

19 May 2009

*This supplement has been prepared to present scientific and technical news items that may be of more interest to technical personnel at RDT&E activities and the labs, or the medics rather than the broader readership of the basic CB Daily. Due to the nature of the material, the articles, if available online, are usually only available through subscription services thus making specific links generally unavailable. Thus, usually only the bibliographic citation is available for use by an activity's technical library.*

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## **Chem-Bio News – Pandemic Influenza Editon #61**

**1. U.S. HEALTH OFFICIALS TROUBLED BY NEW FLU PATTERN:** *"The new influenza strain circulating around most of the United States is putting a worrying number of young adults and children into the hospital and hitting more schools than usual, U.S. health officials said on Monday."*

**2. SWINE FLU'S SPREAD IN JAPAN MAY RAISE PANDEMIC ALERT (UPDATE1):** *"Dozens of swine flu cases in Japan may prompt the World Health Organization to declare a pandemic, a former WHO adviser said, spurring demand for vaccines to fight the contagion."*

**3. SIMULATION SUGGESTS THAT RAPID ACTIVATION OF SOCIAL DISTANCING CAN ARREST EPIDEMIC DEVELOPMENT DUE TO A NOVEL STRAIN OF INFLUENZA:** *"Our results suggest a critical role of social distancing in the potential control of a future pandemic and indicate that such interventions are capable of arresting influenza epidemic development, but only if they are used in combination, activated without delay and maintained for a relatively long period."*

**4. INFLUENZA A: MALAYSIA PUSHES FOR EXIT SCREENING:** *"Malaysia is pushing for the World Health Organisation (WHO) to adopt a requirement for affected countries to implement exit screening to stop the spread of the new influenza A, following concerns that a second wave of H1N1 could be more deadly."*

**5. PUBLIC HEALTH LABORATORIES PROACTIVE IN PLANNING FOR FLU OUTBREAK:** *"One state called to tell me that, exactly as the model predicted, the spots where they needed the most help were with specimen accessioning and result reporting," said Rosemary Humes, senior advisor for scientific affairs at APHL."*

**6. UNIVERSAL DETECTION AND IDENTIFICATION OF AVIAN INFLUENZA VIRUS BY USE OF RESEQUENCING MICROARRAYS:** *"This study establishes that the RPM platform is a broad-spectrum pathogen detection and surveillance tool for monitoring the circulation of prevalent influenza viruses in the poultry industry and in wild birds or incidental exposures and infections in humans."*

# **CB Daily Report**

### **U.S. HEALTH OFFICIALS TROUBLED BY NEW FLU PATTERN**

By Maggie Fox

Reuters

May 18, 2009

"The new influenza strain circulating around most of the United States is putting a worrying number of young adults and children into the hospital and hitting more schools than usual, U. S. health officials said on Monday.

The H1N1 swine flu virus killed a vice principal at a New York City school over the weekend and has spread to 48 states. While it appears to be mild, it is affecting a disproportionate number of children, teenagers and young adults.

This includes people needing hospitalization -- now up to 200, said Dr. Anne Schuchat of the U.S. Centers for Disease Control and Prevention.

"That's very unusual, to have so many people under 20 to require hospitalization, and some of them in (intensive care units)," Schuchat told reporters in a telephone briefing.

"We are now experiencing levels of influenza-like illness that are higher than usual for this time of year," Schuchat added. "We are also seeing outbreaks in schools, which is extremely unusual for this time of year."

The full article can be found at: <http://www.reuters.com/article/healthNews/idUSTRE54H3QO20090518>

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### **SWINE FLU'S SPREAD IN JAPAN MAY RAISE PANDEMIC ALERT (UPDATE 1)**

By Simeon Bennett and Kanoko Matsuyama

Bloomberg.com

May 19, 2009

"Dozens of swine flu cases in Japan may prompt the World Health Organization to declare a pandemic, a former WHO adviser said, spurring demand for vaccines to fight the contagion.

Japan's health ministry said 176 people have the virus, formally known as A/H1N1, after 33 new infections were confirmed today. Community-wide outbreaks in a region outside North America would prompt the WHO to raise its pandemic alert to the highest level, said Hitoshi Oshitani, the former head of the agency's Western Pacific region.

"Japan is definitely having human-to-human transmission," Oshitani said yesterday in a telephone interview. "The WHO will have to take the Japanese cases into consideration when

deciding whether to raise the pandemic alert.”

The full article can be found at: <http://www.bloomberg.com/apps/news?pid=20601101&sid=aT9mLkcgLxEQ&refer=japan>

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## **SIMULATION SUGGESTS THAT RAPID ACTIVATION OF SOCIAL DISTANCING CAN ARREST EPIDEMIC DEVELOPMENT DUE TO A NOVEL STRAIN OF INFLUENZA**

By Joel K Kelso, George J Milne, and Heath Kelly

BMC Public Health

April 29, 2009

### “Background

Social distancing interventions such as school closure and prohibition of public gatherings are present in pandemic influenza preparedness plans. Predicting the effectiveness of intervention strategies in a pandemic is difficult. In the absence of other evidence, computer simulation can be used to help policy makers plan for a potential future influenza pandemic. We conducted simulations of a small community to determine the magnitude and timing of activation that would be necessary for social distancing interventions to arrest a future pandemic.

