

30 June 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 Edition #67

1. SWINE FLU 'SHOWS DRUG RESISTANCE': *“Experts have reported the first case of swine flu that is resistant to tamiflu - the main drug being used to fight the pandemic.”*

2. INDONESIA TO ASK TOURISTS TO WEAR MASKS: *“Indonesia is planning to ask all people arriving from Australia and other swine flu-affected countries to wear face masks for at least three days, the health minister says.”*

3. NOVEL H1N1 FLU CAN CAUSE SEVERE RESPIRATORY ILLNESS: *“Novel H1N1 influenza can cause severe respiratory illness, profound lung damage, and death even in patients with no underlying conditions to make them vulnerable, a team of physicians from Mexico report in a rush article published online today by the New England Journal of Medicine (NEJM).”*

4. EXPERTS LOOK FOR CLUES IN 1918 PANDEMIC VIRUS FAMILY TREE: *“To outside observers, the novel H1N1 virus spreading quickly to every corner of the globe must seem like it came out of nowhere, but the organism is a fourth generation of the 1918 pandemic virus and comes from an H1N1 family tree that is colorful and complex, according to two historical reviews that appear today in the New England Journal of Medicine (NEJM).”*

5. RESEARCHERS DESCRIBE HISTORY OF SWINE FLU AND WARN ABOUT USING EXTINCT VIRUSES: *“In a leading medical journal this week US researchers describe the 90-year history of swine flu and warn about working with “freezer” viruses, which they suspect is how an H1N1 virus that closely resembles a temporarily “extinct” 1950s strain resurrected some 20 years later and continues to circulate as a seasonal flu strain today.”*

CB Daily Report

Chem-Bio News

SWINE FLU 'SHOWS DRUG RESISTANCE'

BBC

June 29, 2009

"Experts have reported the first case of swine flu that is resistant to tamiflu - the main drug being used to fight the pandemic.

Roche Holding AG confirmed a patient with H1N1 influenza in Denmark showed resistance to the antiviral drug."

"This is in contrast to seasonal H1N1 flu where a Tamiflu resistant strain emerged last year and is now widely circulating."

The full article can be found at: <http://news.bbc.co.uk/2/hi/health/8124987.stm>

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INDONESIA TO ASK TOURISTS TO WEAR MASKS

WAtoday.com.au

June 29, 2009

"Indonesia is planning to ask all people arriving from Australia and other swine flu-affected countries to wear face masks for at least three days, the health minister says.

The presence of the A(H1N1) virus was confirmed in Indonesia only last week and so far four of the eight known cases have been foreigners."

"We'll give them the masks when they arrive at the airports and tell them to wear them for three days."

But the minister said the government had no intention of enforcing the precaution, which could do serious damage to the country's stuttering tourism industry.

"There'll be no penalty if people don't wear them. You can't expect people to wear masks when they're swimming," Supari said, adding the masks would be handed out to visitors as soon as possible depending on funding."

The full article can be found at: <http://www.watoday.com.au/breaking-news-world/indonesia-to-ask-tourists-to-wear-masks-20090630-d2nz.html>

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NOVEL H1N1 FLU CAN CAUSE SEVERE RESPIRATORY ILLNESS

By Maryn McKenna

CIDRAP News (Center for Infectious Disease Research & Policy – University of Minnesota)

June 29, 2009

"Novel H1N1 influenza can cause severe respiratory illness, profound lung damage, and

death even in patients with no underlying conditions to make them vulnerable, a team of physicians from Mexico report in a rush article published online today by the New England Journal of Medicine (NEJM).

The analysis of 18 patients hospitalized with H1N1 (swine) flu at the National Institute of Respiratory Diseases (INER) in Mexico during the pandemic's earliest days reveals that fewer than half had underlying medical conditions, but more than half needed mechanical ventilation within a day of admission. Seven of the 18 died.

In a companion article, also published in advance online today, a multi-national team from Mexico and the United States document the age distribution of the first month of the H1N1 pandemic in Mexico, where the disease appears to have struck first, and confirm its unusual pattern of severe pneumonia among younger patients. Matching the pattern to those of earlier pandemics, the team speculates on the "biologic plausibility of partial protection" in older people exposed to mid-20th century strains of seasonal flu.

The case series of 18 patients, written by researchers from INER, the Mexican Secretariat of Health and BIRMEX, Mexico's state-owned vaccine-production laboratories, documents the severe illness of the first patients admitted with lab-confirmed H1N1 infection and x-ray-confirmed bilateral pneumonia during the pandemic's first wave.

