Notifications of potentially waterborne diseases

This report presents information on how New Zealanders' health is affected by three potentially waterborne diseases: campylobacteriosis, giardiasis and cryptosporidiosis, using data extracted from the EpiSurv database in March 2026.

Key facts

- Children aged under four years experienced much higher notification rates for all waterborne diseases covered in this surveillance report.
- The age-standardised rate of campylobacteriosis notifications was 98.7 per 100,000 people in 2024, continuing a steady decline post-2008.
- The notification rate for cryptosporidiosis was 25.7 per 100,000 people, somewhat higher than previous years due to a cluster of outbreaks early in 2024.
- The notification rate for giardiasis was 14.5 per 100,000 people, one of the lowest since 2001.

Waterborne diseases and the environment

Campylobacteriosis is one of the most common bacterial infections in humans, and whilst it is most notably a foodborne disease, evidence shows that outbreaks can also be attributed to water contamination (Wilson et al., 2008). *Campylobacter* normally inhabit the intestine of warm-blooded animals but can cause waterborne infections resulting from water contamination from fecal run-off from farms.

Other important waterborne enteric pathogens that can be transmitted via wastewater include *Cryptosporidium* and *Giardia* (Pitkänen 2013). Cryptosporidiosis and giardiasis are infections caused by protozoal parasites and can contaminate waterways, resulting in waterborne transmission of disease (Carmena 2010).

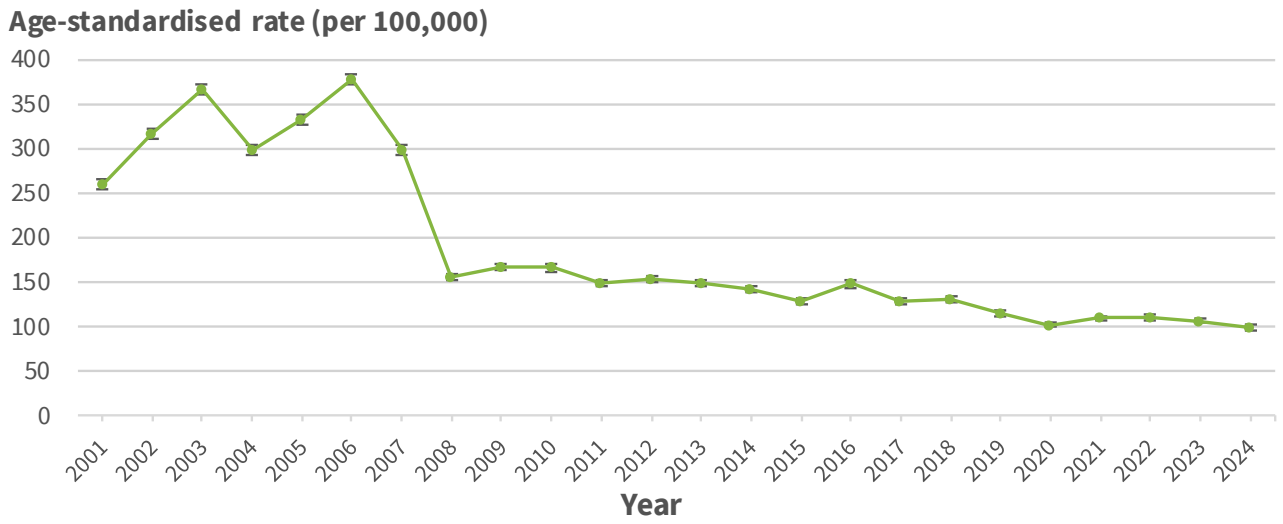
Waterborne diseases are often causative agents of gastroenteritis in humans. Although the infection can be self-limiting in most people, it can be lethal for immunocompromised individuals. Waterborne diseases can often remain in waterways outside of a human host for extended periods, making transmission through drinking and recreational water an increased risk.

Potentially waterborne disease notification rates

The campylobacteriosis notification rate in 2024 was 98.7 per 100,000 people (5,943 notifications), a slight decrease from the previous year and the lowest rate on record, continuing a declining trend from 2008 onwards (Figure 1). The large decrease in the campylobacteriosis rate leading up to 2008 has been attributed to the introduction of food safety regulations for poultry production in 2007 and 2008 (Duncan

2014). Consequently, the decline represents a drop in the number of food-related cases. It is unlikely to represent a change in the pattern of cases contracted through contact with contaminated water.

