

8 September 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.*

*Should you wish to be removed from this Pandemic Influenza Edition address group, just send an email to one of the people listed at the bottom of this message. This will not affect your continued receipt of the CB Daily.*

## **Chem-Bio News– Pandemic Influenza Edition #77**

**1. AAN COLLABORATES WITH CDC ON H1N1 VACCINE SAFETY MONITORING:** *"The Centers for Disease Control and Prevention (CDC) and the American Academy of Neurology (AAN) are requesting neurologists to report any possible new cases of Guillain-Barré syndrome (GBS) following 2009 H1N1 flu vaccination using the CDC and U. S. Food and Drug Administration Vaccine Adverse Event Reporting System (VAERS)."*

**2. NEW IPHONE APP 'OUTBREAKS NEAR ME' LOCATES H1N1, INFECTIOUS DISEASES:** *"The application, "Outbreaks Near Me," builds upon the mission and proven capability of HealthMap, an online resource that collects, filters, maps and disseminates information about emerging infectious diseases, and provides a new, contextualized view of a user's specific location – pinpointing outbreaks that have been reported in the vicinity of the user and offering the opportunity to search for additional outbreak information by location or disease."*

**3. H1N1 UNLIKELY TO MUTATE INTO 'SUPERBUG': U.S. STUDY:** *"The new H1N1 virus appears to outcompete seasonal flu, making it less likely to mix with other circulating flu viruses into a "superbug" as some had feared, U.S. researchers said on Tuesday."*

**4. FAST-TRACK VERSION OF SWINE FLU SHOT URGED:** *"Simpler vaccine would allow high-risk groups to get it more quickly, medical journal says."*

**5. VA IS ON CALL TO ADMINISTER SWINE FLU VACCINATIONS:** *"Once an H1N1 vaccine is available, VA will deliver it to as many as 180,000 non-Defense employees government-wide, as part of a pandemic planning agreement reached prior to the current outbreak."*

**6. [UK] NHS PREDICTS 40,000 FEWER SWINE-FLU DEATHS THAN EXPECTED:** *"Revised predictions for the NHS puts the range from 3,000 deaths to a "worst-case scenario" of 19,000 fatalities — down from 65,000 estimated deaths reported in July."*

**7. COMPARATIVE ANALYSIS BETWEEN A LOW PATHOGENIC AND A HIGH PATHOGENIC INFLUENZA H5 HEMAGGLUTININ IN CELL ENTRY:** *"From this analysis we determined that at the level of viral entry, the only observed difference between the low and high pathogenic strains is their ability to be cleaved by host cellular proteases.."*

**8. EVALUATION OF VACCINES FOR H5N1 INFLUENZA VIRUS IN FERRETS REVEALS THE POTENTIAL FOR PROTECTIVE SINGLE-SHOT IMMUNIZATION:** *"Our data provide the first indication that in the event of a future influenza pandemic, effective mass vaccination may be achievable with a low-dose "single-shot" vaccine and provide not only increased survival but also significant reduction in disease severity.."*

## CB Daily Report

### Chem-Bio News

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#### **AAN COLLABORATES WITH CDC ON H1N1 VACCINE SAFETY MONITORING**

American Academy of Neurology Press Release  
August 31, 2009

"The Centers for Disease Control and Prevention (CDC) and the American Academy of Neurology (AAN) are requesting neurologists to report any possible new cases of Guillain-Barré syndrome (GBS) following 2009 H1N1 flu vaccination using the CDC and U. S. Food and Drug Administration Vaccine Adverse Event Reporting System (VAERS).

It is not anticipated that the 2009 H1N1 vaccine will have an increased risk of GBS. However, out of an abundance of caution, and given that GBS may be of greater concern with any pandemic vaccine because of the association of GBS with the 1976 swine flu vaccine, the CDC and AAN are asking neurologists to report any potential new cases of GBS after-vaccination as part of the CDC's national vaccine safety monitoring campaign."

