

Study shows climate change could affect onset, severity of flu seasons

Arizona State University

The American public can expect to add earlier and more severe flu seasons to the fallout from climate change, according to a research study published online Jan. 28 in PLOS Currents: Influenza.

A team of scientists led by Sherry Towers, research professor in the Mathematical, Computational and Modeling Sciences Center at Arizona State University, studied waves of influenza and climate patterns in the United States from the 1997-1998 season to the present.

The team's analysis, which used Centers for Disease Control data, indicates a pattern for both A and B strains: warm winters are usually followed by heavy flu seasons.

"It appears that fewer people contract influenza during warm winters, and this causes a major portion of the population to remain vulnerable into the next season, causing an early and strong emergence," says Towers. "And when a flu season begins exceptionally early, much of the population has not had a chance to get vaccinated, potentially making that flu season even worse."

The current flu season, which is still in high gear in parts of the nation, began early and fiercely. It followed a relatively light 2011-2012 season, which saw the lowest peak of flu since tracking efforts went into effect, and coincided with the fourth warmest winter on record. According to previous studies, flu transmission decreases in warm or humid conditions.

If global warming continues, warm winters will become more common, and the impact of flu will likely be more heavily felt, say the study's authors.

Mathematical epidemiologist Gerardo Chowell-Puente, an associate professor in the School of Human Evolution and Social Change in the College of Liberal Arts and Sciences, adds that the findings could inform preparedness efforts following mild winters: "The expedited manufacture and distribution of vaccines and aggressive vaccination programs could significantly diminish the severity of future influenza epidemics."

The study was partially supported by the Multinational Influenza Seasonal Mortality Study, overseen by the National Institutes of Health's Fogarty International Center. The goal of the overarching study is to better grasp the character and trajectory of influenza in all its forms. Other team members are Rasheed Hameed, Matthew Jastrebski, Maryam Khan, Jonathan Meeks, Anuj Mubayi and George Harris of Northeastern Illinois University.

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