of these: 11 were due to *E. coli* O26:H11, five were due to *E. coli* O157:H7 and one was due to *E. coli* O177:H25.

The most common risk factors reported for STEC infection cases in 2024 were contact with pets, farm animals and animal manure (Table 22).

**Table 22. Exposure to risk factors associated with STEC infection, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Contact with pets	424	65	626	86.7
Contact with farm animals	256	197	662	56.5
Contact with animal manure	123	247	745	33.2
Contact with recreational water	121	536	458	18.4
Contact with other animals	65	311	739	17.3
Contact with a person with similar symptoms	109	643	363	14.5
Contact with children in nappies	86	630	399	12.0
Travelled overseas during the incubation period	86	772	257	10.0

<sup>a</sup> Percentage refers to the number of cases that answered “yes” out of the total number of cases for which this information was known. Some cases had more than one risk factor recorded.

**Table 23. Foods consumed by STEC infection cases, 2024**

Foods consumed	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Chicken or poultry products	525	118	472	81.6
Raw fruit or vegetables	527	128	460	80.5
Dairy products	501	131	483	79.3
Beef or beef products	477	204	434	70.0
Fruit or vegetable juice	232	311	572	42.7
Lamb or hogget or mutton	247	401	467	38.1
Processed meat	238	422	455	36.1
Home kill meat	180	529	406	25.4
Pink or undercooked meat	85	570	460	13.0

<sup>a</sup> Percentage refers to the number of cases that answered “yes” out of the total number of cases for which this information was known.

The most commonly consumed foods among STEC infection cases were chicken or poultry products, raw fruit or vegetables, dairy products, and beef or beef products (Table 23).

Eight outbreaks of STEC infection were reported in 2024, involving 31 cases (Table 26).

The Enteric Reference Laboratory at PHF Science typed 723 isolates of STEC in 2024. Of these, 155 (21.4%) were identified as *E. coli* O157:H7 and 568 (78.6%) as *E. coli* non-O157 serotypes. The most common non-O157 serotypes identified were *E. coli* O26:H11 (19.4%, 140 isolates) and *E. coli* O128:H2 (11.8%, 85 isolates).

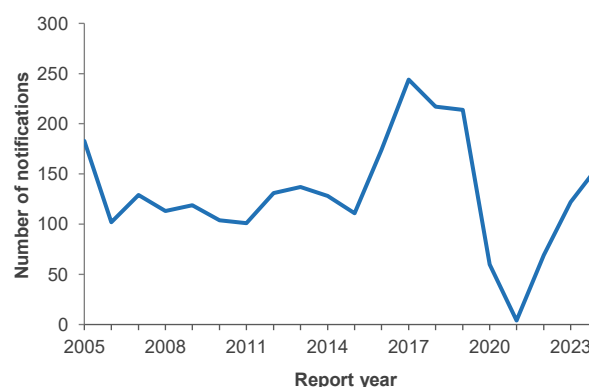
Health New Zealand hospital discharge data for 2024 included 39 hospitalisations where STEC infection was the principal diagnosis (Table 36).

## Shigellosis

In 2024, 157 cases of shigellosis were notified, compared with 122 cases in 2023. The 2024 notification rate (2.9 per 100,000) was higher than the 2023 rate (2.3 per 100,000).

Figure 36 shows shigellosis notifications by year from 2005 to 2024. There was a decrease in 2020 and 2021 due to COVID-19 border restrictions.

**Figure 36. Shigellosis notifications by year, 2005–2024**



Auckland, Counties Manukau, Waitemata and Capital & Coast districts had the highest notification rates (7.4, 6.4, 3.7 and 2.8 per 100,000 respectively).

Children aged 1–4 years (8.6 per 100,000) had the highest notification rate, followed by adults aged 30–39 years (4.5 per 100,000), 20–29 years (3.6 per 100,000) and 50–59 years (3.1 per 100,000).

Males (3.5 per 100,000) had a higher rate than females (2.3 per 100,000).

Ethnicity was recorded for 155 (98.7%) cases. The ethnic group with the highest notification rate was MELAA (14.2 per 100,000), followed by Pacific peoples (8.1 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for all 157 cases and 43 (27.4%) cases were hospitalised.

The most commonly reported risk factors for shigellosis were overseas travel and MSM sexual behaviour (Table 24). For the 102 cases who travelled overseas during the incubation period, the countries most commonly visited were India (24 cases), Samoa (15 cases), Indonesia (8 cases) and Fiji (6 cases). Some cases reported travel to more than one country.

Six outbreaks of shigellosis were reported in 2024, involving 20 cases (Table 26).

The Enteric Reference Laboratory at PHF Science confirmed 153 isolates as *Shigella* in 2024. The most common species identified were *S. sonnei* (81 isolates, 52.9%) and *S. flexneri* (69 isolates, 45.1%). All of the *S. sonnei* isolates were sequence type 152. The most common *S. flexneri* sequence type was ST245 (48 isolates, 69.6%).

## Taeniasis

Two cases of taeniasis were notified in 2024, compared with no cases in 2023.

The cases were aged 20–29 years and 30–39 years. Both cases were male. One case was Asian, and one was European or Other.

Both cases were overseas during the incubation period for the disease. Countries visited were Korea, South Africa and Namibia. One case visited more than one country.

A total of 74 cases of taeniasis have been notified since 1997, of which 73 (98.6%) reported a history of overseas travel. One case had an unknown travel history.

## Tetanus

Two cases of tetanus were notified in 2024. One case was a child aged 10–14 years who was unimmunised, and sustained a puncture wound from a wood splinter. The second case was an adult aged 40–49 years who was last vaccinated against tetanus over 10 years ago and sustained and injury from a dirty saw.

Between 1997 and 2023, a total of 36 tetanus cases were reported. Of these, four were children aged less than 10 years. Four deaths due to tetanus were reported, all in cases aged 70 years and over.

## Toxic shellfish poisoning

Toxic shellfish poisoning is notifiable under the category of acute gastroenteritis. There are four main types of shellfish poisoning in New Zealand: paralytic shellfish poisoning, neurotoxic shellfish poisoning, amnesic shellfish poisoning and diarrhetic shellfish poisoning.[34]

One case of toxic shellfish poisoning was notified in 2024, compared with no cases in 2023. The case was classified as suspected paralytic shellfish poisoning based on symptoms.

The case was a female, aged 50–59 years and was hospitalised.

The case had eaten commercially produced oysters.

**Table 24. Exposure to risk factors associated with shigellosis, 2024**

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Travelled overseas during the incubation period	102	51	4	66.7
Men who have sex with men <sup>b</sup>	19	27	33	41.3
Consumed water other than regular supply	26	47	84	35.6
Consumed food from retail premises	25	68	64	26.9
Contact with other symptomatic people	26	88	43	22.8
Recreational water contact	19	68	70	21.8
Contact with faecal matter	8	75	74	9.6

<sup>a</sup> Percentage refers to the number of cases that answered “yes” out of the total number of cases for which this information was known.

<sup>b</sup> Only cases in males aged 15 years and over are included for reporting of this risk factor. Some cases had more than one risk factor recorded.

## Trichinellosis

No cases of trichinellosis were notified in 2024.

