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Environmental Health Intelligence New Zealand
Rapu Mātauranga Hauora mo te Taiao – Aotearoa

Related indicators

Exotic diseases of concern to New Zealand

This factsheet provides a summary of priority notifiable exotic respiratory diseases and public health emergencies of international concern and their presence in New Zealand in 2016–20. 2021 data is included for COVID-19.

From 2016–20, two priority infectious diseases, measles and COVID-19, crossed the New Zealand border.

In 2019, 33 measles cases from 11 countries entered New Zealand, resulting in 2,213 cases.

In 2020 and 2021, there were 14,201 cases of COVID-19 in New Zealand, resulting in 51 deaths.

The most recent non-seasonal influenza outbreak, H1N1 in 2009, infected an estimated 800,000 people in New Zealand and resulted in 35 deaths.

Respiratory Disease

Low exposure to respiratory syncytial viruses and other respiratory diseases could lead to spikes in cases as New Zealand borders begin to re-open.

Measles

Due to COVID-19, public health programs surrounding measles vaccinations and prevention globally have reduced, creating concerns about future outbreaks.

Background information

Certain international diseases pose a greater threat to New Zealand because:

- individuals are not immune as the disease is not found naturally in New Zealand, and no vaccines are readily available
- they spread easily, can cause serious illness and are often difficult to identify and treat
- there are populations within New Zealand with low vaccination rates relative to the total population, making them more vulnerable to vaccine-preventable diseases.

Priority diseases that threaten or have crossed New Zealand's borders include:

- vector-borne diseases, particularly those spread by mosquitoes, such as Dengue fever or Malaria. These are covered in the Mosquito-borne disease in New Zealand factsheet.
- diseases classified as 'Public Health Emergency of International Concern' (PHEIC) by the World Health Organisation (WHO) after being deemed a significant threat to public health that will likely require international action (eg, Ebola).
- respiratory diseases which can cause serious lung infections (eg, influenza or COVID-19).

Emerging and known international diseases of concern to New Zealand require ongoing monitoring and evaluation. This process reduces the risk associated with the ever-changing infectious disease environment seen globally (Bloom and Cadarette 2019).

Table 1 below outlines the respiratory diseases and PHEICs covered in this factsheet. Recent and ongoing PHEICs include the Ebola outbreak in Kivu, Democratic Republic of Congo, Polio, and COVID-19. For information on the spread of these diseases

Table 1 Summary of notifiable respiratory diseases and PHEICs in New Zealand, 2016–20.

Notifiable Disease	Total cases 2016–20	Peak year (cases that year)	Notes
Measles	2,370	2019 (2,213 cases)	From 2016–20, 48 cases were confirmed to have overseas origins primarily from South East Asia (18 cases) and the Pacific (17 cases).
COVID-19 *	2,174	2020 (2,174 cases)	Please see the section below which discusses counts in 2021.
Ebola *	0	NA	No cases have ever been recorded in New Zealand.
Polio *	0	NA	The last wild poliovirus case in New Zealand occurred in 1977.
Non-seasonal influenza	0	NA	H1N1 was the last non-seasonal influenza to enter New Zealand in 2009, resulting in 1,122 hospitalisations and 35 deaths.
Middle Eastern Respiratory Syndrome	0	NA	No cases have ever been recorded in New Zealand.

Notes: * This disease was a public health emergency of international concern between 2016–20.

Measles outbreak in 2019 resulted in 2,213 cases

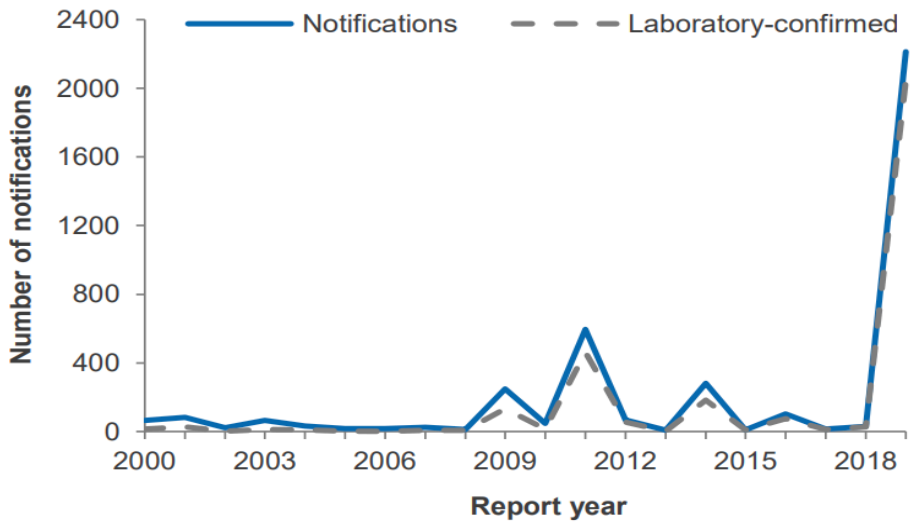
From 2016–20, 2,370 cases of measles were confirmed in New Zealand, and 1,007 cases had their origin identified (ESR 2017, 2019, 2020, 2021a, 2021b). Forty-eight cases were identified as being imported. The majority of known imported cases were believed to have originated in South East Asia (18 cases) and the Pacific Islands (17 cases).