Figure 1: Campylobacteriosis notification rate, 2001–2024

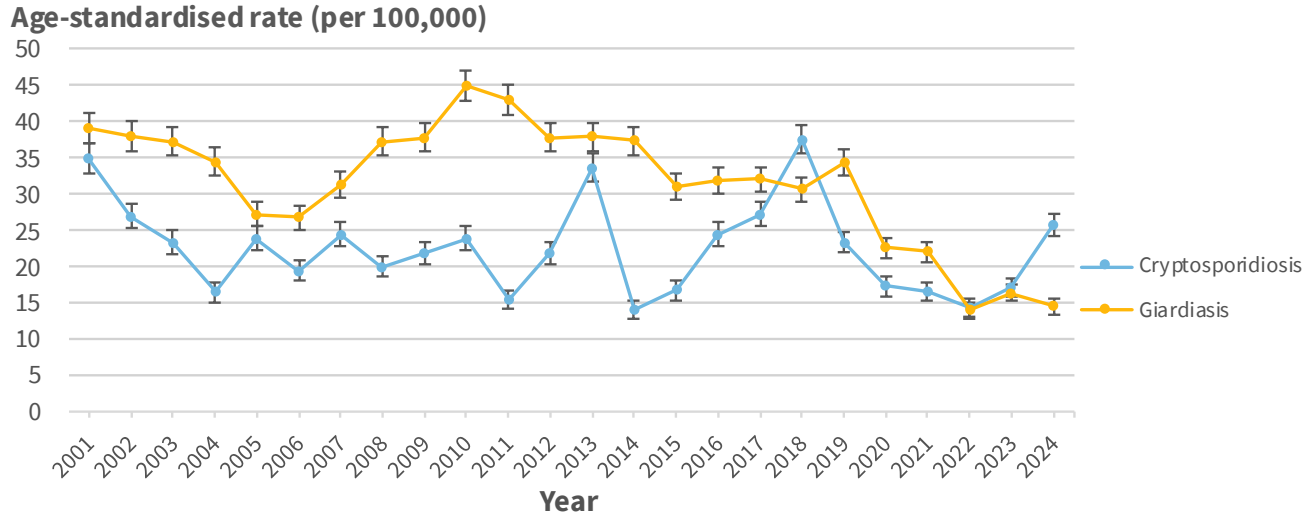


Note: The 95% confidence intervals for this graph are displayed as vertical bars.
Source: PHF Science 2026

In 2024, the age-standardised notification rate for cryptosporidiosis was 25.7 per 100,000 people (1,145 notifications). The rate for cryptosporidiosis has been fairly volatile over time, and the sudden rise in 2024 can be linked to several outbreaks of the parasite across the country, particularly in urban regions of Auckland, Waikato and Canterbury. Approximately half of those cases (where information was available) involved potential links to recreational swimming pools (Stuff, 2024).

There was a notable drop in the rate of giardiasis between 2019 and 2020, following a period of no real change and with no clear cause. In 2024, the rates of giardiasis remained low at 14.5 per 100,000, based on 735 cases (Figure 2).

Figure 2: Cryptosporidiosis and giardiasis notification rates, 2001–2024

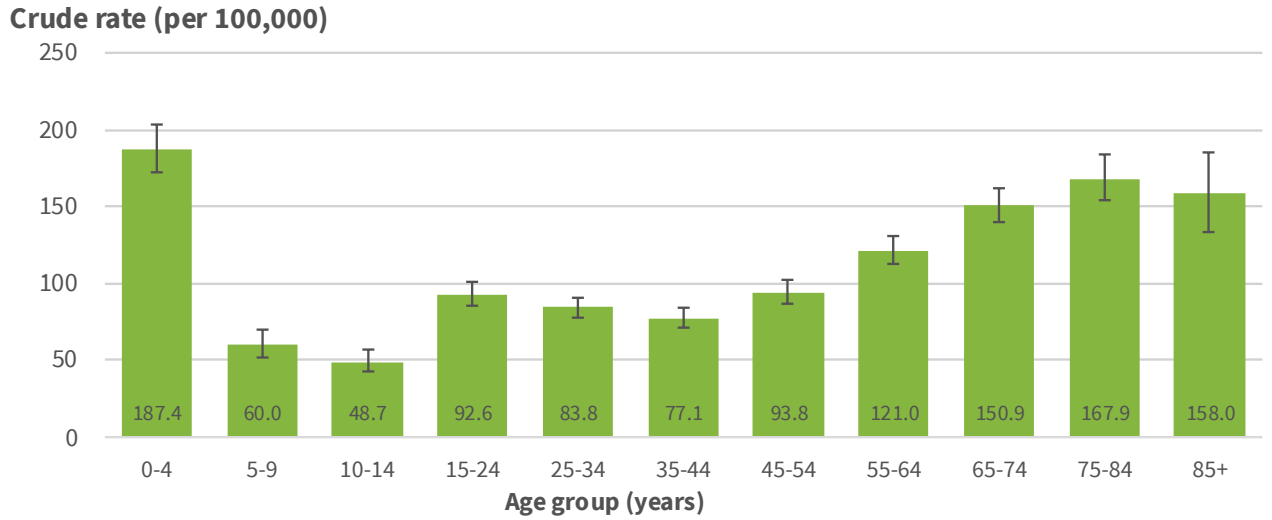


Note: The 95% confidence intervals for this graph are displayed as vertical bars.
Source: PHF Science 2026