Trichinellosis was added to the notifiable diseases schedule in 1988. Since then four cases have been reported, including two cases reported in 2001.[35]

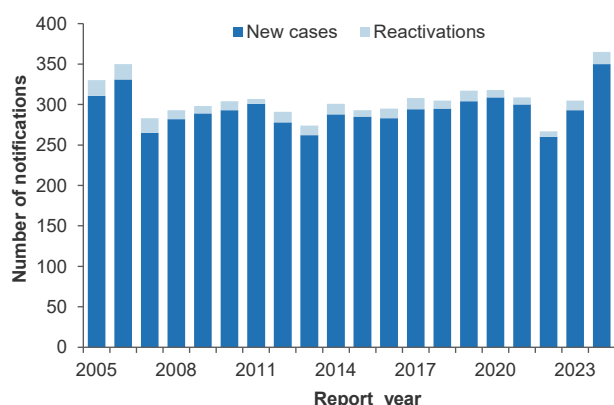
## Tuberculosis disease

In 2024, 365 cases of tuberculosis were notified, compared with 305 cases in 2023. The 2024 notification rate (6.8 per 100,000) was significantly higher than the 2023 rate (5.8 per 100,000). There was a total of 350 (95.9%) new cases and 15 (4.1%) reactivations.

Laboratory information was available for 362 (98.9%) tuberculosis cases. Of these, 329 (90.9%) cases were reported as laboratory confirmed.

Figure 37 shows the total number of new and reactivation tuberculosis cases reported since 2005. The number of cases notified in 2024 is the highest total during that time.

**Figure 37. Tuberculosis notifications by year, 2005–2024**

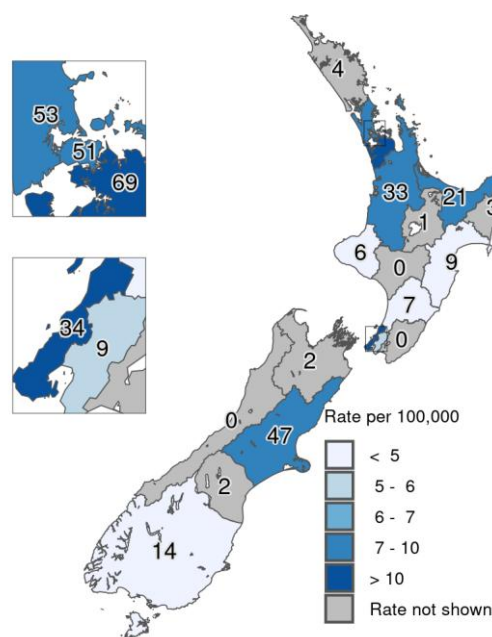


The highest notification rates for tuberculosis were reported from Counties Manukau, Capital & Coast and Auckland districts (10.8, 10.5 and 10.0 per 100,000 respectively (Figure 38).

Adults aged 30–39 years had the highest notification rate (12.0 per 100,000), followed by those aged 20–29 years and 40–49 years (9.5 and 8.9 per 100,000 respectively). Two cases were in children aged less than 5 years.

Males and females had similar rates (6.7 and 6.9 per 100,000 respectively).

**Figure 38. Tuberculosis notifications by district, 2024**



Numbers represent notification count in district.  
Where fewer than five cases rates are not shown.

Ethnicity was recorded for 361 (98.9%) cases. The ethnic group with the highest notification rate was Asian (33.3 per 100,000), followed by MELAA (20.6 per 100,000) and Pacific peoples (11.7 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 359 (98.3%) cases, of which 193 (53.8%) were hospitalised.

Six deaths were reported among tuberculosis cases, four were aged 70 years and over and two were aged 50–59 years.

There were two cases aged less than 5 years. One had not received the BCG vaccine and had congenital miliary tuberculosis. The other case had received the BCG vaccine as an infant.

The majority (330/362, 91.2%) of tuberculosis cases were born overseas. Of the cases born in New Zealand, 37.0% (10/27) had been, or were presently, living with a person born outside New Zealand.

All 15 reactivation cases were born overseas, of which 10 were diagnosed with previous tuberculosis disease overseas and four were diagnosed in New Zealand. The place of diagnosis was unknown for one case. Treatment status was recorded for 14 cases, and all had



previously been treated for the disease.

A fifth (48/249, 19.3%) of cases reported contact with a confirmed case of tuberculosis.

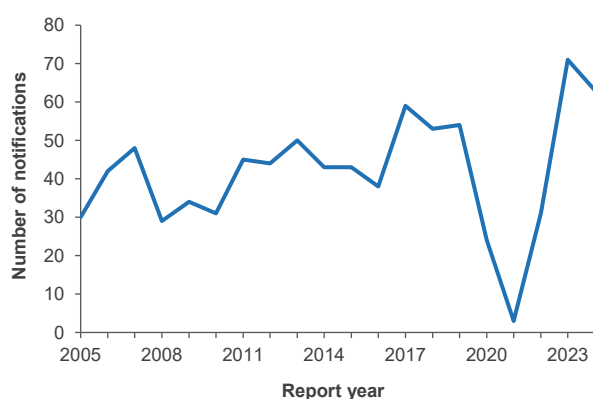
Health New Zealand hospital discharge data for 2024 included 265 hospitalisations where tuberculosis was the principal diagnosis (Table 36).

### Typhoid fever

In 2024, 63 cases of typhoid fever were notified compared with 71 cases in 2023. The 2024 notification rate (1.2 per 100,000) was similar to the 2023 rate (1.4 per 100,000).

Figure 39 shows an increasing trend in the number of typhoid fever notifications apart from in 2020 and 2021 when the New Zealand border was closed due to COVID-19 restrictions.

**Figure 39. Typhoid fever notifications by year, 2005–2024**



The highest notification rates for typhoid fever were reported from Counties Manukau and Waikato districts (2.5 and 2.3 per 100,000 respectively).

Notification rates were highest for children aged 1–4 years (3.7 per 100,000) and adults aged 30–39 years (2.2 per 100,000).

Males (1.3 per 100,000) had a slightly higher rate than females (1.0 per 100,000).

The ethnic group with the highest notification rate was Asian (6.8 per 100,000), followed by Pacific peoples (2.2 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 61 (96.8%) cases, of which 56 (91.8%) cases were hospitalised.

Of the 63 cases, 61 (96.8%) had travelled overseas during the incubation period. The majority of cases (46 cases, 75.4%) had visited India. One case had travelled overseas outside the incubation period and one case was locally acquired (linked to a 2023 outbreak).

One outbreak of typhoid fever was reported in 2024, involving two cases (Table 26).

The Enteric Reference Laboratory at PHF Science confirmed 60 isolates as *Salmonella* Typhi during 2024. The 7-gene MLST types identified were S. Typhi ST1 (33 isolates, 55.0%) and ST2 (27 isolates, 45.0%).

### Viral haemorrhagic fevers

No cases of viral haemorrhagic fever (including Ebola) have ever been reported in New Zealand.[8]

### Yellow fever

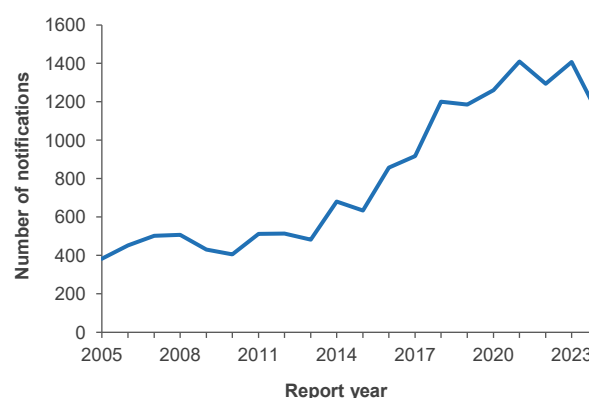
No cases of yellow fever have been notified in New Zealand since at least 1996.

### Yersiniosis

In 2024, 1140 cases of yersiniosis were notified, compared with 1408 cases in 2023. The 2024 notification rate (21.4 per 100,000) was a significant decrease from the 2023 rate (26.8 per 100,000).

