

# School closures slow spread of pH1N1: study

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Closing elementary and secondary schools can help slow the spread of infectious disease and should be considered as a control measure during pandemic outbreaks, according to a McMaster University led study.

Using high-quality data about the incidence of [influenza](#) infections in Alberta during the 2009 H1N1 [flu pandemic](#), the researchers show that when schools closed for the summer, the transmission of infection from person to person was sharply reduced.

"Our study demonstrates that school-age children were important drivers of pH1N1 transmission in 2009," says David Earn, lead author of the study published in [Annals of Internal Medicine](#). Earn is professor in the Department of Mathematics and Statistics and member of McMaster's Michael G. [DeGroote](#) Institute for Infectious Disease Research (IIDR).

Alberta was the only Canadian province to continue extensive virologic testing throughout the first wave and continuously to the middle of the second wave of the 2009 pandemic, allowing researchers to identify the causes of changes in incidence as the pandemic progressed.

"The data that we obtained were so good that our plots immediately revealed a huge drop in incidence when schools were closed for the summer," says Earn. "Using state-of-the-art modeling, we then demonstrated that transmission was reduced by at least 50 per cent."

The model also indicates that [seasonal changes](#) in weather significantly affected influenza transmission in cities in Alberta, but that they were

much less important than [school closures](#).

"Our study emphasizes the value of gathering data consistently throughout an outbreak," says Earn. "For example, in Ontario they imposed testing restrictions on June 11, before schools had closed. We couldn't possibly have done this analysis based on other parts of Canada."

Earn and colleagues intend to continue to encourage policy makers to collect data through the course of an infectious disease outbreak. Only by swabbing large numbers of people throughout a pandemic, he says, the effects of various changes in behavior or control strategies are shown.

He adds that this article will help policy makers make the hard decision of whether or not to close schools during a pandemic outbreak.

"This strongly suggests that closing schools as a preventative measure is a strategy worth seriously thinking about. The next time a disease like SARS or the 1918 flu emerges, this paper will give policy makers more confidence that closing schools is likely to significantly reduce the rate of transmission."

The study also involved McMaster investigators Jonathan Dushoff, associate professor of biology, and Mark Loeb, professor and division director of [infectious diseases](#) for the Michael G. DeGroote School of Medicine, who are also members of the IIDR.

Provided by McMaster University

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