

Interruption of influenza transmission under public health emergency response based on real-world data, Beijing.

Ying Sun¹, Quanyi Wang², Xiaoli Wang³, Shuangsheng Wu⁴, Yi Zhang³, Yang Pan⁵, Li Zhang⁴, Wei Duan⁶, Chunna Ma⁴, Peng Yang⁷, and Zaihua Wei³

¹ Beijing Center for Disease Prevention and Control

²Beijing Center for Disease Prevention and Control, Beijing, China; Beijing Research Center for Preventive Medicine, Beijing

³Beijing Center for Disease Prevention and Control

⁴Beijing Center for Disease Prevention and Control (CDC); Capital Medical University School of Public Health and Family Medicine

⁵Beijing Centre for Disease Prevention and Control (CDC)

⁶Beijing Center for Disease Prevention and Control (CDC)

⁷Beijing Center for Diseases Prevention and Control

April 05, 2024

Abstract

Background. To estimate effect of COVID-19 control measures taken to mitigate community transmission in many regions, we analyzed data based on influenza surveillance system in Beijing from week 27th, 2014 to week 26th, 2020. **Methods.** We collected weekly number of influenza-like illness (ILI), weekly positive proportion of ILI and weekly ILI proportion in outpatients and the date of COVID-19 measures. We compared influenza activity indicators of influenza season 2019/2020 with preceding five seasons and built two ARIMAX models to estimate the effective of COVID-19 measures. **Results.** Compared with preceding five influenza seasons, ILIs, positive proportion of ILI, and duration of influenza epidemic period decreased from 13% to 54%, especially, the number of weeks from the peak to the end of influenza epidemic period, decreased from 12 to one. After natural decline considered, weekly ILIs decreased by 48.6% and weekly positive proportion dropped 15% in the second week after emergency response declared, and finally COVID-19 measures reduced 83%. **Conclusions.** We conclude public health emergency response can interrupt the transmission of influenza and other respiratory infectious diseases markedly. **Keyword.** COVID-19 control measures; influenza; ARIMAX

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