

Arizona State epidemiologist to explore dynamics of Mexico's H1N1 pandemic

February 21 2010

Influenza surveillance mechanisms in Mexico were adequate during the fast-spreading H1N1 outbreak in 2009, yet Mexico did not have the infrastructure to quickly identify the emergence of this novel strain, according to an Arizona State University (ASU) epidemiologist.

Carlos Castillo-Chavez, director of ASU's Mathematical, Computational and Modeling Sciences Center in the College of Liberal Arts and Sciences, will take a close look at factors impacting the influenza dynamics within Mexico during a presentation Feb. 21 at the annual meeting of the American Association for the Advancement of Science. Castillo-Chavez's presentation, "Life in the Fast Lane: H1N1 Pandemic Dynamics in Mexico's Central Influenza Corridor," is part of a session of how mathematics is used for investigating biological hierarchies.

"Mexico public health officials took immediate and massive social-distancing measures during the initial outbreak that were effective, but only over a short-time scale," says Castillo-Chavez. "But the second wave hit Mexico and the rate of infections exceeded those over the months of April through June 2009. The combination of large movements of people in Mexico's central influenza corridor and past strict social-distancing measures seemed to have had a dramatic effect on the ongoing [influenza](#) dynamics within Mexico. Fortunately, disease severity has not been as devastating as in past [pandemics](#)."

In his analysis of Mexico's response to the H1N1 virus and the dynamics surrounding the [influenza outbreak](#), Castillo-Chavez will address a

number of lingering questions, including whether social-distancing measures (no longer in effect) combined with summer school breaks not only slowed down the first wave but could have resulted in a less manageable second wave.

He also will break down what was learned from Mexico's experience to answer such questions as: Is the lack of advanced diagnostic facilities and uniform surveillance systems, common in poor nations, "good" for the rest of the world? What will be the impact of the limited access that the have-nots (individuals or nations) have to adequate supplies of antiviral drugs and the H1N1 vaccine on the dynamics of [H1N1](#)? What are the optimal public health policies for non-wealthy nations?

Provided by Arizona State University

Citation: Arizona State epidemiologist to explore dynamics of Mexico's H1N1 pandemic (2010, February 21) retrieved 2 May 2024 from <https://medicalxpress.com/news/2010-02-arizona-state-epidemiologist-explore-dynamics.html>

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