

# Visualising year to year severity of influenza-like illness

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## Introduction

It is often difficult to describe the severity of influenza seasons and compare them with previous seasons. We developed a simple visualisation to support communication of year to year influenza season severity.

## Aim

We combined Flutracking participant data on attack rates and duration absent from work or normal duties to create a visualisation of year to year transmissibility and case seriousness in the state of New South Wales (NSW), Australia for the years 2009 to 2018.

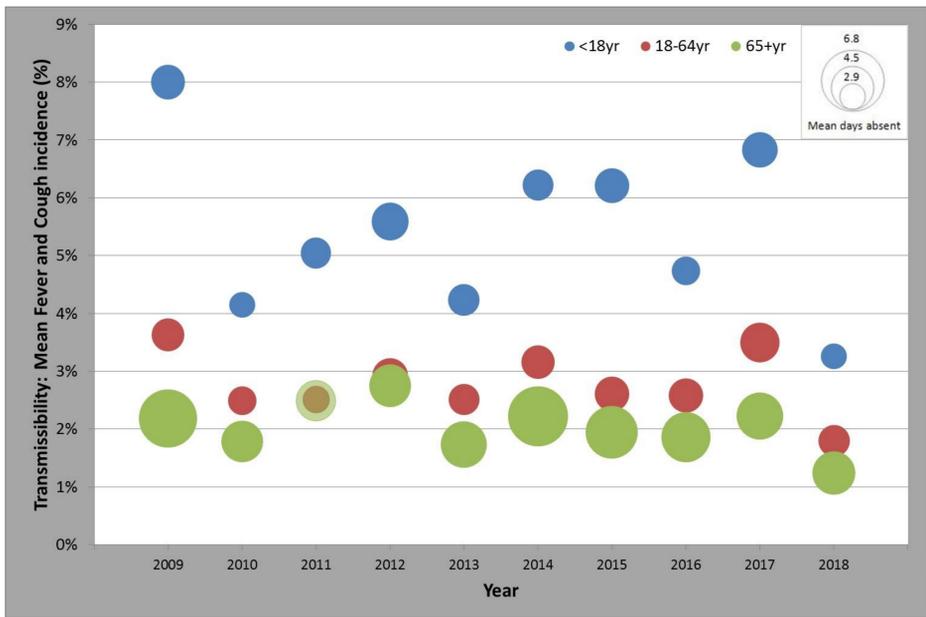


Figure 2. Bubble Plot of Transmissibility by Seriousness for NSW 2009-2018

## Method

The following indicators from the WHO (World Health Organisation) guide to assessing the severity of influenza in seasonal epidemics and pandemics were applied to Flutracking surveillance data from 2009 to 2018:

Transmissibility = weekly attack rate of cough

Seriousness = mean duration of absence from work or normal duties due to fever and cough

## Resulting Visualisations

Figure 1 shows clear differences between influenza seasons by year at a population level. The 2010 season appears to be the least severe in terms of transmissibility and number of days away from work or normal duties. Whilst 2009 (pandemic year) had the highest transmissibility and 2017 had the highest average number of days away from work or normal duties.

## Acknowledgements

- Our loyal Flutrackers!!!
- The University of Newcastle
- The Australian Government Department of Health
- Hunter Medical Research Institute
- Stephen Clarke from Flexis Systems
- The Flutracking team