### Methods

We used a detailed, individual-based model of a real community with a population of approximately 30,000. We simulated the effect of four social distancing interventions: school closure, increased isolation of symptomatic individuals in their household, workplace nonattendance, and reduction of contact in the wider community. We simulated each of the intervention measures in isolation and in several combinations; and examined the effect of delays in the activation of interventions on the final and daily attack rates.

### Results

For an epidemic with an  $R_0$  value of 1.5, a combination of all four social distancing measures could reduce the final attack rate from 33% to below 10% if introduced within 6 weeks from the introduction of the first case. In contrast, for an  $R_0$  of 2.5 these measures must be introduced within 2 weeks of the first case to achieve a similar reduction; delays of 2, 3 and 4 weeks resulted in final attack rates of 7%, 21% and 45% respectively. For an  $R_0$  of 3.5 the combination of all four measures could reduce the final attack rate from 73% to 16%, but only if introduced without delay; delays of 1, 2 or 3 weeks resulted in final attack rates of 19%, 35% or 63% respectively. For the higher  $R_0$  values no single measure has a significant impact on attack rates.

### Conclusion

Our results suggest a critical role of social distancing in the potential control of a future pandemic and indicate that such interventions are capable of arresting influenza epidemic development, but only if they are used in combination, activated without delay and maintained for a relatively long period.”

The full article can be found at: <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2680828>

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## **INFLUENZA A: MALAYSIA PUSHES FOR EXIT SCREENING**

NSTOnline

May 16, 2009

"Malaysia is pushing for the World Health Organisation (WHO) to adopt a requirement for affected countries to implement exit screening to stop the spread of the new influenza A, following concerns that a second wave of H1N1 could be more deadly. Health Minister Datuk Seri Liow Tiong Lai said, at present, the WHO did not make exit screening mandatory and this had created tremendous pressure on other countries that were not affected by the outbreak to remain vigilant.

It is not recommending travel restrictions following the outbreak, but has advised individuals who are ill to delay their travel plans and returning travellers who fall ill, to seek appropriate medical care.

Exit screening was first brought up during the Asean + 3 health ministers' meeting in Bangkok last week but some countries were against the move as it would have an impact on travel and trade.

"If we can screen travellers from affected countries before they leave, it will help us to contain the spread of the virus," Liow said here before leaving for the 62nd WHO general assembly in Geneva, Switzerland."

The full article can be found at: [http://www.nst.com.my/Saturday/Frontpage/2558316/Article/pppull\\_index\\_html](http://www.nst.com.my/Saturday/Frontpage/2558316/Article/pppull_index_html)

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## **PUBLIC HEALTH LABORATORIES PROACTIVE IN PLANNING FOR FLU OUTBREAK**

Virus Weekly

May 19, 2009

"The novel H1N1 diagnostic kits - developed and deployed by CDC in only ten days - were delivered to over 60 state and local public health laboratories this past weekend. After validation, these labs will conduct most of the confirmatory testing, which previously had been handled only by CDC. Such a step not only means that results will take less time, but also that disease control measures can be put into place faster.

Demand for testing is overwhelming: one jurisdiction reported a backlog of 3,500 specimens, with 1,000 coming in daily, and capacity to test only 200 per day. However,

public health laboratories anticipated such a surge and so they developed response plans, participated in trainings and simulation exercises, and formed networks in which they could easily ask each other for assistance.

Simply planning for a pandemic, though, is not sufficient, since plans often gather dust waiting to be implemented and because gaps are usually not identified until the plan is exercised. Recognizing this, APHL, CDC and Booz Allen Hamilton conducted a pandemic influenza simulation exercise in August of 2008.

"One state called to tell me that, exactly as the model predicted, the spots where they needed the most help were with specimen accessioning and result reporting," said Rosemary Humes, senior advisor for scientific affairs at APHL. "Because we identified potential problem areas in advance, the public health laboratory has been able to respond much more rapidly."

Link not available.

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## **VIRUS BY USE OF RESEQUENCING MICROARRAYS**

TB & Outbreaks Week

May 19, 2009

"In this study, we demonstrate that high-density resequencing pathogen microarrays (RPM) can be such a tool. The results from 37 influenza virus isolates show that the RPM platform is an effective means for detecting and subtyping influenza virus, while simultaneously providing sequence information for strain resolution, pathogenicity, and drug resistance without additional analysis."

"This study establishes that the RPM platform is a broad-spectrum pathogen detection and surveillance tool for monitoring the circulation of prevalent influenza viruses in the poultry industry and in wild birds or incidental exposures and infections in humans."

The full article can be found at: (B.C. Lin, et. al., "Universal Detection and Identification of Avian Influenza Virus by Use of Resequencing Microarrays". Journal of Clinical Microbiology, 2009; 47(4):988-993). Link not available.

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**Steve Tesko:** [Steve.Tesko@anser.org](mailto:Steve.Tesko@anser.org)

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