In 2019, there were 2,213 cases of measles confirmed in New Zealand (ESR 2021a). Figure 1 shows this large spike compared to previous years. In 2019 less than half of all cases (864 cases) had their origin identified, 33 of which were imported. In other years from 2016–20 origin was known for around 90% of cases.

Some key characteristics of the 2019 outbreak include:

- Children, aged 0–5 years, had the highest infection rate.
- 80% of cases were not vaccinated.
- Pacific peoples experienced an infection rate four times greater than any other ethnic group.
- The infection rate in Counties Manukau District Health Board (DHB) was almost three times greater than the next most affected DHB, Northland.

Figure 1 Measles notifications and laboratory-confirmed cases, 2000–19



Source: ESR 2021a

At the end of 2018, 88.0% of children aged 0–5 years had up-to-date vaccinations, which includes the Measles, Mumps and Rubella vaccine . Pacific children aged 0–5 years, in the two most affected DHBs, Counties Manukau and Northland, had vaccination rates 91.0% and 90.3% respectively (MoH 2021a).

Similar measles outbreaks were recorded in other nations, including the United States (CDC 2021a) and Australia (Alexander, Wickens, Fletcher-Lartey 2020) in 2019. However, these outbreaks appeared to affect older age groups, including the 5–14 year age group.

In 2020, there were just 9 confirmed cases of measles in New Zealand, however, no further details on these cases have been published (ESR 2021b).

COVID-19 became the first PHEIC in New Zealand since H1N1

The first imported case of COVID-19 was recorded on 26 February 2020. This marked the first time a PHEIC was present in New Zealand since non-seasonal H1N1 influenza in 2009. On 14 March the New Zealand government announced that all arriving travellers needed to complete 14 days of self-isolation with managed-isolation mandated from 9 April. On 19 March the borders were closed to those who were not citizens or permanent residents of New Zealand (MoH 2021b).

According to Ministry of Health COVID-19 data, there were 14,201 confirmed or probable cases recorded in New Zealand from 26 February 2020 to 31 December 2021 (MoH 2022). Of these, 51 individuals died.

There were some key differences between cases in 2020 and 2021. These include differences in the number of cases identified in managed isolation facilities and those identified in the community:

- In 2020, there were 2,174 confirmed or probable cases consisting of 460 cases in managed isolation facilities and 1,714 cases identified in the community.
- In 2021, there were 12,027 confirmed or probable cases consisting of 1,118 cases in managed isolation facilities and 10,909 cases identified in the community. This includes the largest community outbreak to date, which began in August and continued to the end of 2021.

Further information about New Zealand's COVID-19 cases, including demographic breakdowns, vaccination rates, hospitalisation rates and mortality data, are updated regularly on the Ministry of Health website. Data surrounding the broader impacts of the pandemic are published by StatsNZ.

Non-seasonal influenzas are uncommon in New Zealand

There are two types of non-seasonal influenzas that are notifiable in New Zealand:

- Swine influenzas: A(H1N1) and A(H1N2)
- Avian influenzas: A(H5N1), A(H5N6), A(H7N4) and A(H7N9).

From 2016–20 there have been no confirmed cases of non-seasonal influenzas in New Zealand. The last major outbreak in New Zealand occured in 2009 with H1N1. A report commissioned by the Ministry of Health estimated that 800,000 New Zealanders were infected during 2009, based on seroprevalence testing of a selective sample (Bandaranayake et al 2010). During the outbreak, there were 3,211 confirmed cases resulting in 35 deaths.

Issues for future patterns of infectious disease

Respiratory syncytial virus and influenza

There is an elevated risk of respiratory syncytial virus (RSV), and seasonal influenza spread within New Zealand as borders re-open. This is due to a lack of immunity resulting from minimal exposure to international respiratory viruses in 2020 and 2021. This was demonstrated when quarantine-free travel was allowed with Australia in 2021, and RSV cases were five times higher than peaks seen in 2015–19 (Hatter et al 2021).

Measles vaccination rates have dropped internationally

Due to the intense focus on COVID-19, many countries have ceased or delayed their measles vaccination and eradication campaigns (CDC 2021b). This has raised concerns about future outbreaks globally as international travel increases. As seen in 2019, outbreaks abroad increase the risk of disease within New Zealand, especially if they occur in the Asia-Pacific regions.

Data for this indicator

This factsheet is based on primarily on data collected and published by ESR, annual reports and data tables complemented by other sources including the Ministry of Health, CDC and WHO. Data on COVID-19 was downloaded from the Ministry of Health COVID-19 portal on 12/01/2022.

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Other related topics include:

Overseas infectious diseases of priority concern

Mosquito-borne disease in New Zealand

High-risk pests caught at New Zealand's border

Exotic mosquito species established in New Zealand

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Further information

For descriptive information about the data Metadata

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