

**WEEKLY SYNTHESIS OF SURVEILLANCE INFORMATION, LITERATURE &  
GOVERNMENT UPDATES****(WEEK ENDING DECEMBER 11, 2009)****GOVERNMENT UPDATES****CENTRE FOR DISEASE CONTROL (CDC)****December 11 2009: CDC H1N1 Flu Surveillance Update.**<http://www.cdc.gov/h1n1flu/update.htm>**Weekly Flu View Map and Surveillance Report for Week Ending December 5, 2009.**<http://www.cdc.gov/flu/weekly/>

Map includes both seasonal flu and H1N1 flu activity. During week 48 (November 29-December 5, 2009), influenza activity decreased slightly in the US, however the proportion of outpatient visits for ILI was above the national baseline.

**CDC Updated Interim Recommendations for the Use of Antiviral Medications in the Treatment and Prevention of Influenza (December 7, 2009)**<http://www.cdc.gov/h1n1flu/recommendations.htm>

The objective of this document is to provide updated recommendations on the use of antiviral agents for treatment and prophylaxis of influenza during the 2009-2010 influenza season.

**Interim Guidance for Clinicians on the Prevention and Treatment of 2009 H1N1 Influenza Infections in Infants and Children (December 9, 2009)**[http://www.cdc.gov/h1n1flu/recommendations\\_pediatric\\_supplement.htm](http://www.cdc.gov/h1n1flu/recommendations_pediatric_supplement.htm)**Questions and Answers Regarding Respiratory Protection for Preventing 2009 H1N1 Influenza Among Healthcare Personnel (December 9, 2009)**[http://www.cdc.gov/h1n1flu/guidelines\\_infection\\_control\\_qa.htm](http://www.cdc.gov/h1n1flu/guidelines_infection_control_qa.htm)

CDC has released updated interim guidance on infection control measures to help prevent transmission of 2009 H1N1 influenza in healthcare facilities. As a supplement to that guidance document, these questions and answers provide additional information intended to assist healthcare facilities in optimizing implementation of recommended respiratory protection practices in the context of shortages of respiratory protection equipment.

**PUBLIC HEALTH AGENCY OF CANADA (PHAC)****FluWatch Week 47 (November 29-December 5, 2009)**[http://www.phac-aspc.gc.ca/fluwatch/09-10/w48\\_09/index-eng.php](http://www.phac-aspc.gc.ca/fluwatch/09-10/w48_09/index-eng.php)

Nationally, the activity levels reported this week continued to decrease compared to the previous week. All FluWatch influenza indicators declined for at least the third consecutive week. The

pH1N1 2009 strain accounted for nearly 100% of the positive influenza A subtyped specimens this week.

#### **Deaths Associated with Influenza A (H1N1) as of December 10, 2009**

<http://www.phac-aspc.gc.ca/alert-alerte/h1n1/surveillance-eng.php>

The Public Health Agency of Canada (PHAC) is committed to sharing information about the impact of the H1N1 flu virus in Canada. Every Tuesday and Thursday at 4 p.m., the Agency will issue national updates on H1N1-associated deaths. In addition, PHAC will issue special reports on any unusual cases or clusters.

#### **Weekly Distribution of the H1N1 Vaccine (December 6, 2009)**

<http://www.phac-aspc.gc.ca/alert-alerte/h1n1/vacc/dist-eng.php>

#### **Vaccine Surveillance Report- AEFI (December 9, 2009)**

<http://www.phac-aspc.gc.ca/alert-alerte/h1n1/vacc/addeve-eng.php>

#### **Guidance for Remote and Isolated (RI) Communities in the context of the pandemic (H1N1) 2009 outbreak (December 9, 2009)**

[http://www.phac-aspc.gc.ca/alert-alerte/h1n1/guidance\\_lignesdirectrices/ric-cei/index-eng.php](http://www.phac-aspc.gc.ca/alert-alerte/h1n1/guidance_lignesdirectrices/ric-cei/index-eng.php)

The Guidance document is intended to identify the unique challenges of remote and isolated communities in relation to public health planning, response and health service delivery during a pandemic. As a result of the challenges faced, guidelines and strategies are identified for the purposes of planning and responding to pandemic (H1N1) 2009.

### **ONTARIO**

#### **Ontario Influenza Bulletin 2009-2010, Surveillance Week 48 (Nov 29-Dec 11, 2009)**

[http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu\\_09/bulletins/flu\\_bul\\_01\\_20091211.pdf](http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_09/bulletins/flu_bul_01_20091211.pdf)

Overall, influenza activity in Ontario is lower compared to the previous week. All of the measures indicate that influenza activity is lower in week 48 to week 47. Starting in week 45 (Nov.8-14) influenza activity in Ontario has declined each week.