Young children have the highest notified rates of all waterborne diseases

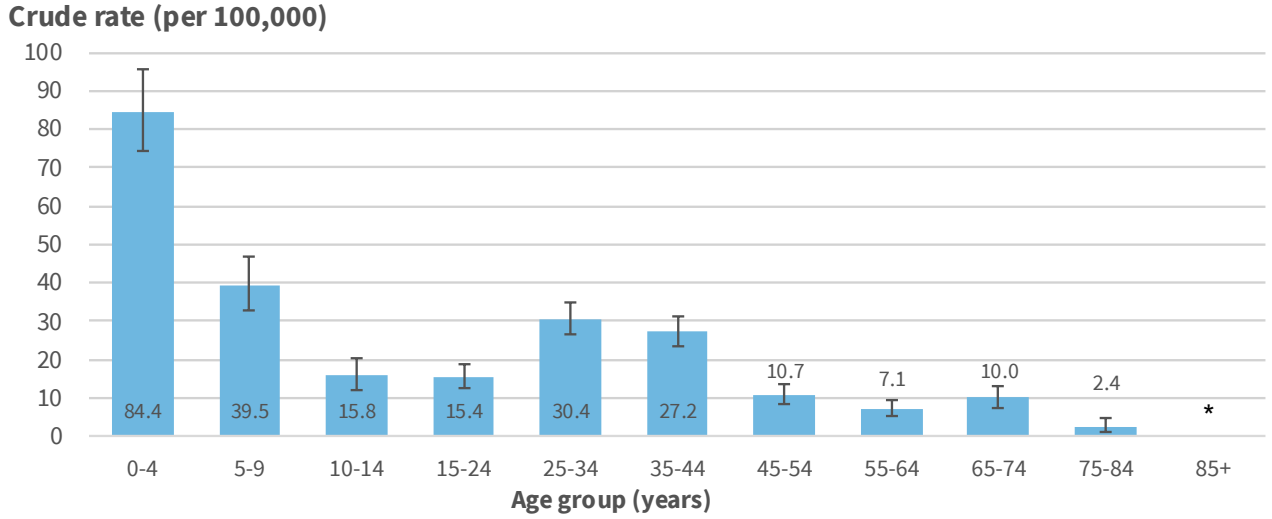
In 2024, the highest notification rates for campylobacteriosis, giardiasis and cryptosporidiosis occurred in very young children aged 0–4 years (Figures 3a-c). This is in keeping with results for previous years. Young children often have higher levels of exposure to potentially waterborne disease because they are less disciplined in managing their hand and food hygiene practices (eg, handwashing) and have less developed immune systems (Sinclair, Jones, and Gerba 2009). It is also more likely that an ill child will be taken to seek medical attention by their parents (and thus become a notified case) than an adult case, who may choose to prioritise self-treatment over visiting a doctor.

Figure 3a: Notification rates for campylobacteriosis, by age group, 2024



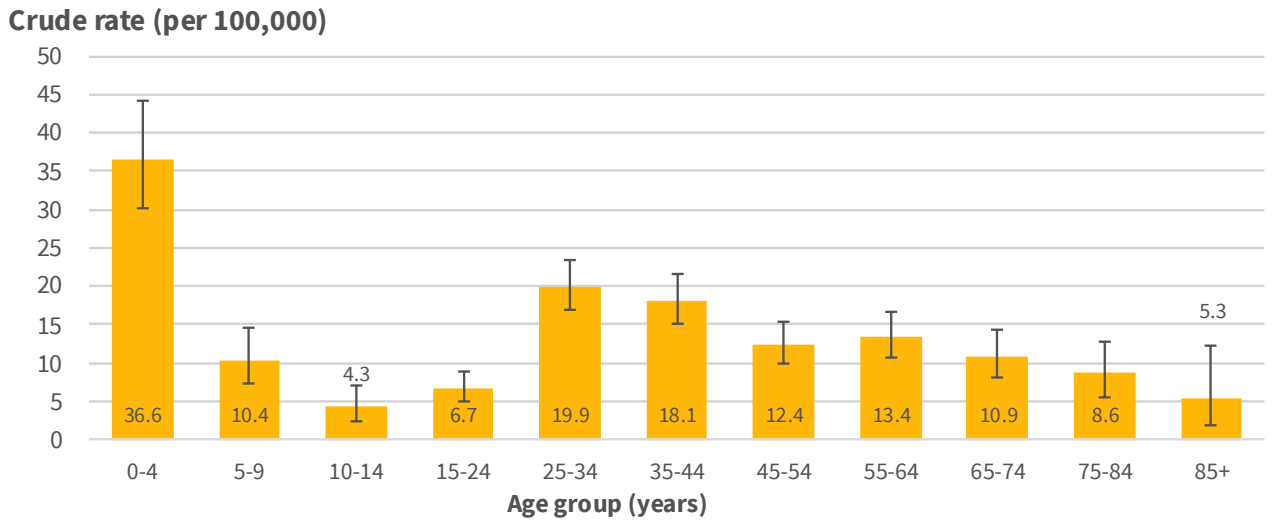
Note: The 95% confidence intervals for this graph are displayed as vertical bars.
Source: PHF Science 2026