The full article can be found at: <http://www.aan.com/press/index.cfm?fuseaction=release.view&release=757>

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#### **NEW IPHONE APP 'OUTBREAKS NEAR ME' LOCATES H1N1, INFECTIOUS DISEASES**

Infection Control Today Magazine  
September 01, 2009

"The application, "Outbreaks Near Me," builds upon the mission and proven capability of HealthMap, an online resource that collects, filters, maps and disseminates information about emerging infectious diseases, and provides a new, contextualized view of a user's specific location – pinpointing outbreaks that have been reported in the vicinity of the user and offering the opportunity to search for additional outbreak information by location or disease.

Additional functionality of Outbreaks Near Me is the ability to set alerts that will notify a user on their device or by e-mail when new outbreaks are reported in their proximity, or if a user enters a new area of activity.

"We hope individuals will find the new app to be a useful source of outbreak information – locally, nationally, and globally," says HealthMap co-founder John Brownstein, PhD, assistant professor in the Children's Hospital Informatics Program (CHIP). "As people are equipped with more knowledge and awareness of infectious disease, the hope is that they will become more involved and proactive about public health."

The new application also features an option for users to submit an outbreak report. This will enable individuals in cities and countries around the world to interact with the HealthMap team and participate in the public health surveillance process. Users may take photos – of situations and scenarios of, and/or leading to, disease – with their iPhone and submit them to the HealthMap system for review and eventual posting as an alert on the worldwide map."

The full article can be found at: <http://www.infectioncontroltoday.com/hotnews/iphone-application-infectious-diseases.html>

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## **H1N1 UNLIKELY TO MUTATE INTO 'SUPERBUG': U.S. STUDY**

By Julie Steenhuysen

Reuters

September 01, 2009

"The new H1N1 virus appears to outcompete seasonal flu, making it less likely to mix with other circulating flu viruses into a "superbug" as some had feared, U.S. researchers said on Tuesday.

The H1N1, or swine flu, virus also spreads more quickly and causes more severe disease in animal studies, the team said, but it shows no signs of mixing with either of the two seasonal flu viruses to form a new, so-called reassortant virus.

"The results suggest that 2009 H1N1 influenza may outcompete seasonal flu virus strains and may be more communicable as well," said Dr. Anthony Fauci, of the National Institute of Allergy and Infectious Diseases, part of the National Institutes of Health.

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The study, conducted in ferrets by a team at the University of Maryland, underscores the need for getting vaccinated with the new swine flu vaccine, Fauci said in a statement.

When the team infected ferrets with 2009 H1N1 virus plus either seasonal H1N1 virus or seasonal H3N2 virus, both viruses made them sick, but only the H1N1 virus spread to other ferrets, suggesting it will dominate ordinary flu."

The full article can be found at: <http://www.reuters.com/article/healthNews/idUSTRE58042220090901>

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## **FAST-TRACK VERSION OF SWINE FLU SHOT URGED**

By Joanna Smith

TheStar.com (CA)

September 01, 2009

“Simpler vaccine would allow high-risk groups to get it more quickly, medical journal says.”

“Canada should consider simplifying its swine flu vaccine so that it can immunize high-risk groups as quickly as it can, said an editorial in the Canadian Medical Association Journal yesterday.”

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“The journal's editorial urged the government to begin immunizing high-risk groups, such as health-care workers and pregnant women, with a standard version of the vaccine that does not contain an adjuvant.

That means people who really need the vaccine would get it as soon as it was approved, even if it means there is a risk of running out of vaccine for those who want it but do not need it as badly, instead of having to wait for the adjuvant version to be approved.”

The full article can be found at: <http://www.thestar.com/news/canada/article/689154>

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## **VA IS ON CALL TO ADMINISTER SWINE FLU VACCINATIONS**

By Alex M. Parker

GovernmentExecutive.com

September 03, 2009

“Once an H1N1 vaccine is available, VA will deliver it to as many as 180,000 non-Defense employees governmentwide, as part of a pandemic planning agreement reached prior to the current outbreak. The department delivers 2.5 million vaccines to veterans annually for the seasonal flu, and is well-equipped to deal with the increased workload, officials said.”

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“VA will use guidelines outlined by the Health and Human Services Department's Advisory Committee on Immunization Practices to determine which groups of employees will receive a high priority for the vaccine. Employees particularly susceptible to the disease or in positions critical to pandemic response and homeland security will receive the vaccination first, through VA. Those in lower priority groups will follow the protocol established by their agencies.”