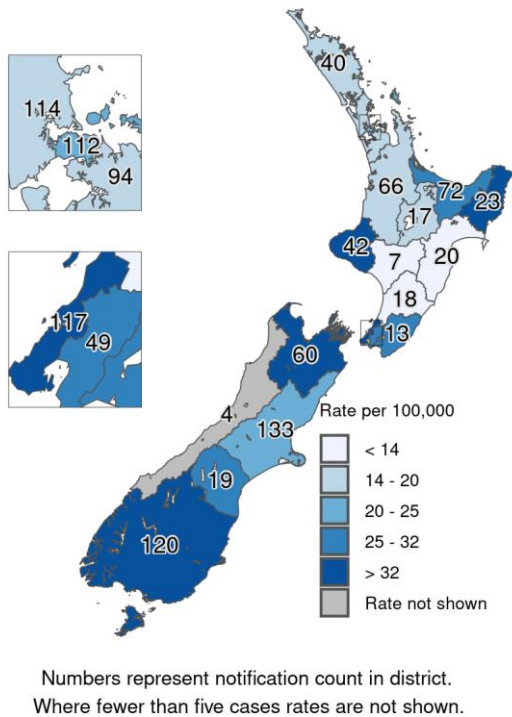
Prior to 2024, there was a steady increase in the number of yersiniosis notifications since 2014, before the introduction of PCR tests for *Yersinia* in 2017 (Figure 40). The introduction of culture independent diagnostic testing methods has had no significant impact on yersiniosis notifications.[36]

**Figure 40. Yersiniosis notifications by year, 2005–2024**



Tairāwhiti, Capital & Coast, Nelson Marlborough, Southern and Taranaki districts had the highest notification rates for yersiniosis (43.2, 36.0, 35.8, 32.8 and 32.1 per 100,000 respectively) (Figure 41).

Figure 41. Yersiniosis notifications by district, 2024



Infants aged less than 1 year had the highest notification rate (95.0 per 100,000), followed by children aged 1–4 years (53.7 per 100,000).

Females (22.8 per 100,000) had a higher rate than males (19.8 per 100,000).

Ethnicity was recorded for 1136 (99.6%) cases. The ethnic group with the highest notification rate was Asian (31.9 per 100,000), followed by MELAA (28.3 per 100,000).

Further information by district, age, sex and ethnic group is in Table 31 to Table 34 in the Appendix.

Hospitalisation status was recorded for 1109 (97.3%) cases, of which 203 (18.3%) cases were hospitalised.

Consumption of food from retail premises and contact with farm animals were the most commonly reported risk factors for yersiniosis (Table 25).

One outbreak of yersiniosis was reported in 2024, involving 18 cases (Table 26).

The Enteric Reference Laboratory at PHF Science confirmed 700 isolates as *Yersinia enterocolitica* and 12 as *Y. pseudotuberculosis* during 2024. The most common *Y. enterocolitica* biotypes identified were biotype 2/3 serotype O:9 (429 isolates, 61.3%), biotype 4 serotype O:3 (54 isolates, 7.7%) and biotype 1A (all serotypes, 41 isolates, 5.9%). Diagnostic laboratories in the upper half of the North Island no longer test for *Y. pseudotuberculosis* in faecal specimens, so this species is likely to be under detected.

Table 25. Exposure to risk factors associated with yersiniosis, 2024

Risk factor	Yes	No	Unknown	Percentage (%) <sup>a</sup>
Consumed food from retail premises	213	256	671	45.4
Contact with farm animals	140	363	637	27.8
Recreational water contact	97	401	642	19.5
Consumed untreated water	73	382	685	16.0
Contact with faecal matter	76	412	652	15.6
Contact with other symptomatic people	51	423	666	10.8
Travelled overseas during the incubation period	38	530	572	6.7

<sup>a</sup> Percentage refers to the number of cases that answered “yes” out of the total number of cases for which this information was known. Some cases had more than one risk factor recorded.

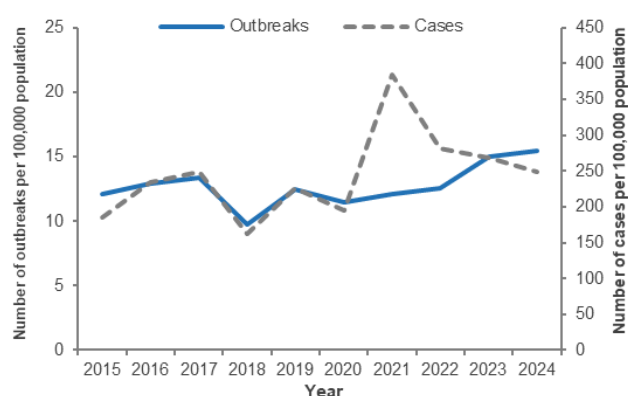


# OUTBREAKS

This section summarises outbreaks that were recorded in EpiSurv in 2024. There were 824 reported outbreaks in 2024, an increase from the 788 reported in 2023. A total of 13,273 cases were associated with outbreaks in 2024, compared with 14,095 cases in 2023.

The outbreak rate in 2024 (15.4 per 100,000) was similar to the rate reported in 2023 (15.0 per 100,000) (Figure 42). The 2024 case rate (248.6 per 100,000) was lower than the 2023 case rate (268.7 cases per 100,000).

**Figure 42. Outbreak rate and outbreak case rate by year, 2015–2024**



## Causal agents

A causal agent or condition was identified in 57.9% (477/824) of outbreaks, involving 61.1% (8108/13,273) of all outbreak-associated cases (Table 26). No specific pathogen was identified in 347 outbreaks, which were recorded as gastroenteritis (318 outbreaks), influenza-like illness (15 outbreaks) and acute respiratory infection (14 outbreaks).

Enteric agents were implicated in the majority of outbreaks (70.4%, 580/824) and associated cases (78.9%, 10,474/13,273) (Table 26). Norovirus was the most common causal agent implicated in outbreaks in 2024 (22.0%, 181/824) and accounted for 35.3% of outbreak cases.

Non-enteric agents accounted for 29.6% (244/824) of outbreaks and 21.1% (2799/13,273) of outbreak cases.

## Outbreak settings

Most outbreaks (83.4%, 687/824) were set in institutions, with childcare centres (40.4%, 333/824) and long-term care facilities (36.0%, 297/824) accounting for over three-quarters of the reported outbreaks and associated cases (Table 27).

## Modes of transmission

The most commonly reported mode of transmission in 2024 was person-to-person (93.0%, 766/824 outbreaks) (Table 28). Person-to-person transmission also accounted for the highest percentage of associated cases (94.8%, 12,581/13,273).

