Science for Communities

2018 ANNUAL INFLUENZA SUMMARY

This report provides an overview of the influenza season in New Zealand in 2018.

Further information and figures are available here.

Information on the influenza surveillance systems in New Zealand is available here.

SUMMARY OF 2018 SEASON

- The predominant Influenza strain circulating in New Zealand during the 2018 influenza season was Influenza A(H1N1)pdm09.
- Visits to General Practices (GP) for Influenza-like illness (ILI) were unseasonably low, remaining below the seasonal baseline level. GP related Influenza activity started later in the season and lasted longer compared to most previous recent years.
- Severe acute respiratory infection (SARI) hospitalisation rates were similar to other years when Influenza A(H1N1)pdm09 was the predominant Influenza virus circulating.
- The severity of illness as measured by the ratio of influenza associated intensive care unit admissions compared with influenza associated hospitalisations was elevated in 2018, which is also similar to other Influenza A(H1N1)pdm09 predominant years.
- The 2018 publically funded Influenza vaccines available in New Zealand were a good match to the predominant Influenza A(H1N1)pdm09 strain that was circulating.

NATIONAL INFLUENZA SURVEILLANCE OBJECTIVES AND SYSTEMS

Influenza surveillance systems are in place to detect influenza epidemics/pandemics, inform vaccination policy and vaccine strain selection and guide public health control measures in New Zealand and globally.

New Zealand conducts surveillance in community and hospital settings to capture disease presentations at different levels of severity. Due to differences in care seeking, the combination of these systems allows for a better representation of the burden Influenza in New Zealand. The very young (under 5 years old), older adults (65 years or older), and those of Māori or Pacific ethnicities are more likely to be admitted in hospital but less likely to be seen at GPs.

For further details on the design of each system, please click here. Data collected from each system is collated, analysed, interpreted and presented weekly throughout the winter surveillance period (roughly May to October) by ESR on behalf of the Ministry of Health.

INFLUENZA-LIKE ILLNESS (ILI) IN THE COMMUNITY

During the 2018 Respiratory virus season, ILI activity as measured by GP influenza like illness (ILI) consultation rates and calls to HealthLine, was low.

GP ILI consultation rates started to increase from mid-May but remained below the baseline level throughout the season. ILI visits to GPs with influenza detected started to increase from early August, much later than overall ILI GP visits.

ILI activity, as measured by calls to HealthLine, was low throughout the season, peaking toward the end of August. Call rates did not vary greatly among DHBs throughout the season.

HOSPITAL ADMISSIONS FOR SEVERE ACUTE RESPIRATORY INFECTIONS (SARI)

During the 2018 respiratory virus season, Severe acute respiratory infection (SARI) hospitalisation rates and Influenza-associated SARI hospitalisation rates were at a low level, as seen in other years since 2012 when Influenza A(H1N1)pdm9 was the predominant strain. SARI hospitalisation rates during 2018 remained below the seasonal threshold with the exception of a peak at week 33 (week ending 19 August).

Influenza associated SARI hospitalisation rates in 2018 remained at a low level but were above the seasonal baseline level between weeks 27 (week ending 8 August) and 38 (week ending 23 September).

(Note: SARI data is reported from Auckland and Counties Manukau DHBs only)

CIRCULATING RESPIRATORY VIRUSES IN 2018

The predominant Influenza strain circulating during the 2018 Influenza season was Influenza A(H1N1)pdm09, which caused a worldwide pandemic in 2009 and has since become a common seasonal Influenza virus. Influenza A(H1N1) viruses often affect younger populations. Influenza A(H3N2), which was associated with an active season in 2017, was also present in very low levels in 2018.

Rhinovirus, Adenovirus and Respiratory Syncytial Virus (RSV) were the most frequently detected non-Influenza respiratory viruses circulating in 2018. Monitoring of these non-Influenza respiratory viruses not only provides a more accurate understanding of when Influenza is not responsible for GP ILI visits or SARI hospitalisations trends but also helps to identify clusters of these viruses and could help inform decisions on the potential use of new vaccines and treatments in New Zealand as these become available.

SEVERITY OF INFLUENZA ILLNESS AND POPULATIONS AT INCREASED RISK

While there was low level Influenza activity throughout the 2018 Respiratory virus season, the severity (the extent to which individuals get sick when infected with the Influenza virus) as measured by the ratio of Influenza associated intensive care unit admissions compared with Influenza associated hospitalisations was elevated. Higher severity has been observed in previous seasons when the predominant influenza strain circulating was A(H1N1)pdm09 virus.

INFLUENZA IN POPULATIONS AT ELEVATED RISK

Groups at increased risk for Influenza infection or poor outcomes with Influenza infection are a particular focus of Influenza surveillance and public health interventions. In New Zealand, pregnant women, adults with specific underlying medical conditions, and children under five years old who have been hospitalised for respiratory illness or have a history of significant respiratory illness are all eligible for free seasonal influenza vaccine.

In 2018, among the influenza positive SARI hospitalisations and ICU admissions, the majority of patients were under 65 years old, this increased risk for younger populations is expected in a season where influenza A(H1N1) viruses are predominant.

Around one-third of those hospitalised with influenza associated SARI and over half of those admitted to ICU with influenza associated SARI, did not have any reported pre-existing medical risk factors. This is also consistent with a younger population being more affected.

VACCINE COVERAGE, VACCINE EFFECTIVENESS AND ANTIVIRAL RESISTANCE

Influenza viruses are continually changing, making the selection and development of an effective vaccine a challenge each year. For the 2018 Influenza season a quadrivalent vaccine was funded for those eligible for free seasonal influenza vaccine.

In 2018, 1.3 million doses of influenza vaccine were distributed in New Zealand.

Annual influenza vaccination remains the most effective way to prevent influenza illness and even in seasons with only moderate vaccine effectiveness, influenza vaccine can still attenuate disease symptoms and therefore reduce the likelihood of severe outcomes, including influenza associated hospitalisation and death. Influenza vaccination not only helps protect those who are vaccinated but can also help protect their close contacts from getting ill with influenza (http://www.cdc.gov/flu/about/qa/vaccineeffect.htm).

In 2018, the vaccine was 38% (95% CI: 1.4–61) effective at preventing influenza-associated hospitalisations and 35% (95% CI: 12–52) effective at preventing influenza-related general practice consultations. For Influenza A(H1N1)pdm09, the vaccine effectiveness was higher (hospitalisations: 61 [95% CI: 25–80] and GP visits: 45 [95% CI: 23–62]). It should be noted that estimates of vaccine effectiveness depend on several factors, including the amount of information collected for the calculations, the age group most affected by the predominant circulating strain (in 2018 this was younger age groups) and the match between the vaccine and the circulating influenza strains.

No resistance to oseltamivir or zanamivir was detected in influenza viruses tested in 2018.

VACCINE COMPOSITION FOR NEXT SEASON (2019)

The 2019 publically funded seasonal influenza vaccine will contain the following four components (a quadrivalent vaccine):

- A(H1N1): an A/Michigan/45/2015 (H1N1)pdm09-like virus
- A(H3N2): an A/Switzerland/8060/2017 (H3N2)-like virus
- B: a B/Phuket/3073/2013-like virus (belonging to B/Yamagata lineage)
- B: a B/Colorado/06/2017-like virus (belonging to B/Victoria lineage)