

# Social separation stops flu spread, but must be started soon

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A disease spread simulation has emphasized that flu interventions must be imposed quickly, if they are to be effective. Researchers writing in the open access journal *BMC Public Health* have shown that staying at home, closing schools and isolating infected people within the home should reduce infection, but only if they are used in combination, activated without delay and maintained for a relatively long period.

Professor George Milne and his colleagues from the University of Western Australia (UWA) simulated the effect of social distancing on the spread of a [flu virus](#) within a small town. Their research used a detailed, individual-based model of a real community with a population of approximately 30,000 (Albany, Australia) using simulation software engineered by UWA's Dr Joel Kelso. Milne said, "Our results suggest a critical role of combined social distancing measures in the potential control of a future [pandemic](#). Non-pharmaceutical social distancing interventions are capable of preventing less-infectious influenza epidemics and of significantly reducing the rate of development and overall burden of the worst epidemics".

The research investigated the effects, alone and in combination, of workplace non-attendance, school closure, isolating infected family members inside the home and reducing contact within the wider community. According to Milne, "While such draconian measures seem unlikely to be mandated given their impact on personal freedom, they appear to have a key role to play in delaying the development of a 'worst case' influenza epidemic. They may be critical in holding back an

epidemic until vaccines are deployed on a sufficient scale that subsequent relaxation of these rigorous measures will not result in a consequential acceleration in the scale of the outbreak".

The measures described must, however, be employed as soon as possible after the first individuals within the population have been infected, if not preemptively. This study found that, for an outbreak of influenza approximately as infectious as the 1918 Spanish Flu pandemic, the combination of all intervention measures must be introduced within 2 weeks of the first case appearing in a town or city, to prevent an epidemic developing. Delays of 2, 3 and 4 weeks resulted in final attack rates of 7%, 21% and 45% respectively.

Milne concludes, "Social distancing interventions are important as they represent the only type of intervention measure guaranteed to be available against a novel strain of influenza in the early phases of a pandemic. They may be readily activated and thought of as a first line of defence in developing and developed countries alike".

More information: Simulation suggests that rapid activation of social distancing can arrest epidemic development due to a novel strain of influenza, Joel K Kelso, George J Milne and Heath Kelly, [BMC Public Health](#) 2009, 9:117 doi:10.1186/1471-2458-9-117. Article available at journal website: [www.biomedcentral.com/1471-2458/9/117/abstract](http://www.biomedcentral.com/1471-2458/9/117/abstract)

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