Table 26. Outbreaks and associated cases by pathogen, 2024

Pathogen or condition	Outbreaks <sup>1</sup>			Cases <sup>1</sup>	
	Total	% of outbreaks (n=824)	Median cases per outbreak	Total	% of cases (n=13,273)
<b>Enteric</b>	<b>580</b>	<b>70.4</b>	<b>14</b>	<b>10,474</b>	<b>78.9</b>
Norovirus	181	22.0	22	4684	35.3
Sapovirus	13	1.6	17	205	1.5
<i>Cryptosporidium</i>	13	1.6	15	176	1.3
<i>Campylobacter</i>	10	1.2	6	102	0.8
Rotavirus	9	1.1	21	241	1.8
<i>Salmonella</i> <sup>2</sup>	9	1.1	3	56	0.4
Shiga toxin-producing <i>E. coli</i> (STEC)	8	1.0	4	31	0.2
Astrovirus	6	0.7	15.5	94	0.7
<i>Shigella</i>	6	0.7	2.5	20	0.2
<i>Giardia</i>	5	0.6	5	48	0.4
<i>Clostridium perfringens</i>	3	0.4	5	180	1.4
Adenovirus	3	0.4	18	46	0.3
Hepatitis A	3	0.4	4	16	0.1
Histamine (scombroid) fish poisoning	3	0.4	3	10	0.1
<i>Escherichia coli</i> (not STEC) <sup>3</sup>	2	0.2	10.5	21	0.2
<i>Yersinia</i>	1	0.1	18	18	0.1
<i>Bacillus cereus</i>	1	0.1	2	2	0.0
Typhoid fever	1	0.1	2	2	0.0
Pathogen not identified	318	38.6	12.5	4820	36.3
<b>Non-enteric</b>	<b>244</b>	<b>29.6</b>	<b>7</b>	<b>2799</b>	<b>21.1</b>
Influenza <sup>4</sup>	95	11.5	14	1611	12.1
<i>Bordetella pertussis</i> <sup>5</sup>	89	10.8	3	479	3.6
SARS-CoV-2	70	8.5	9.5	865	6.5
Mpox	1	0.1	12	12	0.1

<sup>1</sup> More than one agent was reported in 26 outbreaks, therefore the numbers don't add up to the group totals.

<sup>2</sup> Includes non-typhoidal *Salmonella* species only.

<sup>3</sup> One *E. coli* outbreak was due to an enterotoxigenic strain and the other was due to an enteroaggregative strain.

<sup>4</sup> Includes outbreaks of influenza A (39 outbreaks, 799 cases), respiratory syncytial virus (RSV) (24 outbreaks, 409 cases), influenza-like illness (15 outbreaks, 157 cases), acute respiratory infection (14 outbreaks, 188 cases), human metapneumovirus (HMPV) (1 outbreak, 11 cases), coronavirus OC43 (1 outbreak, 16 cases), and parainfluenza (1 outbreak, 31 cases).

<sup>5</sup> Household outbreaks of pertussis were not required to be reported from October onwards.

**Table 27. Outbreaks and associated cases by setting of exposure, 2024**

Outbreak setting	Outbreaks <sup>1</sup>		Cases <sup>1</sup>	
	Total	% of outbreaks (n=824)	Total	% of cases (n=13,273)
<b>Institution</b>	<b>687</b>	<b>83.4</b>	<b>12,493</b>	<b>94.1</b>
Childcare centre	333	40.4	5645	42.5
Long term care facility	297	36.0	5556	41.9
School	24	2.9	695	5.2
Hospital (acute care)	23	2.8	261	2.0
Hostel / boarding house	2	0.2	179	1.3
Camp	2	0.2	45	0.3
Marae	1	0.1	59	0.4
Prison	1	0.1	17	0.1
Other institution	4	0.5	36	0.3
<b>Commercial food operators</b>	<b>33</b>	<b>4.0</b>	<b>496</b>	<b>3.7</b>
Restaurant / café / bakery	24	2.9	172	1.3
Caterers	4	0.5	36	0.3
Fast food restaurant	2	0.2	11	0.1
Supermarket / delicatessen	1	0.1	2	0.0
Other food outlet	2	0.2	275	2.1
<b>Workplace / Community / Other</b>	<b>118</b>	<b>14.3</b>	<b>663</b>	<b>5.0</b>
Home	94	11.4	362	2.7
Community, church, sports gathering	8	1.0	84	0.6
Workplace	3	0.4	83	0.6
Farm	2	0.2	15	0.1
Cruise ship, airline, tour bus, train	1	0.1	7	0.1
<b>Other setting</b>	<b>12</b>	<b>1.5</b>	<b>119</b>	<b>0.9</b>

<sup>1</sup> More than one setting was recorded in 10 outbreaks, therefore the numbers don't add up to the group totals.

**Table 28. Outbreaks and associated cases by mode of transmission, 2024**

Mode of transmission	Outbreaks				Cases	
	Primary mode	Secondary mode	Total	Percentage of outbreaks (n=824) <sup>1</sup>	Total	Percentage of cases (n=13,273) <sup>1</sup>
Person-to-person	694	72	766	93.0	12,581	94.8
Environmental	6	118	124	15.0	2650	20.0
Foodborne	40	3	43	5.2	937	7.1
Zoonotic	2	3	5	0.6	51	0.4
Other mode	0	4	4	0.5	47	0.4
Waterborne	3	1	4	0.5	15	0.1
Sexual contact	1	0	1	0.1	12	0.1
Unknown	0	0	19	2.3	212	1.6

<sup>1</sup> More than one mode of transmission was recorded for 138 outbreaks, therefore the totals add up to more than 100%.  
No outbreaks with vector borne or parenteral transmission were reported in 2024.

# APPENDIX: NATIONAL DATA AND TRENDS

**Table 29. Number of cases of notifiable diseases by year, 2015–2024**

Disease	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Campylobacteriosis	6218	7457	6482	6957	6203	5292	5729	5878	6092	5801
Chikungunya fever	48	28	8	11	11	4	0	5	9	7
COVID-19 <sup>a</sup>						2176	12033	2069115	418761	163718
Creutzfeldt-Jakob disease <sup>b</sup>	6	4	13	4	6	5	9	5	7	7
Cryptosporidiosis	696	1062	1192	1613	1035	735	702	612	831	1234
Dengue fever	125	191	161	294	222	50	7	23	55	124
Gastroenteritis (acute) <sup>c</sup>	503	510	319	228	485	353	240	329	462	440
Giardiasis	1510	1616	1648	1585	1749	1139	1041	707	898	844
Hepatitis A	47	35	58	68	67	21	8	58	34	68
Hepatitis B <sup>d</sup>	34	34	27	32	28	18	12	11	19	12
Hepatitis C <sup>d</sup>	35	31	21	34	24	28	35	23	31	20
Hepatitis NOS	4	8	10	7	9	11	8	2	8	5
Invasive pneumococcal disease	446	480	521	557	495	350	468	631	757	718
Legionellosis	246	247	221	175	161	160	179	234	238	183
Leptospirosis	63	85	138	109	89	61	77	120	170	101
Listeriosis	26	36	21	30	31	35	32	39	37	36
Malaria	38	26	42	36	27	17	8	18	54	29
Measles	10	103	15	30	2190	9	0	0	14	1
Meningococcal disease	64	75	112	120	139	35	42	72	57	43
Mpox <sup>e</sup>								41	8	23
Mumps	13	20	1338	435	264	144	1	1	16	19
Paratyphoid fever	34	32	37	18	17	17	2	15	28	14
Pertussis	1168	1093	2142	2955	1206	170	41	18	141	1748
Rheumatic fever <sup>f</sup>	111	136	152	187	169	151	86	78	183	208
Salmonellosis	1051	1091	1127	1100	1190	709	714	749	827	844
Shigellosis	111	174	244	217	214	60	4	69	122	157
STEC infection	330	417	547	925	1103	845	911	1022	1005	1115
Tuberculosis disease	293	295	308	305	317	318	309	267	305	365
Typhoid fever	43	38	59	53	54	24	3	31	71	63
Yersiniosis	634	858	917	1201	1185	1260	1410	1294	1408	1140
Zika virus	9	100	11	2	7	0	0	0	4	8

<sup>a</sup> COVID-19 become notifiable on 30 January 2020.

<sup>b</sup> Creutzfeldt-Jakob disease (CJD) data is provided by the National CJD Registry, University of Otago [19]

<sup>c</sup> Cases of acute gastroenteritis from a common source or person in a high-risk category (e.g. food handler or childcare worker) or foodborne intoxication, e.g., staphylococcal intoxication.

