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Universal paid sick leave reduces spread of flu, according to simulation

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Allowing all employees access to paid sick days would reduce influenza infections in the workplace, according to a first-of-its-kind analysis by University of Pittsburgh Graduate School of Public Health modeling experts.

The researchers simulated an influenza epidemic in Pittsburgh and surrounding Allegheny County and found that universal access to paid sick days would reduce flu cases in the workplace by nearly 6 percent and estimated it to be more effective for small, compared to large, workplaces. The results are reported in the online version of the *American Journal of Public Health* and will be in the August print issue.

"The Centers for Disease Control and Prevention recommends that people with flu stay home for 24 hours after their fever breaks," said lead author Supriya Kumar, Ph.D., M.P.H., a post-doctoral associate in Pitt Public Health's Department of Epidemiology. "However, not everyone is able to follow these guidelines. Many more workers in small workplaces than in large ones lack access to paid sick days and hence find it difficult to stay home when ill. Our simulations show that allowing all workers access to paid sick days would reduce illness because fewer workers get the flu over the course of the season if employees are able to stay home and keep the virus from being transmitted to their co-workers."

In addition to investigating the impact of universal access to paid sick days, Dr. Kumar and her colleagues looked at an alternative intervention

they termed "flu days," in which all employees had access to one or two paid days to stay home from work and recover from the flu. The idea behind flu days is that they encourage employees to stay home longer than they currently do, thus reducing the potential for them to transmit illness to colleagues at work.

Giving employees one flu day resulted in more than a 25 percent decrease in influenza infections due to workplace transmission. A two flu-day policy resulted in a nearly 40 percent decrease. The researchers found that flu days were more effective for larger workplaces, defined as having 500 or more employees.

Dr. Kumar and her colleagues used a modeling system developed at Pitt Public Health called "Framework for Reconstructing Epidemic Dynamics" (FRED), which is part of work housed in Pitt's Modeling of Infectious Disease Agents Study (MIDAS) National Center of Excellence. MIDAS was initiated by the National Institute of General Medical Sciences to investigate novel computational and mathematical models of existing and emerging infectious diseases.

"Our mission is to protect the U.S. and the global community against communicable infectious disease threats," said senior author Donald S. Burke, M.D., Pitt Public Health dean and UPMC-Jonas Salk Chair of Global Health. "Our modeling work allows scientists both here and worldwide to investigate strategies to minimize epidemics. At the heart of this effort is free, open data sharing."

"These findings make a strong case for paid sick days," said Dr. Kumar. "Future research should examine the economic impacts of paid sick-day policies."

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