### **BC CENTER FOR DISEASE CONTROL (BC CDC):**

#### **BC CDC: H1N1 flu virus update (December 08, 2009)**

<http://www.bccdc.ca/resourcematerials/newsandalerts/healthalerts/2009HealthAlerts/H1N1FluVirusHumanSwineFlu.htm>

#### **Weekly BC Pandemic H1N1 Surveillance Update as of December 07, 2009:**

<http://www.bccdc.ca/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm>

### **WORLD HEALTH ORGANIZATION (WHO)**

#### **Global Situation Update 78, December 11, 2009**

[http://www.who.int/csr/don/2009\\_12\\_11a/en/index.html](http://www.who.int/csr/don/2009_12_11a/en/index.html)

In US and Canada, active influenza virus transmission persists but overall ILI activity continues to decline for the 5th and 3rd consecutive weeks, respectively. In the US, after 8 weeks of

increases, proportional mortality due to pneumonia and influenza mortality has begun to decrease but remains elevated above the epidemic threshold; weekly numbers of lab-confirmed hospitalizations and deaths have also recently begun to decline...

**Pandemic influenza checklist for hospitals published (December 11, 2009)**

<http://www.euro.who.int/Document/E93006.pdf>

**EUROPEAN CENTRE FOR DISEASE PREVENTION & CONTROL (ECDC)**

**December 11, 2009: ECDC Daily Update, Pandemic (H1N1) 2009**

[http://ecdc.europa.eu/en/healthtopics/Documents/091211\\_Influenza\\_AH1N1\\_Situation\\_Report\\_0900hrs.pdf](http://ecdc.europa.eu/en/healthtopics/Documents/091211_Influenza_AH1N1_Situation_Report_0900hrs.pdf)

**Clinical management and mitigation strategies during A (H1N1) 2009 influenza pandemic (Dec 08, 2009)**

[http://ecdc.europa.eu/en/activities/sciadvice/Lists/ECDC%20Reviews/ECDC\\_DispForm.aspx?List=512ff74f%2D77d4%2D4ad8%2Db6d6%2Dbf0f23083f30&ID=693&RootFolder=%2Fen%2Factivities%2Fsciadvice%2FLists%2FECDC%20Reviews](http://ecdc.europa.eu/en/activities/sciadvice/Lists/ECDC%20Reviews/ECDC_DispForm.aspx?List=512ff74f%2D77d4%2D4ad8%2Db6d6%2Dbf0f23083f30&ID=693&RootFolder=%2Fen%2Factivities%2Fsciadvice%2FLists%2FECDC%20Reviews)

**HEALTH/SURVEILLANCE BULLETINS:**

**CENTER FOR INFECTIOUS DISEASE RESEARCH AND POLICY (CIDRAP)**

**New Vaccine technologies on horizon but face roadblocks (December 11, 2009)**

<http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/dec1109vaccine.html>

New ways of producing influenza vaccine that would free the process from long-standing problems are on the horizon, federal officials said today, but they added that scientific and regulatory hurdles will slow the products' movement past licensure and into the market.

**UK reports death rate similar to US's (December 10, 2009)**

[http://news.yahoo.com/s/nm/20091210/hl\\_nm/us\\_flu\\_britain](http://news.yahoo.com/s/nm/20091210/hl_nm/us_flu_britain)

Pandemic H1N1 flu has killed fairly low numbers in the United Kingdom, British officials determined in a study published yesterday, but public health officials should stay vigilant and vaccination campaigns continue. The comprehensive analysis of data through Nov 8 revealed 26 H1N1 deaths in every 100,000 cases--a case-fatality rate (CFR) of 0.026%. Yesterday the CDC released figures indicating a US CFR of 0.021%.

**Aggressive steps may have worked for Japan (December 11, 2009)**

<http://www.bloomberg.com/apps/news?pid=20601202&sid=auxGTNXRwuAI>

Aggressive pandemic control steps such as hygiene measures, social etiquette, and quick testing and antiviral prescribing have helped Japan curb H1N1 better than other nations, according to a Bloomberg News story today that cites a Nov 13 WHO report. The report found a Japanese rate of 2 deaths per 100,000 H1N1 cases, considerably lower than other countries' published rates. Japanese doctors are advised to administer antivirals to anyone suspected of having flu, even if a rapid test is negative.

**CDC sharply raises H1N1 case estimates; kids hit hard (December 10, 2009)**

<http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/dec1009estimates-jw.html>

Another month's worth of data on H1N1 influenza has led federal officials to more than double their estimates of total cases, hospitalizations, and deaths and to assert that the impact on children and younger adults has been far greater than that of a typical flu season.