<sup>d</sup> Only acute cases of this disease are notifiable.

<sup>e</sup> Mpox became notifiable on 9 June 2024.

<sup>f</sup> Includes rheumatic fever initial episodes and recurrent cases.

**Table 30. Number of cases of rare notifiable diseases by year, 2015–2024**

Disease <sup>a</sup>	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Botulism	0	0	0	0	0	4	1	0	0	1
Brucellosis	1	0	1	3	2	2	1	1	4	1
Cholera	0	0	0	1	0	0	0	1	1	1
Cysticercosis	1	0	0	1	0	0	0	0	0	0
Decompression sickness	0	0	0	1	3	2	2	2	0	2
Diphtheria	2	1	1	0	1	0	0	2	3	2
<i>Haemophilus influenzae</i> type b	3	2	4	3	2	3	3	0	4	1
Hydatid disease	4	2	1	0	1	0	1	3	2	2
Leprosy	5	0	3	3	6	3	5	3	4	3
Q Fever	0	0	0	0	1	0	0	0	0	2
Rabies	0	0	0	0	0	0	0	0	1	0
Rickettsial disease	8	5	4	3	4	5	1	5	4	2
Ross River virus infection	4	4	7	1	5	3	1	0	0	0
Rubella	0	3	1	1	2	0	0	0	0	0
Taeniasis	5	4	4	4	5	3	1	3	0	2
Tetanus	1	1	0	0	0	0	1	1	1	2
Toxic shellfish poisoning	3	3	5	3	1	0	3	2	0	1

<sup>a</sup> No cases of the following notifiable diseases were reported in the past 10 years: anthrax, Barmah Forest virus infection, *Cronobacter* species invasive disease, highly pathogenic avian influenza, Japanese encephalitis, Middle East respiratory syndrome (MERS), non-seasonal influenza, plague, poliomyelitis, primary amoebic meningoencephalitis, severe acute respiratory syndrome (SARS), trichinellosis, viral haemorrhagic fever and yellow fever.

Table 31. Number of cases and rate per 100,000 population of notifiable diseases by Health District, 2024

Disease	Health District																			
	Northland		Waitemata		Auckland		Counties Manukau		Waikato		Lakes		Bay of Plenty		Tairāwhiti		Taranaki		Hawke's Bay	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Campylobacteriosis	270	131.8	713	105.6	523	102.3	552	86.4	592	125.6	126	104.7	285	101.3	61	114.4	228	174.0	192	103.6
COVID-19	5238	2557.6	14593	2161.6	24510	4795.5	11556	1808.7	13338	2830.0	2377	1974.3	6255	2223.6	1695	3180.1	3719	2838.9	4648	2508.4
Cryptosporidiosis	56	27.3	149	22.1	129	25.2	130	20.3	92	19.5	22	18.3	69	24.5	8	15.0	40	30.5	26	14.0
Dengue fever	0		15	2.2	32	6.3	7	1.1	11	2.3	3		8	2.8	1		3		2	
Gastroenteritis (acute) <sup>a</sup>	27	13.2	9	1.3	15	2.9	6	0.9	104	22.1	27	22.4	57	20.3	0		1		4	
Giardiasis	27	13.2	78	11.6	94	18.4	87	13.6	111	23.6	36	29.9	82	29.2	11	20.6	40	30.5	30	16.2
Hepatitis A	2		4		6	1.2	10	1.6	9	1.9	0		7	2.5	0		0		4	
Hepatitis B <sup>b</sup>	0		0		1		2		0		1		3		1		0		0	
Hepatitis C <sup>b</sup>	0		5	0.7	4		2		1		0		0		0		0		0	
Invasive pneumococcal disease	49	23.9	62	9.2	56	11.0	109	17.1	49	10.4	25	20.8	40	14.2	8	15.0	22	16.8	34	18.3
Legionellosis	5	2.4	24	3.6	12	2.3	34	5.3	13	2.8	4		17	6.0	0		4		3	
Leptospirosis	8	3.9	3		3		3		35	7.4	4		17	6.0	3		2		3	
Listeriosis	1		7	1.0	6	1.2	5	0.8	1		1		4		0		1		0	
Malaria	0		4		6	1.2	6	0.9	1		0		1		2		0		0	
Measles	0		0		1		0		0		0		0		0		0		0	
Meningococcal disease	3		2		5	1.0	7	1.1	4		3		1		0		3		1	
Mpox	0		1		4		2		1		0		0		0		0		0	
Mumps	0		3		3		3		0		1		1		0		0		2	
Paratyphoid fever	0		0		4		6	0.9	0		0		1		0		0		0	
Pertussis	95	46.4	93	13.8	96	18.8	106	16.6	76	16.1	26	21.6	109	38.7	13	24.4	61	46.6	139	75.0
Rheumatic fever <sup>c</sup>	7	3.4	24	3.6	28	5.5	85	13.3	11	2.3	5	4.2	3		5	9.4	2		4	
Salmonellosis	37	18.1	97	14.4	93	18.2	74	11.6	71	15.1	15	12.5	40	14.2	2		23	17.6	36	19.4
Shigellosis	4		25	3.7	38	7.4	41	6.4	5	1.1	0		6	2.1	0		3		2	
STEC infection	75	36.6	64	9.5	36	7.0	62	9.7	112	23.8	22	18.3	56	19.9	9	16.9	56	42.7	53	28.6
Tuberculosis disease	4		53	7.9	51	10.0	69	10.8	33	7.0	1		21	7.5	3		6	4.6	9	4.9
Typhoid fever	0		10	1.5	5	1.0	16	2.5	11	2.3	0		4		0		1		0	
Yersiniosis	40	19.5	114	16.9	112	21.9	94	14.7	66	14.0	17	14.1	72	25.6	23	43.2	42	32.1	20	10.8

<sup>a</sup> Cases of acute gastroenteritis from a common source or person in a high-risk category (eg, food handler or childcare worker) or foodborne intoxication, eg, staphylococcal intoxication.

<sup>b</sup> Only acute cases of this disease are notifiable.

<sup>c</sup> Includes rheumatic fever initial episodes and recurrent cases.

Note: Where fewer than five cases have been notified a rate has not been calculated and the cell has been left blank.



**Table 31. Number of cases and rate per 100,000 population of notifiable diseases by Health District, 2024 (continued)**

