Information topic	Details
Indicator name	**Notifications of salmonellosis**
Domain and topic	Climate change: Health effects related to climate change
Indicator definition and units	Number of notifications of cases of salmonellosis, 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). - Annual resident population estimates. Statistics New Zealand. Available from http://nzdotstat.stats.govt.nz/wbos/index.aspx
Numerator	Number of confirmed notifications of salmonellosis (confirmed notifications meet specific case definition criteria, indicator also excludes people who were overseas during the incubation period)
Denominator	Estimated resident population, by Territorial Authority (TA)
Methodology	- 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 - Age-standardised rates were calculated using the WHO Standard Population - Data was combined over a 10-year period
Time period and time scale	Annual; from 2001 onwards
Population coverage	National
Measures of frequency	- Age-standardised rate of salmonellosis notifications per 100,000 population - Age-standardised rate of salmonellosis notifications per 100,000 population, by TA
Confidence interval methodology	Byar's approximations for calculating the 95% confidence interval for rates of events were used (Eayres 2008)
Limitations of indicator	- The relationship between salmonellosis and climate is not fully determined. Associations have been made (particularly with increasing ambient temperature) but the mechanisms by which climatic factors change disease incidence are not fully established. - The indicator cannot currently show 'change' from the effects of climate. This is because we could not robustly compare a 'baseline period' with the 2001-onwards data. A common baseline period in climate change science is

	1960-1990 (Mearns et al 2001). The 2001-onwards data that is used does not have a sufficiently comparable 1960-1990 period, because the national notifiable diseases database was not in operation then.
Limitations of data source	This indicator only includes notified cases and will be underestimating the total burden of disease. 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, Massey University, Wellington
Related indicators	- Number of days below 0°C - Number of days over 25°C - Number of days with soil moisture deficit - Notifications of cryptosporidiosis and giardiasis
For more information	ESR. Annual Surveillance Summary. Available from https://surv.esr.cri.nz/surveillance/annual_surveillance.php (accessed December 2018)
References	- Eayres D. 2008. *Technical Briefing 3: Commonly used public health statistics and their confidence intervals*. York: Association of Public Health Observatories. - Mearns LO, Hulme M, Carter TR, et al. 2001. Climate Scenario Development. In: Houghton JT, Ding Y, Griggs M, et al. (eds). *Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change* (pp. 739-768). Cambridge, United Kingdom and New York, NY, USA: Cambridge University Press.