Figure 3b: Notification rates for cryptosporidiosis, by age group, 2024



Note: The 95% confidence intervals for this graph are displayed as vertical bars. The rate for the 85+ age group is suppressed due to insufficient numbers of cases to calculate a rate (<5).
Source: PHF Science 2026

Figure 3c: Notification rates for giardiasis, by age group, 2024

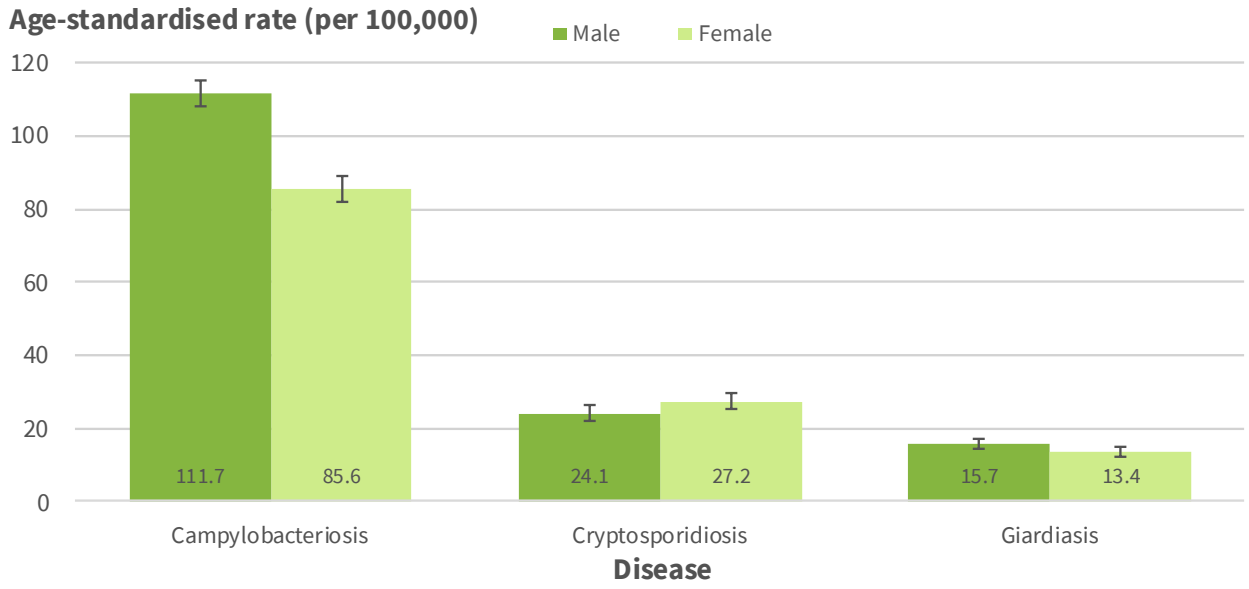


Note: The 95% confidence intervals for this graph are displayed as vertical bars.
Source: PHF Science 2026

Campylobacteriosis notifications are higher in males

In 2024, the age-standardised notification rate for campylobacteriosis was notably higher for males (111.7 per 100,000) than for females (85.6 per 100,000). There were only minimal, non-significant differences by sex for giardiasis and cryptosporidiosis (Figure 4).

Figure 4: Notification rates for campylobacteriosis, cryptosporidiosis, and giardiasis, by sex, 2024