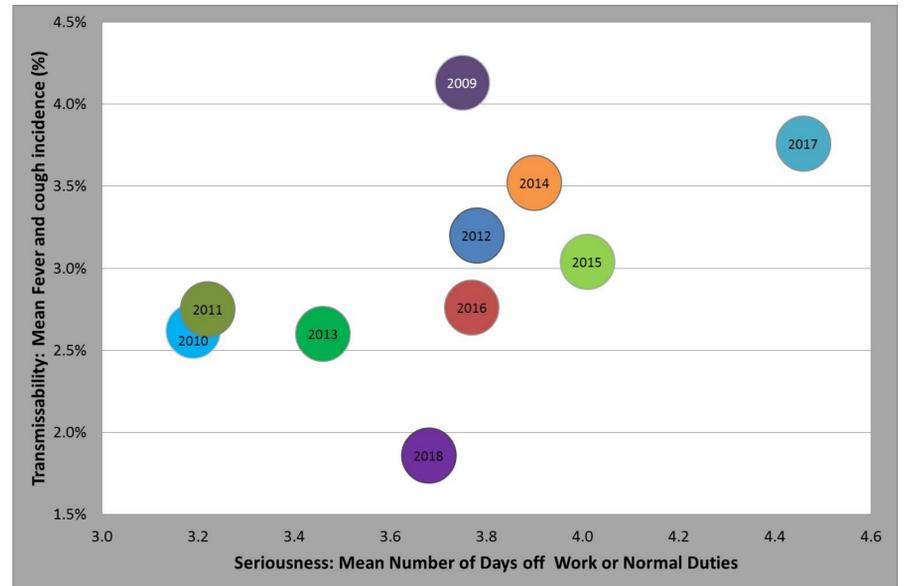


Figure 1. Bubble Plot of Transmissibility by Seriousness, (peak four weeks) – NSW, 2009-2018

Figure 2 clearly demonstrates the younger age group having the highest transmissibility followed by adults aged 18 to 64 years, and the lowest attack rates were consistently in older adults aged 65+ years who also had the longest duration of absence from work or normal duties.

Figure 3 allows for the age groups to be compared with the youngest age group having slightly fewer days away from work or normal duties compared to adults and substantially less days than older adults.

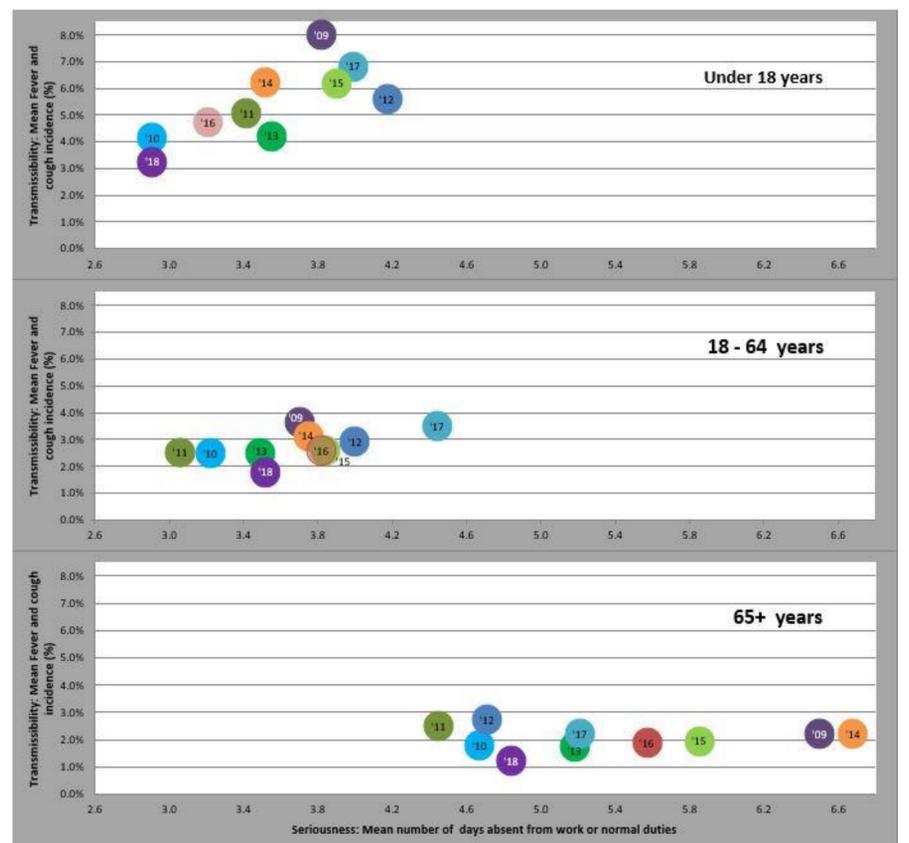


Figure 3. Transmissibility by Seriousness (peak 4 weeks) – NSW, 2009-2018, by age group.

## Conclusion

We have presented three simple graphical representations of the severity of the influenza season using transmissibility and the mean number of days absent from work or normal duties by age group. These visualisations could provide new perspectives and potential insights into influenza severity trends in Australia.



FluTracking

