

Information topic	Details
Indicator name	Notifications of campylobacteriosis, cryptosporidiosis and giardiasis (excluding cases who were overseas during incubation period)
Domain and topic	- Recreational water quality: Water-borne diseases related to recreational water quality - Drinking water quality: Water-borne diseases related to untreated water
Indicator definition	Annual number of notifications of campylobacteriosis, cryptosporidiosis and giardiasis, excluding cases that were overseas during the incubation period
Data source	- Institute of Environmental Science and Research Ltd. (ESR). National Database of notifiable diseases (EpiSurv). - Population estimates. Statistics New Zealand. Available from http://nzdotstat.stats.govt.nz/wbos/index.aspx (accessed March 2017)
Numerator	Annual number of notifications of campylobacteriosis, cryptosporidiosis and giardiasis (excluding number of notifications with overseas travel history during the incubation period)
Denominator	Population estimate by year, age group, sex, ethnicity, NZDep, and District Health Board.
Methodology	Campylobacteriosis, cryptosporidiosis and giardiasis are notifiable in New Zealand. All cases diagnosed by doctors and/or laboratories are required to be notified to the medical officer of health in the region, who notifies the case to the national data collection (EpiSurv) administered by ESR, or directly to EpiSurv for further investigation. As part of the notification process of campylobacteriosis, cryptosporidiosis and giardiasis, information is collected on certain risk factors. For enteric disease, these risk factors include whether the individual had, during the incubation period: - consumed untreated surface water, groundwater or rain water participated in water activities in a stream, river and/or beach - recently travelled overseas. It should be noted that the risk factors are not confirmed as the cause of the disease; several risk factors may be recorded, and for a number of risk factors the majority of responses may be 'unknown'. For this analysis, cases that had been overseas at some point during the incubation period were excluded from the analysis, as they were unlikely to have contracted the disease within New Zealand.
Time period and time scale	Annual; from 2001 onwards
Population coverage	national

Information topic	Details
Measures of frequency	- Annual number of campylobacteriosis, cryptosporidiosis and giardiasis notifications - Age-adjusted rate of campylobacteriosis, cryptosporidiosis and giardiasis notifications per 100,000 population - Age-adjusted rate of campylobacteriosis, cryptosporidiosis and giardiasis notifications per 100,000 population, by gender and five-year age groups - Crude rate of campylobacteriosis, cryptosporidiosis and giardiasis notifications per 100,000 population, by District Health Board
Confidence interval methodology	Byar's approximations for calculating the 95% confidence interval for rates of events were used (Eayres 2008). Statistically significant differences for the time trend for age-adjusted rates from 2005 onwards were noted.
Limitations of indicator	Not all notifiable diseases that have a possible contamination route through water were analysed for this indicator, i.e. salmonellosis, typhoid/paratyphoid fever, hepatitis A, yersiniosis, shigellosis, gastroenteritis.
Limitations of data source	This indicator only includes notified cases and will be underestimating the total burden of these diseases. Most un-notified cases will be undiagnosed (i.e. the person who was ill did not see a doctor or the diagnostic test was not performed).
Created by	Environmental Health Indicators New Zealand, Centre for Public Health Research, Massey University, Wellington
Related indicators	- Notifications of campylobacteriosis, cryptosporidiosis and giardiasis with recreational water as a risk factor - Notifications of campylobacteriosis, cryptosporidiosis and giardiasis with untreated water as a risk factor
For more information	ESR. Annual Surveillance Summary. Available from https://surv.esr.cri.nz/surveillance/annual_surveillance.php (accessed March 2017)
References	Eayres D. (2008). <i>Technical Briefing 3: Commonly used public health statistics and their confidence intervals</i> . York: Association of Public Health Observatories.