

Yale-led study finds a common-sense link between behavior and epidemics

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Common sense may be as powerful as public policy in reducing exposure to epidemics, according to a recent Yale-led study. It might be a lot less expensive and disruptive, as well, researchers say.

Using federal data to examine how people acted during the 2009 swine flu epidemic, a team of researchers found that small behavioral changes by individuals made a [significant difference](#) in reducing cases of the disease. According to the findings, published in the *Proceedings of the Royal Society B*, people on average stayed in their homes for an extra 22

minutes a day at the peak of the epidemic, reducing their contact with other people and cutting the number of [flu cases](#) by 13%. By comparison, the average person spends about 34 additional minutes at home during extreme weather events.

"That's a pretty significant change," said Eli Fenichel, assistant professor at the Yale School of Forestry & Environmental Studies (F&ES) and the paper's senior author. "Reducing contact with others during a flu epidemic is common sense, even if it's a small reduction. Twenty-odd minutes doesn't sound like a lot, but when you have the average person in the United States doing it, it represents far fewer contacts and reduces the risks for transmission of disease. It also shows that people do give up things to protect their health, at least in the short term."

The research supports a 2011 paper, published by Fenichel, which suggested that even minor behavioral changes can significantly reduce the number of cases during an epidemic. Researchers say the findings also demonstrate the importance of considering behavior when creating public policy.

It is the first study to use actual data from a general data set to review how people react to an epidemic; researchers used data from the American Time Use Survey, a U.S. Bureau of Labor Statistics-based project that provides nationally representative estimates on how, when, and with whom people spend their time.

In addition to showing that people help themselves avoid getting sick, the study also underscores the critical role of human reaction to [epidemics](#) when promulgating public policy, researchers say.

"These results are important because they show the importance of accounting for behavior in public health policy," said Jude Bayham, the study's lead author, who conducted the research while he was a

postdoctoral research associate at F&ES. "We've shown that people make small, voluntary choices that can make a critical difference in limiting the spread of infectious disease. The government may not have to command people to change their behavior."

The authors agree with President Obama's recent presidential executive order that government agencies better incorporate behavioral research into policy, and suggest that their study can provide an example of the kind of behavioral research that is useful for policy-makers.

"It's important to use epidemiological models when writing public policy, but it's also important that those models produce a correct baseline," said Bayham. "Those models must include the voluntary actions people take. Small, voluntary choices can make a critical difference in limiting the spread of infectious disease. Knowing that can change public policy or at least reduce the degree that [public policy](#) restricts personal and business behaviors."

More information: Jude Bayham et al. Measured voluntary avoidance behaviour during the 2009 A/H1N1 epidemic, *Proceedings of the Royal Society B: Biological Sciences* (2015). [DOI: 10.1098/rspb.2015.0814](https://doi.org/10.1098/rspb.2015.0814)

Provided by Yale University

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