

10<sup>th</sup> International Virology Summit  
&  
4<sup>th</sup> International Conference on Influenza & Zoonotic Diseases  
July 02-04, 2018 | Vienna, Austria

## Comparison of epidemical features of seasonal influenza across different climatic zones in Australia

Wenbiao Hu

Queensland University of Technology, Australia

Few studies investigate the features of seasonal influenza in different age groups among geo-climatic regions according to a specific climatic condition. This study aimed to assess the differences in the epidemical features of influenza A and B among six climatic zones in three age groups (<15, 15-64 and 65+ years) in Australia. Bayesian space-time models based on a spatial conditional autoregressive (CAR) model combined with a susceptible, infectious and removed (SIR) model was used to estimate transmission rates to explore differences in evolution of influenza A and B epidemics. There were significant differences in mean weekly incidence rates of influenza A and B among the six climatic zones in the 0-14 and 15-64 age groups. Mean weekly incidence rates were more likely to be higher in the areas with a warm winter or a mild winter than in the area with relatively colder winter. The ≥65 age group showed less spatial variation in mean weekly incidence rates of influenza A and B among the six climatic zones. Mean duration, peak timing and transmission rates of influenza A and B epidemics did not display synchronicity between either the three age groups or the six climatic zones. The magnitude of the linear growth and decay rates of mean weekly transmission rates vary by different climatic zones and age groups. This study suggests that the epidemic features of influenza A and B vary between geo-climatic regions and age groups. Our findings provide valuable insight for public health authorities to adjust prevention and control strategies of seasonal influenza for specific age groups in specific climatic regions in Australia.

W2.hu@qut.edu.au