

Webb, G. F.; Hsieh, Y-H.; Wu, J.; Blaser, M. J.

Pre-symptomatic influenza transmission, surveillance, and school closings: implications for novel influenza A (H1N1). (English) [Zbl 1187.92065](#)

[Math. Model. Nat. Phenom.](#) 5, No. 3, 191-205 (2010).

Summary: Early studies of the novel swine-origin 2009 influenza A (H1N1) epidemic indicate clinical attack rates in children much higher than in adults. Non-medical interventions such as school closings are constrained by their large socio-economic costs. We develop a mathematical model to ascertain the roles of pre-symptomatic influenza transmission as well as symptoms surveillance of children to assess the utility of school closures. Our model analysis indicates that school closings are advisable when pre-symptomatic transmission is significant or when removal of symptomatic children is inefficient. Our objective is to provide a rational basis for school closings decisions dependent on virulence characteristics and local surveillance implementation, applicable to the current epidemic and future epidemics.

MSC:

[92C60](#) Medical epidemiology

[62P25](#) Applications of statistics to social sciences

[65C20](#) Probabilistic models, generic numerical methods in probability and statistics

[62P10](#) Applications of statistics to biology and medical sciences; meta analysis

[37N25](#) Dynamical systems in biology

Cited in **8** Documents

Keywords:

[influenza](#); [symptoms surveillance](#); [pre-symptomatic](#); [age of infection model](#); [school closing policy](#)

Full Text: [DOI](#) [EuDML](#)