

Study links real-time data to flu vaccine strategies

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Adaptive vaccination strategies, based on age patterns of hospitalizations and deaths monitored in real-time during the early stages of a pandemic, outperform seasonal influenza vaccination allocation strategies, according to findings reported Dec. 3 by researchers, including two from Arizona State University, in the online journal *PLoS ONE*.

Using data from the A(H1N1) influenza [outbreak](#) in Mexico earlier this year, the authors conclude that a modeling approach that targets specific age groups for vaccinations, could help countries develop policies to mitigate the impact of ongoing and secondary pandemic waves.

"These new data shed light on which age groups are at high risk of infection and transmission during a [pandemic influenza](#) outbreak. Unlike seasonal vaccination strategies that target young children and seniors, our adaptive strategy based on early epidemiological data prioritized the young and adults between the ages of 20 and 59 years, which was based on the pattern of hospitalizations and deaths during the Mexican pandemic outbreak," says mathematical epidemiologist Gerardo Chowell-Puente, an assistant professor in the School of Human Evolution and Social Change in ASU's College of Liberal Arts and Sciences.

The adaptive vaccination strategy relied on data reported to the Mexican National Epidemiological Surveillance System on hospitalization and deaths 25 and 37 days into the outbreak. The study's adaptive strategy yielded a 37 percent reduction in hospitalizations and 42 percent reduction in deaths if the vaccinations started on day 25 of the outbreak

and reached 20 percent of the population. The benefits of the strategy were slightly lower on day 37 of the outbreak, providing a 35 percent reduction in influenza-related deaths and 22 percent reduction in hospitalizations when compared to seasonal influenza that targets traditional high-risk age groups (infants, young children and persons 65 years and older).

"The adaptive strategy was found to be effective in reducing the number of hospitalizations and deaths during a pandemic influenza when vaccine resources are scarce," says Chowell-Puente. "Knowledge of age-specific rates is crucial in helping policymakers develop intervention policies that could help to save lives. If vaccine supplies are limited, targeting these age groups should be considered."

More information: "Adaptive vaccination strategies to mitigate [pandemic influenza](#): Mexico as a case study" appears in *PLoS One*.

Source: Arizona State University ([news](#) : [web](#))

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