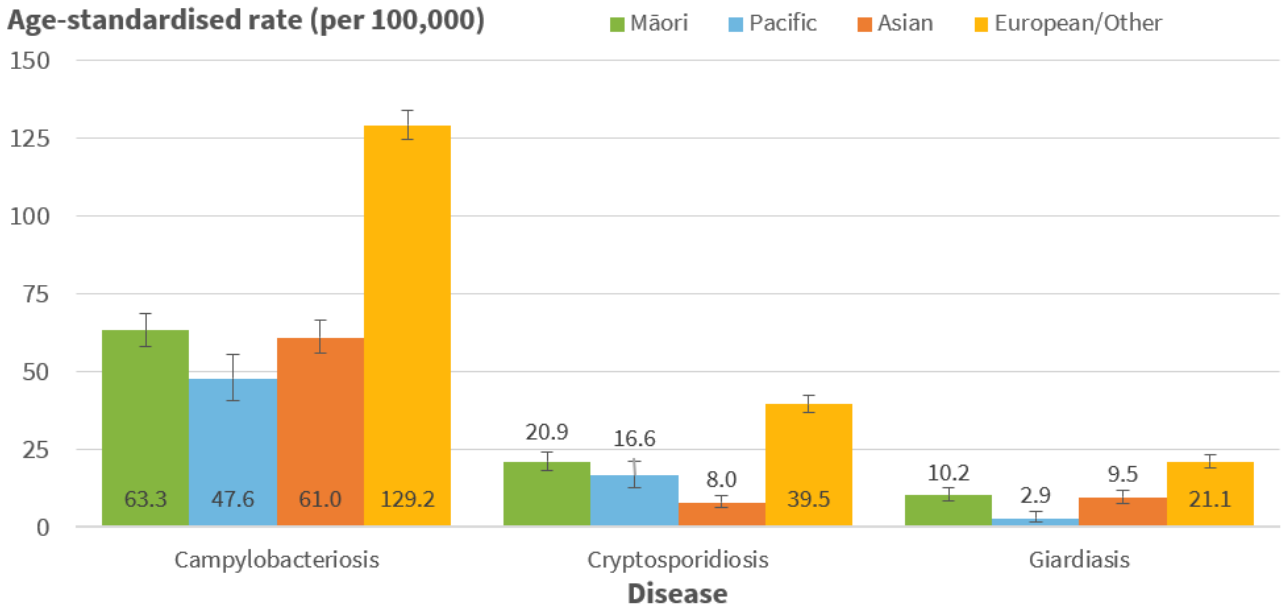


Note: The 95% confidence intervals for this graph are displayed as vertical bars.
Source: PHF Science 2026

People of European/Other ethnicity have the highest notification rates

People of European/Other ethnicity had the highest age-standardised notification rate for all three diseases in 2024 (Figure 5). This will not be solely due to a greater incidence in that group, and will be considerably affected by the level of access each group has to healthcare, or the likelihood of seeking treatment.

Figure 5: Notification rates of potentially waterborne disease, by ethnic group, 2024

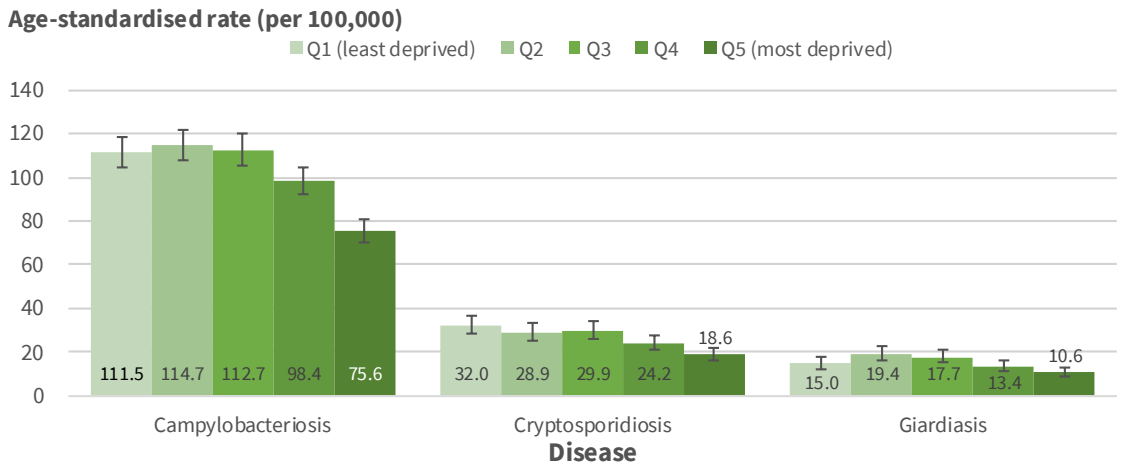


Note: The 95% confidence intervals for this graph are displayed as vertical bars.
Source: PHF Science 2026

Campylobacteriosis rates appear higher in less deprived areas

In 2024, people living in less socioeconomically deprived areas (quintile 1) had higher notification rates of campylobacteriosis and cryptosporidiosis compared to those living in more deprived areas (quintile 5) (Figure 6). This may be due to people living in more deprived areas finding it more challenging to access healthcare, leading to greater under-reporting of cases among this group (Ministry of Health 2023). Giardiasis notification rates did not appear to vary greatly between the different deprivation quintiles.

Figure 6: Notification rates of potentially waterborne disease, by NZDep2023 quintile, 2024



