

School closure could reduce swine flu transmission by 21 percent

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A survey carried out in eight European countries has shown that closing schools in the event of an infectious disease pandemic could have a significant role in reducing illness transmission. Researchers writing in the open access journal *BMC Infectious Diseases* compared opportunities for infection on school days and weekends/holidays, finding that they were reduced when schools are shut.

Niel Hens, from Hasselt and Antwerp University, Belgium, led a team of European researchers in using previously published data from Belgium, England & Wales, Finland, Germany, Italy, Luxemburg, Poland and The Netherlands to estimate the effects of school closure on the number of close contacts people make in a day. He said, "Mathematical models of how [infectious diseases](#) spread from person to person through close contacts rely on assumptions regarding the underlying transmission process. One of these assumptions is that school closure will result in reduced exposure for children. Until now, however, the exact impact of this measure has not been proven".

Hens and his colleagues found that, in general, contacts are reduced by about 10% when schools are closed. On weekends between-generation mixing becomes more frequent (eg, through family gatherings), and same age mixing becomes relatively less frequent. According to Hens, "Children are important spreaders of many close contact pathogens due to their frequent and intimate social contacts, their general hygiene, and perhaps their increased shedding. The reduced opportunity for contact we describe here would be a great benefit in a pandemic situation".

The researchers conclude, "If we can assume that school closure in a pandemic situation resembles school closure during holiday periods, then our results show that such a strategy would have significant impact on disease transmission, of about 21%. Of course, this is a conservative estimate as, during a [pandemic](#), typical weekend activities with a strong social component such as team sports and cultural outings may not take place. On the other hand, the expected large macroeconomic costs of school closures would have to be balanced against these benefits".

More information: Estimating the impact of school closure on social mixing behaviour and the transmission of close contact infections in eight European countries, Niel Hens, Girma Minalu Ayele, Nele Goeyvaerts, Marc Aerts, Joel Mossong, John W Edmunds and Philippe Beutels, *BMC Infectious Diseases* (in press), www.biomedcentral.com/bmcinfectdis/

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