ICU
MANAGEMENT & PRACTICE

Assessing Disease Surveillance and Notification Systems After a Pandemic

Significant investments over the past decade into disease surveillance and notification systems appear to have “paid off” and the systems “work remarkably well,” says a Georgetown University Medical Center researcher who examined the public health response systems during the 2009 H1N1 influenza pandemic. The findings were published online yesterday in PLOS ONE.

After the Sept. 11 terrorist attacks in the U.S. and the potential threat of bioterrorism, many new advanced systems for disease surveillance and notification have been developed and implemented throughout the world. The goal of these systems is not only to detect a possible biological attack, but to characterize emerging pathogens so that a public health response can be implemented rapidly.

“You can’t test these systems on a day-to-day basis,” says the study’s corresponding author, Michael A. Stoto, PhD, a professor in the department of health systems administration at Georgetown University School of Nursing & Health Studies , part of Georgetown University Medical Center. “The only way to test these systems is how they perform in a real public health emergency.”

Stoto and his colleagues conducted a systematic and detailed review of the scientific literature, official documents, websites and news reports to construct a timeline of events for the 2009 H1N1 influenza pandemic, including the emergence and spread of the virus, local health officials’ awareness and understanding of the outbreak, and notifications about the events and their implications.

Stoto’s analysis focused on three critical events:

- the identification of a novel viral subtype in two California children,
- the recognition that multiple disease outbreaks throughout Mexico were connected to the two California cases, and
- the additional connection of about 100 New York City school children who had been to Mexico for spring break.

“Enhanced laboratory capacity in the U.S. and Canada led to earlier identification and characterization of the novel H1N1 strain,” says Stoto, an expert on population health and public health assessment. “That recognition triggered national and global pandemic plans.” He says tests were quickly developed to aid in surveillance and clinical decision-making and a vaccine was developed in time for the second H1N1 pandemic wave in fall 2009.

He also credits enhanced global notification systems that led to an earlier detection and characterization of the outbreak by “connecting the dots” between the cases in California, Mexico and New York City.

“The systems worked remarkably well,” Stoto says, estimating that it might have been possible for the detection to be made a week sooner, though he says it’s not likely that earlier detection would have changed the outcome. “Had the pandemic occurred as recently as 10 years ago, the delay could have been much greater,” Stoto adds.

“What really made a difference in 2009 was that people from the U.S. and Mexico talked to each other through a formalized system of communication,” he says. “I think taxpayers and policymakers want to know if the billions invested after 9-11 to prepare for a biological event is paying off. I think the answer is ‘yes.’ We’ve made significant progress in a short time.”

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Source: Georgetown University Medical Center

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