Next Flu Pandemic Could Double Past Cost Estimates

Policy makers’ and public health officials’ proper reactions could hold down the total costs to U.S. GDP of an influenza outbreak. Otherwise, costs could be nearly double previous estimates.

McLean, VA — A pandemic influenza outbreak in the United States could have widespread economic costs nearly double the total amounts experts have previously calculated, depending on how the public, government, and businesses responded to an epidemic, according to policy and risk experts in a new study.

Using an advanced methodology also applicable to the Zika virus and other biothreats to calculate the total cost of an influenza outbreak, the experts conclude that if the public used influenza vaccines during a pandemic outbreak the U.S. GDP loss would be $34.4 billion. It would be a lot higher, however, if the public didn’t use vaccines: $45.3 billion.

That’s a much larger price tag than other studies have found. But it’s not just the use or non-use of vaccines that drives costs.

Most economic studies of pandemic influenza focus on direct impacts such as vaccination, hospitalization, injury, death, and business revenue or profit losses from reduced workforce. But those conventional direct and indirect economic impacts related to lost work days “can be exacerbated greatly by various types of behavioral reactions and over-reactions by the public, businesses and governments,” says Fynnwin Prager of California State University, Dominguez Hills. Behavioral reactions include, for example, voluntary and mandatory avoidance of public places and interactions, such as sporting events, subway stations, quarantines, and travel bans, with significant economic ripple effects.

The new study by Professor Prager and colleagues Dan Wei and Adam Rose of University of Southern California—Total Economic Consequences of an Influenza Outbreak in the United States—was published in the online version of Risk Analysis, a publication of the Society for Risk Analysis. The study was conducted as part of an effort by the U.S. Department of Homeland Security’s National Biosurveillance Integration Center (NBIC) to strengthen its decision-support capabilities. The study was funded by a contract with USC’s Center for Risk and Economic Analysis of Terrorism Events, a DHS Science and Technology Center of Excellence, with which all three authors are affiliated.
In their study, the authors estimate “the relative prominence of the various economic consequence types,” as well as complicating factors, many of them not addressed in any prior study. These complicating factors include different types of avoidance behavior, such as the already noted avoidance of public events and facilities. They also include what are called resilience actions, such as partnering with businesses to encourage individuals to return to work sooner and make up for lost work through flexible working hours to recapture lost production. These resilience actions can soften the overall impact of an influenza outbreak. The analysis “illustrates the importance of a more comprehensive framework for accurately measuring the macroeconomic impacts of biothreats,” the authors write.

The study analyzed the economic impacts of a seasonal and a pandemic outbreak scenario. For both scenarios, vaccinations reduce the overall spread of the virus and, hence, are expected to reduce the magnitude of overall economic impacts. Results indicate that, in the absence of avoidance and resilience effects, the pandemic scenario could result in a U.S. GDP loss of $25.4 billion, but vaccination could reduce the losses to $19.9 billion. But when avoidance and resilience are taken into account, a pandemic influenza outbreak could result in GDP losses of $45.3 billion without vaccination and $34.4 billion with vaccination.

The study results highlight a number of actionable items that government policy makers and public health officials can use to help reduce potential economic losses from the outbreaks. “Attempting to influence avoidance behavior through public messaging and information campaigns, so-called ‘nudges,’ and other incentives may hold the potential for greatly reducing the economic costs of an influenza outbreak at a relatively low cost,” the authors write.

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Contact David Clarke at davidpauleclarke@gmail.com to arrange an interview with the author. The complete study is available at: [http://onlinelibrary.wiley.com/doi/10.1111/risa.12625/full](http://onlinelibrary.wiley.com/doi/10.1111/risa.12625/full)