Disease	Health District																			
	Whanganui		MidCentral		Hutt Valley		Capital & Coast		Wairarapa		Nelson Marlborough		West Coast		Canterbury		South Canterbury		Southern	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Campylobacteriosis	65	92.5	200	102.8	133	81.3	291	89.6	72	138.5	177	105.6	47	135.1	649	103.3	117	180.6	508	139.0
COVID-19	2203	3133.7	6432	3306.9	9830	6012.2	13471	4146.2	838	1611.5	5722	3414.1	819	2353.4	22180	3530.7	2220	3425.9	12074	3304.3
Cryptosporidiosis	10	14.2	67	34.4	17	10.4	48	14.8	15	28.8	18	10.7	5	14.4	218	34.7	34	52.5	81	22.2
Dengue fever	2		2		2		8	2.5	0		4		0		18	2.9	0		6	1.6
Gastroenteritis (acute) <sup>a</sup>	6	8.5	0		8	4.9	35	10.8	1		6	3.6	9	25.9	94	15.0	2		29	7.9
Giardiasis	4		31	15.9	21	12.8	58	17.9	10	19.2	15	8.9	4		64	10.2	6	9.3	35	9.6
Hepatitis A	0		3		0		7	2.2	0		1		0		13	2.1	0		2	
Hepatitis B <sup>b</sup>	1		0		0		0		0		0		0		1		0		2	
Hepatitis C <sup>b</sup>	0		1		0		1		0		1		0		2		0		3	
Invasive pneumococcal disease	18	25.6	24	12.3	27	16.5	48	14.8	9	17.3	19	11.3	7	20.1	61	9.7	5	7.7	46	12.6
Legionellosis	0		2		2		1		0		5	3.0	1		37	5.9	3		16	4.4
Leptospirosis	2		0		1		1		1		6	3.6	3		0		1		5	1.4
Listeriosis	0		1		0		0		0		0		0		5	0.8	1		3	
Malaria	0		1		1		1		2		1		0		0		0		3	
Measles	0		0		0		0		0		0		0		0		0		0	
Meningococcal disease	1		1		3		0		1		0		1		5	0.8	0		2	
Mpox	0		1		0		0		0		0		0		8	1.3	0		6	1.6
Mumps	0		0		0		0		0		0		0		2		1		3	
Paratyphoid fever	0		0		0		0		0		0		1		2		0		0	
Pertussis	28	39.8	46	23.7	78	47.7	166	51.1	94	180.8	36	21.5	39	112.1	241	38.4	18	27.8	188	51.5
Rheumatic fever <sup>c</sup>	0		4		4		11	3.4	0		0		0		9	1.4	1		5	1.4
Salmonellosis	10	14.2	18	9.3	28	17.1	56	17.2	6	11.5	19	11.3	4		120	19.1	18	27.8	77	21.1
Shigellosis	0		1		1		9	2.8	1		1		2		10	1.6	4		4	
STEC infection	16	22.8	31	15.9	22	13.5	68	20.9	23	44.2	38	22.7	7	20.1	159	25.3	49	75.6	157	43.0
Tuberculosis disease	0		7	3.6	9	5.5	34	10.5	0		2		0		47	7.5	2		14	3.8
Typhoid fever	0		0		1		4		0		1		1		8	1.3	0		1	
Yersiniosis	7	10.0	18	9.3	49	30.0	117	36.0	13	25.0	60	35.8	4		133	21.2	19	29.3	120	32.8

<sup>a</sup> Cases of acute gastroenteritis from a common source or person in a high-risk category (eg, food handler or childcare worker) or foodborne intoxication, eg, staphylococcal intoxication.

<sup>b</sup> Only acute cases of this disease are notifiable.

<sup>c</sup> Includes rheumatic fever initial episodes and recurrent cases.

Note: Where fewer than five cases have been notified a rate has not been calculated and the cell has been left blank.

**Table 32. Number of cases and rate per 100,000 population of notifiable diseases by age group, 2024**

Disease	Age group											
	<1 year		1–4 years		5–9 years		10–14 years		15–19 years		20–29 years	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Campylobacteriosis	102	176.3	474	194.3	205	62.4	186	53.3	295	86.5	738	107.5
COVID-19	1849	3195.1	2325	953.3	2780	846.1	3939	1129.6	5128	1504.1	16747	2438.4
Cryptosporidiosis	24	41.5	241	98.8	138	42.0	59	16.9	50	14.7	165	24.0
Dengue fever	0		0		2		1		7	2.1	21	3.1
Gastroenteritis (acute) <sup>b</sup>	7	12.1	29	11.9	16	4.9	9	2.6	20	5.9	61	8.9
Giardiasis	8	13.8	118	48.4	38	11.6	18	5.2	13	3.8	117	17.0
Hepatitis A	0		6	2.5	8	2.4	6	1.7	5	1.5	17	2.5
Hepatitis B <sup>c</sup>	0		0		0		0		0		0	
Hepatitis C <sup>c</sup>	0		0		0		0		0		3	
Invasive pneumococcal disease	12	20.7	38	15.6	21	6.4	12	3.4	10	2.9	36	5.2
Legionellosis	1		0		0		0		0		1	
Leptospirosis	0		0		0		1		2		8	1.2
Listeriosis	0		1		0		1		1		3	
Malaria	0		0		1		1		2		8	1.2
Measles	0		0		0		0		0		0	
Meningococcal disease	8	13.8	7	2.9	2		1		8	2.3	4	
Mpox	0		0		0		0		0		2	
Mumps	1		0		0		1		1		6	0.9
Paratyphoid fever	0		2		1		0		0		4	
Pertussis	120	207.4	242	99.2	294	89.5	306	87.8	158	46.3	128	18.6
Rheumatic fever <sup>d</sup>	0		4		45	13.7	71	20.4	18	5.3	49	7.1
Salmonellosis	46	79.5	82	33.6	42	12.8	28	8.0	25	7.3	95	13.8
Shigellosis	2		21	8.6	5	1.5	3		6	1.8	25	3.6
STEC infection	40	69.1	163	66.8	51	15.5	38	10.9	47	13.8	100	14.6
Tuberculosis disease	1		1		2		6	1.7	15	4.4	65	9.5
Typhoid fever	1		9	3.7	6	1.8	3		3		10	1.5
Yersiniosis	55	95.0	131	53.7	31	9.4	29	8.3	32	9.4	127	18.5

<sup>a</sup> Total includes cases where age was unknown.

<sup>b</sup> Cases of acute gastroenteritis from a common source or person in a high-risk category (eg, food handler or childcare worker) or foodborne intoxication, eg, staphylococcal intoxication.

<sup>c</sup> Only acute cases of this disease are notifiable.

<sup>d</sup> Includes rheumatic fever initial episodes and recurrent cases.

Note: Where fewer than five cases have been notified a rate has not been calculated and the cell has been left blank.

**Table 32. Number of cases and rate per 100,000 population of notifiable diseases by age group, 2024 (continued)**

Disease	Age group											
	30–39 years		40–49 years		50–59 years		60–69 years		70+ years		Total <sup>a</sup>	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Campylobacteriosis	633	78.3	594	89.2	724	111.0	828	141.6	1022	164.9	5801	108.7
COVID-19	23001	2843.9	23540	3533.0	26578	4073.6	24819	4244.5	33011	5325.6	163718	3066.7
Cryptosporidiosis	283	35.0	121	18.2	59	9.0	64	10.9	30	4.8	1234	23.1
Dengue fever	39	4.8	22	3.3	17	2.6	13	2.2	2		124	2.3
Gastroenteritis (acute) <sup>b</sup>	66	8.2	58	8.7	66	10.1	48	8.2	52	8.4	440	8.2
Giardiasis	173	21.4	110	16.5	100	15.3	96	16.4	53	8.6	844	15.8
Hepatitis A	11	1.4	8	1.2	1		3		3		68	1.3
Hepatitis B <sup>c</sup>	1		5	0.8	6	0.9	0		0		12	0.2
Hepatitis C <sup>c</sup>	3		7	1.1	3		4		0		20	0.4
Invasive pneumococcal disease	52	6.4	67	10.1	93	14.3	132	22.6	245	39.5	718	13.4
Legionellosis	4		12	1.8	30	4.6	55	9.4	80	12.9	183	3.4
Leptospirosis	23	2.8	19	2.9	20	3.1	17	2.9	11	1.8	101	1.9
Listeriosis	2		0		5	0.8	5	0.9	18	2.9	36	0.7
Malaria	6	0.7	2		6	0.9	2		1		29	0.5
Measles	1		0		0		0		0		1	
Meningococcal disease	2		4		2		2		3		43	0.8
Mpox	14	1.7	6	0.9	1		0		0		23	0.4
Mumps	8	1.0	1		1		0		0		19	0.4
Paratyphoid fever	3		3		0		1		0		14	0.3
Pertussis	132	16.3	148	22.2	112	17.2	60	10.3	48	7.7	1748	32.7
Rheumatic fever <sup>d</sup>	19	2.3	2		0		0		0		208	3.9
Salmonellosis	95	11.7	103	15.5	124	19.0	114	19.5	90	14.5	844	15.8
Shigellosis	36	4.5	17	2.6	20	3.1	16	2.7	6	1.0	157	2.9
STEC infection	82	10.1	84	12.6	120	18.4	145	24.8	245	39.5	1115	20.9
Tuberculosis disease	97	12.0	59	8.9	39	6.0	32	5.5	48	7.7	365	6.8
Typhoid fever	18	2.2	6	0.9	4		2		1		63	1.2
Yersiniosis	157	19.4	147	22.1	122	18.7	136	23.3	173	27.9	1140	21.4

<sup>a</sup> Total includes cases where age was unknown.