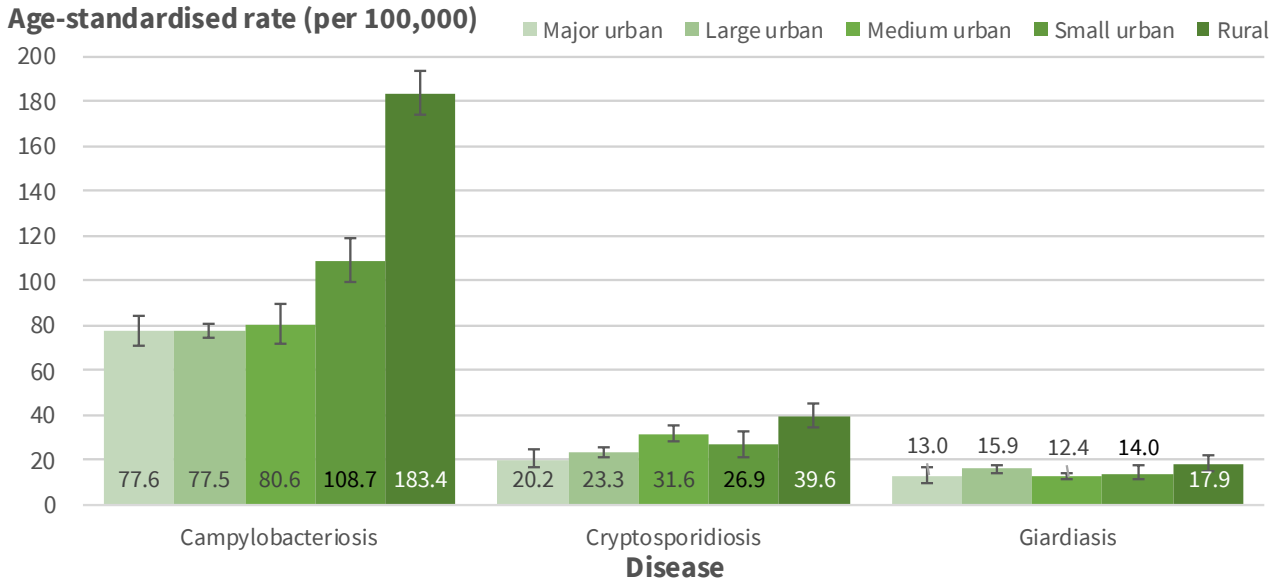
Note: The 95% confidence intervals for this graph are displayed as vertical bars.
Source: PHF Science 2026

People living in rural areas have higher notification rates

For all three diseases, people living in rural areas continued to have higher notification rates of potentially waterborne diseases than people living in more urbanised areas during 2024 (Figure 7).

In particular, the campylobacteriosis notification rate in rural areas was more than double that in major urban areas (standardised rate ratio 2.4; 95%CI 2.2–2.5).

Figure 7: Notification rates of campylobacteriosis, cryptosporidiosis, and giardiasis, by Indicator Urban-Rural category, 2024



Note: The 95% confidence intervals for this graph are displayed as vertical bars.
Source: PHF Science 2026

Rates of waterborne disease by district

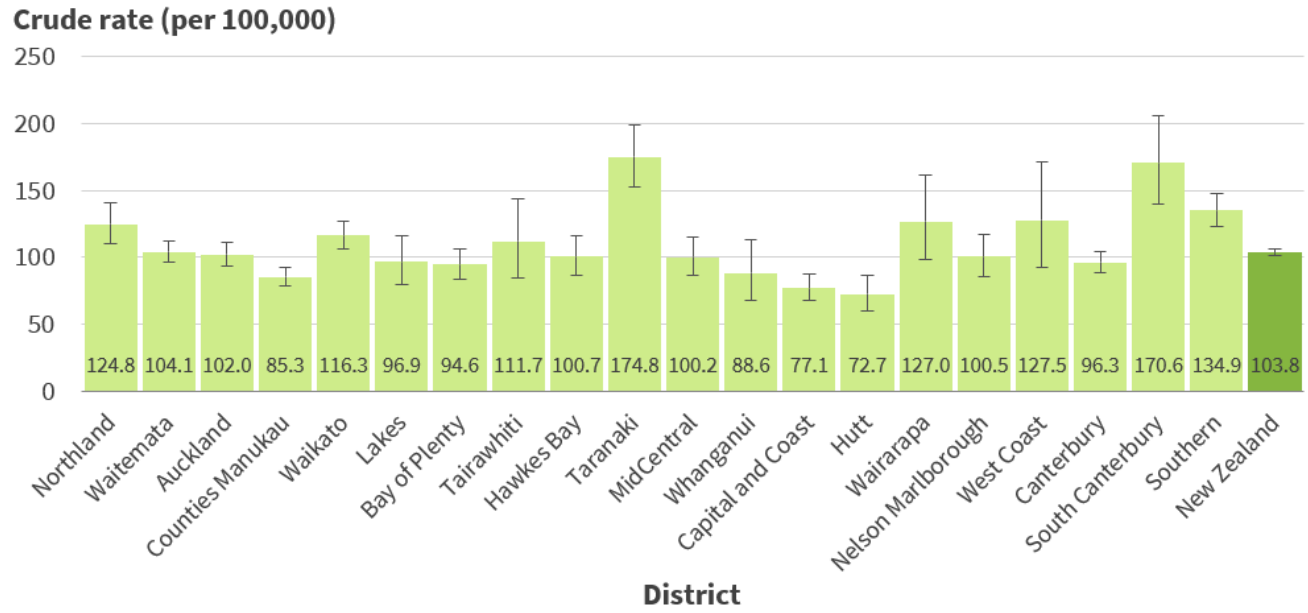
In 2024, high rates of campylobacteriosis occurred in Taranaki (174.8 per 100,000 people) and South Canterbury (170.6 per 100,000) districts (Figure 8).