The full article can be found at: [http://www.govexec.com/story\\_page.cfm?articleid=43531&dcn=todaysnews](http://www.govexec.com/story_page.cfm?articleid=43531&dcn=todaysnews)

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## **[UK] NHS PREDICTS 40,000 FEWER SWINE-FLU DEATHS THAN EXPECTED**

By David Rose

TimesOnline.co.uk

September 04, 2009

"More than 40,000 fewer deaths could occur during the swine flu pandemic than previously suggested, due to the mostly mild symptoms of the virus, the Government has said.

Revised predictions for the NHS puts the range from 3,000 deaths to a "worst-case scenario" of 19,000 fatalities — down from 65,000 estimated deaths reported in July.

Despite fears that cases could rise when schools go back after the summer holidays, Sir Liam Donaldson, the Chief Medical Officer, said that this had not been seen in Scotland, where the new term started three weeks ago.

A second peak of illness is now not considered likely to strike before mid-October, when a vaccine is due to be available, he added."

The full article can be found at: [http://www.timesonline.co.uk/tol/news/uk/health/Swine\\_flu/article6820841.ece](http://www.timesonline.co.uk/tol/news/uk/health/Swine_flu/article6820841.ece)

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## **COMPARATIVE ANALYSIS BETWEEN A LOW PATHOGENIC AND A HIGH PATHOGENIC INFLUENZA H5 HEMAGGLUTININ IN CELL ENTRY**

Biotech Week

September 2, 2009

"Viral entry of influenza is dependent upon the processing of the HA0 polypeptide precursor protein into HA1 and HA2 which is mediated by host cellular proteases. The sequence of the cleavage site which is recognized by host proteases has been linked with pathogenesis of various influenza viruses. Here we examined the effects of cleavage site sequences between a highly pathogenic H5N1 strain and a low pathogenic H5N2 strain to determine their effects on viral entry."

"From this analysis we determined that at the level of viral entry, the only observed difference between the low and high pathogenic strains is their ability to be cleaved by host cellular proteases.."

The full article can be found at: (E. Rumschlagbooms, et. al., "Comparative analysis between a low pathogenic and a high pathogenic influenza H5 hemagglutinin in cell entry". *Virology Journal*, 2009;6():76). Link not available.

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## **EVALUATION OF VACCINES FOR H5N1 INFLUENZA VIRUS IN FERRETS REVEALS THE POTENTIAL FOR PROTECTIVE SINGLE-SHOT IMMUNIZATION**

Vaccine Weekly

September 9, 2009

"Clinical trials of such vaccines indicate that two injections of preparations containing adjuvant will be required to induce protective immunity. However, this is a working assumption based on classical serological measures only. Examined here are the dose of viral hemagglutinin (HA) and the number of inoculations required for two different H5N1 vaccines to achieve protection in ferrets after lethal H5N1 challenge. Ferrets inoculated twice with 30 mu g of A/Vietnam/1194/2004 HA vaccine with AIPO4, or with doses as low as 3.8 mu g of HA with Iscomatrix (ISCOMATRIX, referred to as Iscomatrix herein, is a registered trademark of CSL Limited) adjuvant, were completely protected against death and disease after H5N1 challenge, and the protection lasted at least 15 months. Cross-clade protection was also observed with both vaccines. Significantly, complete protection against death could be achieved with only a single inoculation of H5N1 vaccine containing as little as 15 mu g of HA with AIPO4 or 3.8 mu g of HA with Iscomatrix adjuvant. Ferrets vaccinated with the single-injection Iscomatrix vaccines showed fewer clinical manifestations of infection than those given AIPO4 vaccines and remained highly active."

"Our data provide the first indication that in the event of a future influenza pandemic, effective mass vaccination may be achievable with a low-dose "single-shot" vaccine and provide not only increased survival but also significant reduction in disease severity.."

The full article can be found at: (D. Middleton, et. al., "Evaluation of Vaccines for H5N1 Influenza Virus in Ferrets Reveals the Potential for Protective Single-Shot Immunization". *Journal of Virology*, 2009;83(15):7770-7778). Link not available.

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