<sup>b</sup> Cases of acute gastroenteritis from a common source or person in a high-risk category (eg, food handler or childcare worker) or foodborne intoxication, eg, staphylococcal intoxication.

<sup>c</sup> Only acute cases of this disease are notifiable.

<sup>d</sup> Includes rheumatic fever initial episodes and recurrent cases.

Note: Where fewer than five cases have been notified a rate has not been calculated and the cell has been left blank.

**Table 33. Number of cases and rate per 100,000 population of notifiable diseases by sex, 2024**

Disease	Sex					
	Male		Female		Total <sup>a</sup>	
	Cases	Rate	Cases	Rate	Cases	Rate
Campylobacteriosis	3210	120.8	2589	96.5	5801	108.7
COVID-19	62595	2355.9	100883	3761.9	163718	3066.7
Cryptosporidiosis	559	21.0	674	25.1	1234	23.1
Dengue fever	64	2.4	59	2.2	124	2.3
Gastroenteritis (acute) <sup>b</sup>	197	7.4	242	9.0	440	8.2
Giardiasis	448	16.9	396	14.8	844	15.8
Hepatitis A	34	1.3	34	1.3	68	1.3
Hepatitis B <sup>c</sup>	8	0.3	4		12	0.2
Hepatitis C <sup>c</sup>	17	0.6	3		20	0.4
Invasive pneumococcal disease	402	15.1	316	11.8	718	13.4
Legionellosis	117	4.4	66	2.5	183	3.4
Leptospirosis	64	2.4	37	1.4	101	1.9
Listeriosis	13	0.5	23	0.9	36	0.7
Malaria	21	0.8	8	0.3	29	0.5
Measles	1		0		1	
Meningococcal disease	25	0.9	18	0.7	43	0.8
Mpox	23	0.9	0		23	0.4
Mumps	11	0.4	8	0.3	19	0.4
Paratyphoid fever	6	0.2	8	0.3	14	0.3
Pertussis	813	30.6	932	34.8	1748	32.7
Rheumatic fever <sup>d</sup>	111	4.2	97	3.6	208	3.9
Salmonellosis	418	15.7	425	15.8	844	15.8
Shigellosis	94	3.5	63	2.3	157	2.9
STEC infection	529	19.9	585	21.8	1115	20.9
Tuberculosis disease	179	6.7	186	6.9	365	6.8
Typhoid fever	35	1.3	28	1.0	63	1.2
Yersiniosis	527	19.8	611	22.8	1140	21.4

<sup>a</sup> Total includes cases where sex was unknown.

<sup>b</sup> Cases of acute gastroenteritis from a common source or person in a high-risk category (eg, food handler or childcare worker) or foodborne intoxication, eg, staphylococcal intoxication.

<sup>c</sup> Only acute cases of this disease are notifiable.

<sup>d</sup> Includes rheumatic fever initial episodes and recurrent cases.

Note: Where fewer than five cases have been notified a rate has not been calculated and the cell has been left blank.

**Table 34. Number of cases and rate per 100,000 population of notifiable diseases by ethnic group, 2024**

Disease	Ethnic group											
	Māori		Pacific peoples		Asian		MELAA <sup>a</sup>		European or Other		Total <sup>b</sup>	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Campylobacteriosis	594	66.8	186	51.7	585	72.1	84	108.1	4092	127.9	5801	108.7
COVID-19	19165	2154.9	8667	2407.6	19532	2408.3	2183	2808.7	113588	3549.2	163718	3066.7
Cryptosporidiosis	199	22.4	64	17.8	77	9.5	17	21.9	871	27.2	1234	23.1
Dengue fever	6	0.7	5	1.4	24	3.0	8	10.3	79	2.5	124	2.3
Gastroenteritis (acute) <sup>c</sup>	60	6.7	19	5.3	55	6.8	6	7.7	293	9.2	440	8.2
Giardiasis	99	11.1	13	3.6	115	14.2	27	34.7	589	18.4	844	15.8
Hepatitis A	13	1.5	3		36	4.4	6	7.7	9	0.3	68	1.3
Hepatitis B <sup>d</sup>	1		3		3		0		4		12	0.2
Hepatitis C <sup>d</sup>	6	0.7	1		1		1		11	0.3	20	0.4
Invasive pneumococcal disease	191	21.5	128	35.6	41	5.1	6	7.7	350	10.9	718	13.4
Legionellosis	24	2.7	7	1.9	16	2.0	0		136	4.2	183	3.4
Leptospirosis	11	1.2	4		2		1		83	2.6	101	1.9
Listeriosis	9	1.0	4		6	0.7	0		17	0.5	36	0.7
Malaria	0		10	2.8	11	1.4	4		4		29	0.5
Measles	0		0		0		0		1		1	
Meningococcal disease	17	1.9	5	1.4	2		0		19	0.6	43	0.8
Mpox	3		1		3		2		14	0.4	23	0.4
Mumps	0		0		13	1.6	2		4		19	0.4
Paratyphoid fever	0		0		13	1.6	0		1		14	0.3
Pertussis	479	53.9	120	33.3	59	7.3	27	34.7	1052	32.9	1748	32.7
Rheumatic fever <sup>e</sup>	75	8.4	123	34.2	3		3		4		208	3.9
Salmonellosis	129	14.5	64	17.8	110	13.6	10	12.9	525	16.4	844	15.8
Shigellosis	14	1.6	29	8.1	30	3.7	11	14.2	71	2.2	157	2.9
STEC infection	144	16.2	27	7.5	66	8.1	19	24.4	849	26.5	1115	20.9
Tuberculosis disease	13	1.5	42	11.7	270	33.3	16	20.6	20	0.6	365	6.8
Typhoid fever	0		8	2.2	55	6.8	0		0		63	1.2
Yersiniosis	124	13.9	37	10.3	259	31.9	22	28.3	694	21.7	1140	21.4

<sup>a</sup> Middle Eastern/Latin American/African.

<sup>d</sup> Only acute cases of this disease are notifiable.

<sup>b</sup> Total includes cases where ethnicity was unknown.

<sup>e</sup> Includes rheumatic fever initial episodes and recurrent cases.

<sup>c</sup> Cases of acute gastroenteritis from a common source or person in a high-risk category (eg, food handler or childcare worker) or foodborne intoxication, eg, staphylococcal intoxication.

Note: Denominator data are based on the proportion of people in each ethnic group from the estimated resident 2018 census population applied to the 2024 mid-year population estimates. Ethnicity is prioritised in the following order: Māori, Pacific peoples, Asian, MELAA and European or Other (including New Zealander) ethnic groups.

Where fewer than five cases have been notified a rate has not been calculated and the cell has been left blank.

