Science for Communities

2017 ANNUAL INFLUENZA SUMMARY

This summary report provides an overview of the Influenza season in New Zealand in 2017. Further information and figures are available from here.

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

SUMMARY OF 2017 SEASON

- The predominant Influenza strain circulating in New Zealand during the 2017 Influenza season was Influenza A(H3N2).
- The rate of influenza-like illness (ILI) visits to General Practices (GP) was above the baseline level from 19 June to 21 August but remained below the average seasonal rate. The same was true for visits to GPs specifically attributed to Influenza by testing.
- Despite relatively low hospitalisation rates for Severe Acute Respiratory infections (SARI) in 2017, SARI hospitalisations associated with Influenza peaked early compared with recent years and reached moderate seasonal levels. Moderate levels of hospitalisations are common for years when Influenza A(H3N2) is 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 low, similar to other years when the predominant Influenza virus circulating is Influenza A (H3N2).
- The 2017 publically funded trivalent Influenza vaccines available in New Zealand were a good match to the predominant Influenza A(H3N2) virus circulating.
- While New Zealand had a relatively mild season, the Influenza season in Australia was the largest reported since the 2009 pandemic year. While high numbers of people were affected by Influenza in Australia, the infection was no more serious than in other years. The predominant circulating strain was the same in Australia and New Zealand so the reason for this difference is not clear http://www.health.gov.au/internet/main/publishing.nsf/Content/ozflu-surveil-2017-final.htm - accessed 1 Feb 2019.

NATIONAL INFLUENZA SURVEILLANCE 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 of 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 2017 influenza season, ILI activity, as measured by GP ILI consultation rates and calls to HealthLine, was low to moderate.

- GP ILI consultation rates were above baseline levels from 19 June – 21 August but remained below the average seasonal level.
- ILI activity, as measured by calls to HealthLine, was moderate throughout the season, with calls peaking in July.

HOSPITAL ADMISSIONS FOR SEVERE ACUTE RESPIRATORY INFECTIONS (SARI)

During the 2017 influenza season, Severe acute respiratory infection (SARI) hospitalisation rates were at a low level but influenza-associated SARI hospitalisation rates reached a moderate level.

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

CIRCULATING RESPIRATORY VIRUSES

The predominant Influenza strain circulating during the 2017 season was Influenza A(H3N2). Influenza A(H3N2) viruses have frequently been associated with severe disease and excess mortality in high risk, including elderly, populations. Influenza A(H3N2) viruses can evolve more rapidly over time that other human Influenza viruses, requiring frequent vaccine formulation changes.

Influenza B(Yamagata) was the predominant Influenza B virus circulating in New Zealand.

Respiratory syncytial virus and Rhinovirus were the most frequently detected non-Influenza respiratory viruses circulating in 2017. Monitoring of these non-Influenza respiratory viruses provides a more accurate understanding of when Influenza is not responsible for GP ILI visits or SARI hospitalisation trends, helps identify clusters of these viruses and prepares New Zealand for new vaccines and treatments that are in development for certain of these viruses.

SEVERITY OF ILLNESS

While influenza associated hospitalisation rates reached a moderate level, 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 low. Lower levels of severity have also been observed in previous seasons (2013 and 2015) when the predominant Influenza strain circulating was Influenza A(H3N2).

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, people aged over 65, 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 2017, among the influenza positive SARI hospitalisations, the majority of patients were over 65 years old, this increased risk for older populations is expected in a season where Influenza A(H3N2) viruses are predominant. Among the influenza positive SARI ICU admissions, the majority of patients were under 65 years old.

Around one third of those hospitalised with Influenza associated SARI and over half of those admitted to ICU with influenza associated SARI, had at least one reported pre-existing medical risk factor, this is as expected when older population are most 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 2017 Influenza season a trivalent vaccine was funded for those eligible for free seasonal influenza vaccine.

In 2017, 1.2 million doses of influenza vaccine were distributed in New Zealand.

The 2017 publically funded trivalent Influenza vaccines available in New Zealand were a good match to the predominant Influenza A(H3N2) virus circulating. The vaccines included two other Influenza viruses (another influenza A and an influenza B). While the funded vaccine covered influenza B(Victoria) and the predominant circulating influenza B was B(Yamagata). Studies have demonstrated the cross-protection between the two B lineages can occur.

Annual influenza vaccination remains the most effective way to prevent Influenza illness. 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 2017, the vaccine was 51% (95% CI: 17–71) effective at preventing influenza-associated hospitalisations and 27% (95% CI: 6–43) effective at preventing influenza-related general practice consultations. 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 2017 this was older 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 2017.

VACCINE COMPOSITION FOR NEXT SEASON (2018)

The 2018 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/Singapore/INFIMH-16-0019/2016 (H3N2)-like virus
- B: a B/Phuket/3073/2013-like virus (belonging to B/Yamagata lineage)
- B: a B/Brisbane/60/2008-like virus (belonging to B/Victoria lineage)