The 18, of whom 7 died, are a subset of 98 patients hospitalized at the institute with pneumonia or influenza-like illness between March 24, the presumed onset date of the first known case, and April 24. Those 98 were a subset of 214 patients who came to the institute's emergency room with influenza-like illness or severe respiratory distress.

The 18 patients were evenly divided by gender but ranged widely in age, from 9 months to 61 years, with a median age of 38. They were all at least moderately ill, with fever of at least 38°C (100.4°F), cough, and difficulty breathing; 4 of the 5 children had diarrhea.

Most had bloodwork findings that indicated acute viral infections, inflammation and cardiac distress. Half had low blood pressure that persisted after emergency treatment, and 10 of the 18 needed to be put on ventilators within 24 hours of arrival at the hospital."

The full article can be found at: <http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/jun2909h1n1nejm.html>

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EXPERTS LOOK FOR CLUES IN 1918 PANDEMIC VIRUS FAMILY TREE

By Lisa Schnirring

CIDRAP News (Center for Infectious Disease Research & Policy – University of Minnesota)
June 29, 2009

"To outside observers, the novel H1N1 virus spreading quickly to every corner of the globe must seem like it came out of nowhere, but the organism is a fourth generation of the 1918 pandemic virus and comes from an H1N1 family tree that is colorful and complex, according

to two historical reviews that appear today in the New England Journal of Medicine (NEJM).

Understanding the history of swine influenza viruses, particularly their contribution to the 1918 pandemic virus, underscores the need to better comprehend zoonotic viruses as well as the dynamics of human pandemic viruses that can arise from them, the authors report in an early online NEJM edition.

The world is still in a "pandemic era" that began in 1918, wrote three experts from the National Institute of Allergy and Infectious Diseases (NIAID), senior investigator David Morens, MD, medical epidemiologist Jeffery Taubenberger, MD, PhD, and NIAID director Anthony Fauci, MD.

The 1918 virus has used a "bag of evolutionary tricks" to survive in humans and pigs and to launch other novel viruses, they wrote. "The 2009 H1N1 pandemic virus represents yet another genetic product in the still-growing family tree of this remarkable 1918 virus."

The novel H1N1 virus' complex evolutionary history involved genetic mixing within human viruses and between avian- and swine-adapted viruses, gene segment evolution in multiple species, and evolution from the selection pressure of herd immunity in populations at different times, the group wrote, adding. "The fact that this novel H1N1 influenza A virus has become a pandemic virus expands the previous definition of the term,"

Though any new virus is unpredictable, Fauci and his colleagues wrote that in this pandemic era, severity appears to be decreasing over time, with an evolutionary pattern that appears to favor transmissibility over pathogenicity."

The full article can be found at: <http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/jun2909history-jw.html>

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RESEARCHERS DESCRIBE HISTORY OF SWINE FLU AND WARN ABOUT USING EXTINCT VIRUSES

Medical News Today
June 30, 2009

"In a leading medical journal this week US researchers describe the 90-year history of swine flu and warn about working with "freezer" viruses, which they suspect is how an H1N1 virus that closely resembles a temporarily "extinct" 1950s strain resurrected some 20 years later and continues to circulate as a seasonal flu strain today.

The report is by two disease experts at the University of Pittsburgh Graduate School of Public Health and appears in the 29 June 2009 online issue of the New England Journal of Medicine."

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"Burke and Zimmer also describe how the H1N1 virus temporarily became "extinct" in humans in 1957 and then re-appeared 20 years later.

They write of a small contained outbreak of H1N1 among 230 soldiers at Fort Dix in New Jersey that did not spread outside the base, and yet 20 years later, in 1977, H1N1 influenza re-emerged in people living in the former Soviet Union, Hong Kong and northeastern China. However, genetic studies have since shown that this re-emerged strain was not the Fort Dix strain as first suspected, but a very close relative of an earlier strain from 1950.

This leads the authors, and others, to suspect that in 1976, during a "flurry" of investigation to trace the Fort Dix strain, someone accidentally released a "freezer" virus that had been preserved since 1950. There is no proof that this is what happened, it is merely a theory based on the genetic similarity of the 1950 strain to the 1977 strain, which still circulates as a seasonal flu virus today."

The full article can be found at: <http://www.medicalnewstoday.com/articles/155761.php>

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Steve Tesko: Steve.Tesko@anser.org

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