**Table 35. Deaths due to notifiable diseases, as recorded in EpiSurv, 2005–2024**

Disease	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Campylobacteriosis	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Gastroenteritis (acute) <sup>a</sup>	0	0	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0
<i>Haemophilus influenzae</i> type b	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Hepatitis B	1	0	1	0	0	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0
Invasive pneumococcal disease <sup>b</sup>				7	33	25	30	29	18	23	27	22	27	25	12	11	27	26	25	25
Legionellosis	4	2	1	4	2	5	4	6	3	1	4	1	5	3	2	2	4	5	4	1
Leptospirosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Listeriosis - non-pregnancy associated	1	0	2	3	2	3	1	4	2	3	1	0	0	2	0	1	3	4	5	0
Listeriosis - pregnancy associated	4	1	2	2	2	4	0	2	3	2	3	2	0	0	4	1	1	2	2	1
Malaria	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Meningococcal disease	14	7	7	8	5	6	13	6	4	3	4	2	9	10	10	3	3	3	1	2
Non seasonal influenza A (H1N1) <sup>c</sup>					36	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pertussis	1	0	0	0	0	0	1	2	1	0	0	0	0	0	0	1	0	0	3	1
Rabies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Salmonellosis	1	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Shigellosis	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
STEC infection	0	0	0	0	1	0	0	0	0	1	0	0	0	2	1	0	0	1	0	0
Tetanus	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Tuberculosis disease	4	6	3	4	4	9	3	4	3	5	6	5	1	4	3	5	6	3	3	6
Typhoid fever	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0

<sup>a</sup> Cases of acute gastroenteritis from a common source or person in a high-risk category (eg, food handler or childcare worker) or foodborne intoxication, eg, staphylococcal intoxication.

<sup>b</sup> Invasive pneumococcal disease became notifiable on 17 October 2008.

<sup>c</sup> Non-seasonal influenza became notifiable on 26 April 2009. Deaths recorded in 2009 and 2010 were due to influenza A(H1N1)pdm09. Influenza A(H1N1)pdm09 virus was re-classified as seasonal influenza from 1 January 2011.

Note: The numbers in this table are those recorded in EpiSurv where the notifiable disease was the primary cause of death. Information on a death is most likely to be reported when it occurs close to the time of notification and investigation.



**Table 36. Hospital admissions for selected notifiable diseases, 2022–2024**

Disease	ICD 10 codes	2022		2023		2024	
		Prin <sup>a</sup>	Oth <sup>b</sup>	Prin <sup>a</sup>	Oth <sup>b</sup>	Prin <sup>a</sup>	Oth <sup>b</sup>
Arboviral diseases	A83, A84, A85.2, A92, A93, A94, B33.1	1	1	1	1	4	1
Brucellosis	A23	1	2	2	2	2	0
Campylobacteriosis	A04.5	816	190	823	215	924	201
Cholera	A00	3	4	0	1	3	5
Creutzfeldt-Jakob disease	A81.0	6	5	7	3	6	3
Cryptosporidiosis	A07.2	47	23	58	11	71	36
Cysticercosis	B69	1	0	1	4	3	4
Decompression sickness	T70.3	17	2	8	1	10	3
Dengue fever	A90, A91	15	1	19	0	48	1
Diphtheria	A36	1	0	1	4	1	1
Giardiasis	A07.1	23	24	21	23	31	26
Hepatitis A	B15	35	43	36	29	53	35
Hepatitis B	B16	10	9	16	11	9	12
Hepatitis C	B17.1	3	9	2	10	2	12
Hydatid disease	B67.0-B67.4	0	0	3	0	0	0
Legionellosis	A48.1	214	35	199	47	160	37
Leprosy	A30	1	4	1	0	2	1
Leptospirosis	A27	96	26	134	41	88	19
Listeriosis	A32	20	20	26	25	19	24
Malaria	B50-B54	18	3	49	2	22	2
Measles	B05	1	1	12	1	4	0
Meningococcal disease	A39	77	29	52	21	39	18
Mumps	B26	10	2	11	3	12	5
Paratyphoid	A01.1-A01.4	10	0	4	1	13	0
Pertussis	A37	8	4	49	34	184	42
Poliomyelitis	A80	0	0	0	0	0	0
Q fever	A78	0	0	0	0	1	0
Rheumatic fever	I00, I01, I02	113	25	234	32	298	45
Rickettsial diseases	A75, A77, A79	3	2	2	3	3	3
Rubella	B06	0	0	0	0	0	1
Salmonellosis	A02	194	68	201	100	211	73
Shigellosis	A03	27	41	42	37	55	57
STEC infection	A04.3	35	33	25	23	39	32
Taeniasis	B68	0	0	0	0	0	0
Tetanus	A33-A35	6	0	3	1	4	2
Tuberculosis	A15-A19, P37.0	182	120	202	132	265	174
Typhoid	A01.0	24	2	66	4	56	5
Viral haemorrhagic fevers	A96, A98, A99	0	0	0	0	0	0
Yellow fever	A95	0	0	0	0	0	0
Yersiniosis	A04.6	107	95	124	94	89	99

<sup>a</sup> Principal diagnosis.

<sup>b</sup> Other relevant diagnosis.

Note: Hospital admission data may include multiple admissions (to the same or different hospitals) for the same case, and admissions may relate to cases first diagnosed in previous years.

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# ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Description
AFP	Acute flaccid paralysis
BCG	Bacillus Calmette-Guérin
CIDT	Culture independent diagnostic testing
CJD	Creutzfeldt-Jakob disease
CRS	Congenital rubella syndrome
COVID-19	Coronavirus disease
DTaP-IPV	Diphtheria, tetanus, acellular pertussis, inactivated polio vaccine
DTaP-IPV-HepB/Hib	Diphtheria, tetanus, acellular pertussis, inactivated polio, hepatitis B and <i>Haemophilus influenzae</i> type b vaccine
EHEC	Enterohaemorrhagic <i>Escherichia coli</i>
Hib	<i>Haemophilus influenzae</i> serotype b
HIV	Human immunodeficiency virus
HPAI	Highly pathogenic avian influenza
HUS	Haemolytic uraemic syndrome
ICD-10	International Classification of Diseases 10 <sup>th</sup> revision
IPD	Invasive pneumococcal disease
IPV	Inactivated polio vaccine
MELAA	Middle Eastern/Latin American/African
MenACWY	Meningococcal quadrivalent conjugate vaccine
MenB	Meningococcal group B
MERS	Middle East Respiratory Syndrome
MIC	Minimum inhibitory concentration
MLST	Multilocus sequence typing
MMR	Measles, mumps and rubella
MSM	Men who have sex with men
NCCEP	National Certification Committee for the Eradication of Polio
NHI	National Health Index
NMDS	National Minimum Dataset
NOS	Not otherwise specified
OPV	Oral polio vaccine
NZPSU	New Zealand Paediatric Surveillance Unit
PCR	Polymerase chain reaction
PCV	Pneumococcal conjugate vaccine
PCV7	7-valent pneumococcal conjugate vaccine
PCV10	10-valent pneumococcal conjugate vaccine
PCV13	13-valent pneumococcal conjugate vaccine
PHS	Public health service
RSV	Respiratory syncytial virus
SARS	Severe acute respiratory syndrome
ST	Sequence type
STEC	Shiga toxin-producing <i>Escherichia coli</i>
sv	Serovar
Tdap	Tetanus, diphtheria and acellular pertussis vaccine
VTEC	Verocytotoxin-producing <i>Escherichia coli</i>
WHO	World Health Organization
23PPV	23-valent pneumococcal polysaccharide vaccine



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