South Canterbury district had the highest rate of cryptosporidiosis (42.7 per 100,000 people), while the Hutt (9.3 per 100,000 people) and Nelson/Marlborough districts (10.3 per 100,000 people) had the lowest rates (Figure 9).

Giardiasis rates were also broadly similar across most districts, with some elevated rates occurring across the central North Island and the Wairarapa districts (Figure 10), though statistical uncertainty is relatively high due to the low counts of cases in many districts. The Bay of Plenty district had the most elevated rate of notifications at 26.4 per 100,000 people.

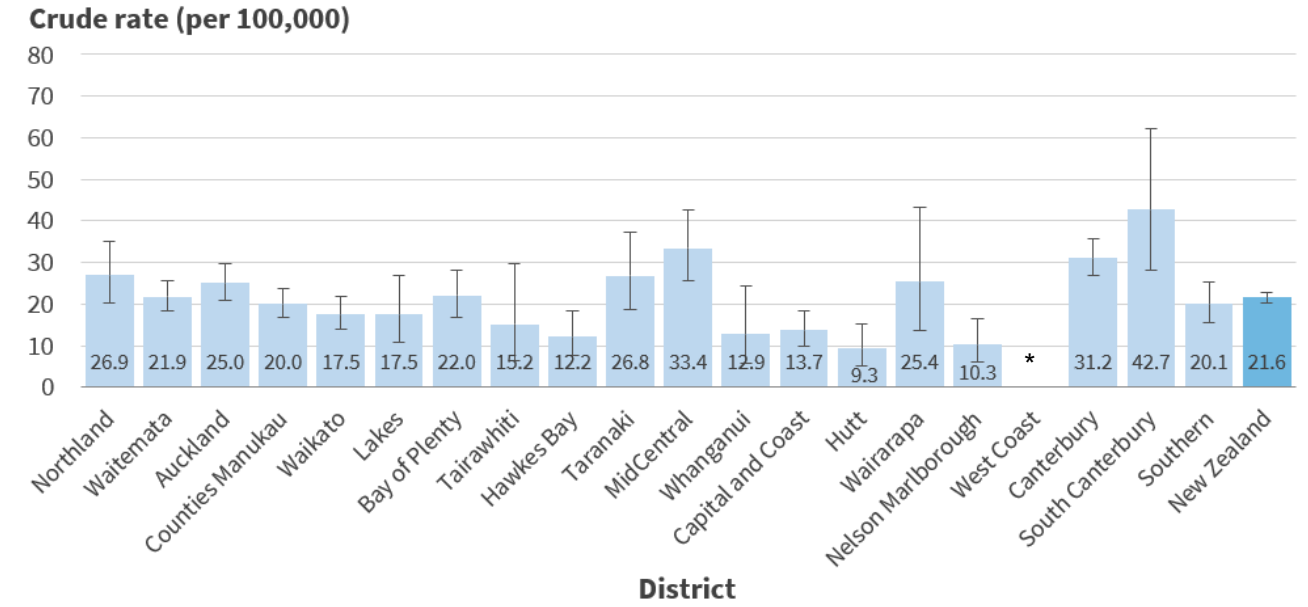
The distribution of rates for all diseases and districts is broadly consistent with previous years. See earlier editions of this report for more information.

Figure 8: Notification rates of campylobacteriosis, by district, 2024



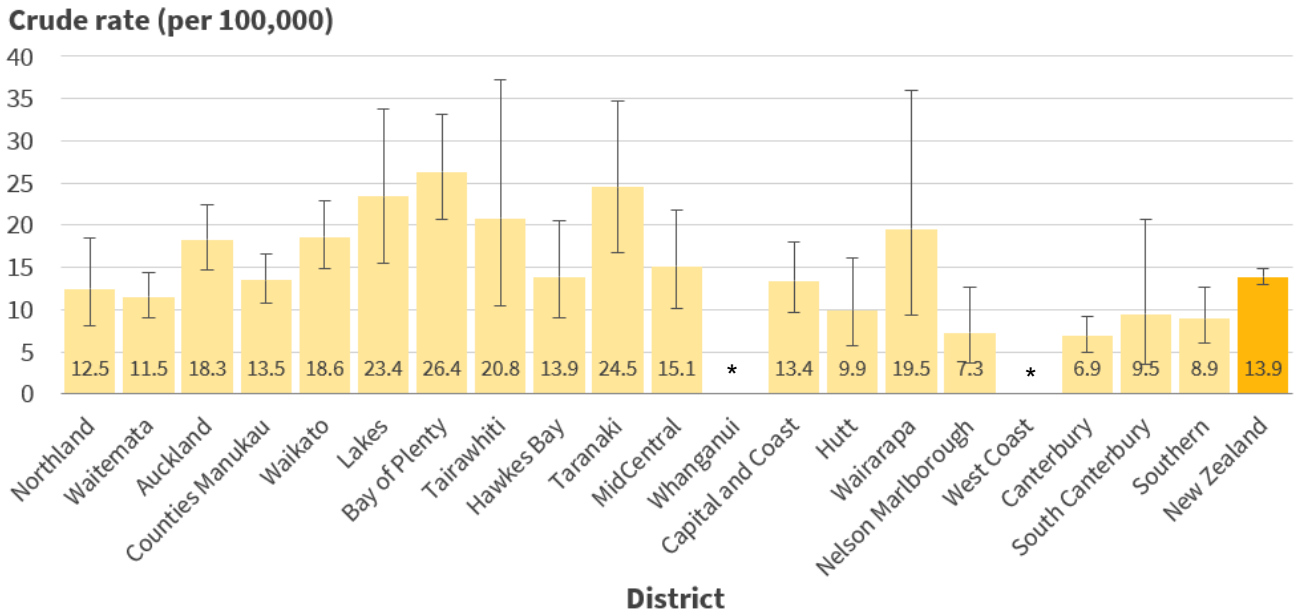
Note: The 95% confidence intervals for this graph are displayed as vertical bars.
Source: PHF Science 2026