**Researchers estimate relatively low H1N1 fatality rate (December 8, 2009)**

<http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/dec0809cfr.html>

Researchers who analyzed H1N1 influenza hospitalization and death data from the early months of the pandemic say the fall-winter phase of the contagion may bring fewer deaths than an average flu season, barring any changes that would make the virus more virulent, but the deaths are likely to be in younger age-groups.

**Complications threaten kids who have sickle cell (December 7, 2009)**

<http://www.hopkinschildrens.org/H1N1-Risky-for-Kids-with-Sickle-Cell.aspx>

Children with sickle cell disease are more likely to develop serious complication from pandemic H1N1 influenza than for seasonal flu, researchers from Johns Hopkins reported today at the American Society of Hematology meeting in New Orleans. Their review of 118 children with sickle cell who were treated for flu since Sep 1993 found that those who had the pandemic strain were more likely, for example, to develop acute chest syndrome and require a ventilator and blood transfusion.

## **JOURNALS SCANNED:**

- American Journal of Public Health
- British Medical Journal
- Canadian Medical Association Journal
- Clinical Infectious Diseases
- Emerging Infectious Diseases
- Eurosurveillance
- JAMA
- Journal of Infectious Diseases
- Journal of Virology (*added this week*)
- Lancet
- MMWR
- Nature
- New England Journal of Medicine
- PLoS One
- PLoS Currents
- PLoS Medicine (*added this week*)
- Science

*\*\*\*\*Please note that the hypertext links appended to the citations may not be available in your institution – contact your library for details on access to the journals.*

### **AMERICAN JOURNAL OF PUBLIC HEALTH**

-Nothing new on H1N1 this week

## **BRITISH MEDICAL JOURNAL**

1) Fall in swine flu cases may not signal an end of the epidemic, warns Professor Donaldson (*Ona Mashta December 7, 2009*);

[http://www.bmj.com/cgi/content/full/339/dec07\\_1/b5329?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm\\_content=Google+Reader](http://www.bmj.com/cgi/content/full/339/dec07_1/b5329?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm_content=Google+Reader)

### **Abstract:**

England's chief medical officer has said it is too early to know whether the "striking reduction" in numbers of new swine flu cases would continue in weeks ahead, and warned there may be a rise of infections among older people after Christmas.

2) Neuraminidase inhibitors for preventing and treating influenza in healthy adults: systematic review and meta-analysis (*Tom Jefferson, Mark Jones, Peter Doshi, Chris Del Mar, December 8, 2009*)

[http://www.bmj.com/cgi/content/full/339/dec07\\_2/b5106?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm\\_content=Google+Reader](http://www.bmj.com/cgi/content/full/339/dec07_2/b5106?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm_content=Google+Reader)

### **Abstract:**

Neuraminidase inhibitors have modest effectiveness against the symptoms of influenza in otherwise healthy adults. The drugs are effective postexposure against laboratory confirmed influenza, but this is a small component of influenza-like illness, so for this outcome neuraminidase inhibitors are not effective. Neuraminidase inhibitors might be regarded as optional for reducing the symptoms of seasonal influenza. Paucity of good data has undermined previous findings for oseltamivir's prevention of complications from influenza. Independent randomised trials to resolve these uncertainties are needed.

3) Complications: tracking down the data on oseltamivir (*Deborah Cohen, December 8, 2009*);

[http://www.bmj.com/cgi/content/full/339/dec08\\_3/b5387?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm\\_content=Google+Reader](http://www.bmj.com/cgi/content/full/339/dec08_3/b5387?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm_content=Google+Reader)

### **Abstract:**

A Cochrane group's attempt to reproduce an analysis underpinning the use of oseltamivir in pandemic influenza hit a brick wall. Deborah Cohen retraces its steps

4) Neuraminidase inhibitors—the story behind the Cochrane review (*Peter Doshi, December 8, 2009*);

[http://www.bmj.com/cgi/content/full/339/dec07\\_2/b5164?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm\\_content=Google+Reader](http://www.bmj.com/cgi/content/full/339/dec07_2/b5164?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm_content=Google+Reader)

### **Abstract:**

Although billions have been spent on oseltamivir in the face of pandemic influenza, the team updating the Cochrane review of neuraminidase inhibitors in healthy adults found that the public evidence base for this global public health drug was fragmented and inconsistent.

What can we learn from observational studies of oseltamivir to treat influenza in healthy adults? (*Nick Freemantle, Mel Calvert, December 8, 2009*);

[http://www.bmj.com/cgi/content/full/339/dec07\\_2/b5248?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm\\_content=Google+Reader](http://www.bmj.com/cgi/content/full/339/dec07_2/b5248?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm_content=Google+Reader)

Abstract:

Post-marketing studies can provide important information about safety and efficacy in real practice. However, the authors found studies of oseltamivir identified by Roche were of limited value.

