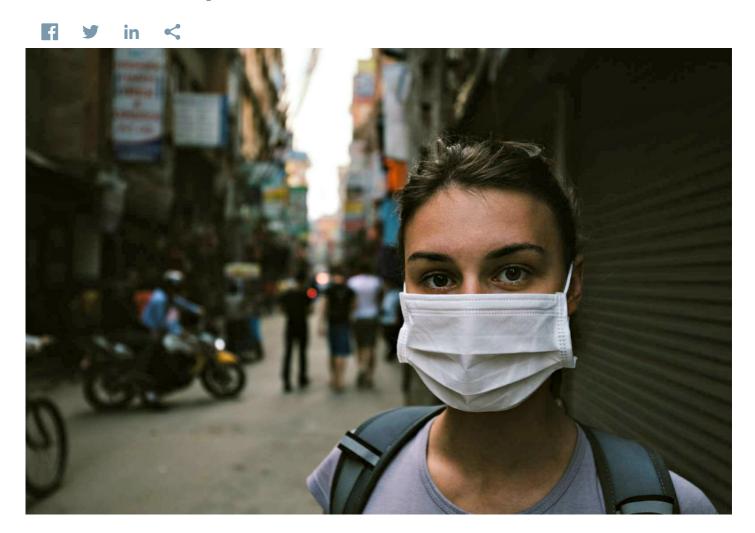# Software Program Developed To Predict The Spread Of The Next Big Pandemic

Los Alamos National Laboratory

From 1918 to 1919, the "Spanish Flu" pandemic killed more than 40 million people worldwide and is now thought to have been originally an avian flu. The last pandemic to strike (the "Hong Kong Flu") caused more than one million deaths in 1968-1969.

> " *Considering that pandemics historically occur every 30-40 years, much concern has been raised recently about how the next pandemic might affect world populations.*

In 2006, scientists Timothy C. Germann, Ph.D., Kai Kadau, Ph.D., and Catherine Macken, Ph.D., of Los Alamos National Laboratory in New Mexico disclosed an innovative new software program called EpiCast (Epidemiological Forecasting), which can accurately simulate the effects of a pandemic in any part of the world. Funding was provided by the U.S. Department of Energy and other government sources.

Unlike other models, EpiCast utilizes a stochastic person-to-person model to account for the natural variability in any

population, which makes the results more accurate and beneficial. Variables that are factored into the calculations include different age groups, household sized demographics, population density, immunity status and worker mobility. This data allows scientists and government officials to determine the most effective procedures for limiting the spread of the pandemic, maintaining order and minimizing casualties.

Los Alamos National Laboratory has licensed EpiCast to The Company for Information Visualization and Analysis (CIVA). CIVA will create in-depth flu-impact models for governments, private-sector companies and other organizations so they can have effective countermeasures in place in the event of a pandemic outbreak.

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