Figure 9: Notification rates of cryptosporidiosis, by district, 2024



Note: The 95% confidence intervals for this graph are displayed as vertical bars. The rate for the West Coast district is suppressed due to a low count of cases (<5)
Source: PHF Science 2026

Figure 10: Notification rates of giardiasis, by district, 2024



Note: The 95% confidence intervals for this graph are displayed as vertical bars. Rates for Whanganui and West Coast districts are suppressed due to a low count of cases (<5)
Source: PHF Science 2026

Data for this indicator

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

Notifications exclude cases where the person was overseas during the incubation period. Notifications only cover those who visited a GP or hospital for treatment and are likely to underestimate the actual rate of disease in the population. Risk factor data for cases that reported contact with untreated drinking water or recreational water are available in separate surveillance reports.

'Crude rates' presented in this factsheet do not consider varying age distributions when comparing between populations, whilst 'Age-standardised' rates take into account the effect of varying age distributions. For additional information, see the Metadata sheet.

References

Amin S, Mahmood H, Zorab H. 2023. Campylobacteriosis. (PDF) Campylobacteriosis (researchgate.net) (Accessed 9 February 2024).

Duncan G. 2014. Determining the health benefits of poultry industry compliance measures: the case of campylobacteriosis regulation in New Zealand. New Zealand Medical Journal 127(1391): 22–37.

Carmena, D. 2010. Waterborne transmission of Cryptosporidium and Giardia: detection, surveillance and implications for public health. (PDF) Waterborne transmission of Cryptosporidium and Giardia: detection, surveillance and implications for public health (researchgate.net) (Accessed 9 February 2024).

Public Health and Forensic Science. 2026. Notifiable diseases EpiSurv data extraction. Porirua: Institute of Environmental Science and Research Limited. (personal communication with PHF Science Senior Analysts)

Ministry of Health. 2023. Annual Data Explorer 2022/23: New Zealand Health Survey [Data File]. URL: https://minhealthnz.shinyapps.io/nz-health-survey-2022-23-annual-data-explorer/ (Accessed 19/02/2024).

Pitkänen T. 2013. Review of Campylobacter spp. in drinking and environmental waters. Review of Campylobacter spp. in drinking and environmental waters - ScienceDirect (Accessed 9 February 2024).

Sinclair R, Jones E, Gerba C. 2009. Viruses in recreational water-borne disease outbreaks: a review. Journal of Applied Microbiology 107(6): 1769–1780.

Stuff.co.nz. 2024. *Cryptosporidium outbreak: What we know about cases on the rise across NZ.* URL: https://www.stuff.co.nz/nz-news/350290750/cryptosporidium-outbreak-what-we-know-about-cases-rise-across-nz Published: May 29, 2024. (Accessed: May 22, 2025).

Wilson D, Gabriel E, Leatherbarrow A, Cheesbrough J, Gee S, Bolton E, Fox A, Fearnhead P, Hart C, Diggle P. 2008. Tracing the source of campylobacteriosis. Tracing the Source of Campylobacteriosis | PLOS Genetics (Accessed 9 February 2024).

Explore geographic data on interactive dashboards:

Water dashboard

EHINZ dashboard

Other related topics include:

Waterborne diseases related to drinking water

Waterborne diseases related to recreational water

Access to safe drinking water

Disclaimer

Environmental Health Intelligence NZ – Rapu Mātauranga Hauora mo te Taiao - Aotearoa, makes no warranty, express or implied, nor assumes any legal liability or responsibility for the accuracy, correctness, completeness or use of any information that is available in this surveillance report.

Author

The author of this report is Patrick Hipgrave, ehinz@massey.ac.nz

Citation

Environmental Health Intelligence. 2026. *Notifications of potentially waterborne diseases*. [Surveillance Report]. Wellington: Environmental Health Intelligence NZ, Massey University.

Visit the EHINZ website

Subscribe to our newsletter