5) Why don't we have all the evidence on oseltamivir? (*Editorial, December 8, 2009*);

[http://www.bmj.com/cgi/content/full/339/dec08\\_3/b5351?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm\\_content=Google+Reader](http://www.bmj.com/cgi/content/full/339/dec08_3/b5351?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm_content=Google+Reader)

Abstract:

This week the *BMJ* publishes an updated Cochrane review on neuraminidase inhibitors in adults with influenza. The review and a linked investigation undertaken jointly by the *BMJ* and Channel 4 News cast doubt not only on the effectiveness and safety of Oseltamivir (Tamiflu) but on the system by which drugs are evaluated, regulated, and promoted.

6) Roche replies to the authors of the Cochrane Review on Oseltamivir (*Letter from Roche, December 8, 2009*);

[http://www.bmj.com/cgi/content/full/339/dec08\\_3/b5364?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm\\_content=Google+Reader](http://www.bmj.com/cgi/content/full/339/dec08_3/b5364?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm_content=Google+Reader)

Abstract:

A key question that was raised concerned several unpublished final study reports for certain randomised clinical studies.

7) Point-by-point response from Roche to *BMJ* questions (*Letter, December 8, 2009*);

[http://www.bmj.com/cgi/content/full/339/dec08\\_3/b5374?utm\\_source=feedburner&utm\\_medium=feed&utm\\_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm\\_content=Google+Reader](http://www.bmj.com/cgi/content/full/339/dec08_3/b5374?utm_source=feedburner&utm_medium=feed&utm_campaign=Feed%3A+bmj%2Fpandemicflu+%28Pandemic+flu+updates+from+BMJ+Group%29&utm_content=Google+Reader)

Abstract:

James Smith responds on behalf of Roche to some of the issues raised with regard to the Cochrane Review on oseltamivir published in the *BMJ*.

**CANADIAN MEDICAL ASSOCIATION JOURNAL**

1) H1N1 and remote locations (*Subhash C. Arya and Nirmala Agarwal, December 8, 2009*);

<http://www.cmaj.ca/cgi/reprint/181/12/928-a>

Abstract:

The scenario in remote and underserved locations in Canada regarding specific diagnosis and antiviral therapeutic response seems to mimic the picture in developing countries.

**CLINICAL INFECTIOUS DISEASES**

-Nothing new on H1N1 this week.

**EMERGING INFECTIOUS DISEASES**

1) Severe pneumonia associated with pandemic (H1N1) 2009 outbreak, San Luis Potosí, Mexico (*Gómez-Gómez A, Magaña-Aquino M, García-Sepúlveda CA, Ochoa-Pérez UR, Falcón-Escobedo R, Comas-García A, et al., January 2010*)

<http://www.cdc.gov/eid/content/16/1/pdfs/09-0941.pdf>

**Abstract:**

Patients admitted to a general hospital in San Luis Potosí, Mexico, from April 10 through May 11, 2009, suspected to have influenza virus–associated pneumonia were evaluated. We identified 50 patients with suspected influenza pneumonia; the presence of influenza virus was confirmed in 18: 11 with pandemic (H1N1) 2009 virus, 5 with unsubtypeable influenza A virus, 1 with seasonal influenza A (H3N2) virus, and 1 in whom assay results for seasonal and pandemic (H1N1) 2009 viruses were positive. Eighteen patients were treated in the intensive care unit, and 10 died. During the pandemic (H1N1) 2009 outbreak, severe pneumonia developed in young adults who had no identifiable risk factors; early diagnosis and treatment of influenza virus infections may have a determinant role in outcome.

2) Fatal case of pneumonia associated with pandemic (H1N1) 2009 in HIV-positive patient (*Klein NC, Chak A, Chengot M, Johnson DH, Cunha BA., January 2010*)

<http://www.cdc.gov/eid/content/16/1/pdfs/09-0930.pdf>

**Abstract:**

We report pneumonia associated with pandemic (H1N1) 2009, which resulted in respiratory and renal failure and death, in a 39-year-old HIV-positive woman. She had type 1 diabetes and a diagnosis of AIDS 7 years ago and had received highly active antiretroviral therapy. She also had an ill child at home with an influenza-like illness.

3) Oseltamivir- and amantadine-resistant influenza virus A (H1N1) (*Cheng PKC, To APC, Leung TWC, Leung PCK, Lee CWC, Lim WWL., January 2010*);

<http://www.cdc.gov/eid/content/16/1/pdfs/09-1304.pdf>

**Abstract:**

Along with pandemic (H1N1) 2009, seasonal influenza viruses continue to circulate in Hong Kong. An alarming proportion of the circulating seasonal influenza virus A (H1N1) became resistant to both oseltamivir and amantadine in a short span of 1 month.

**EUROSURVEILLANCE**

- Nothing new on H1N1 this week.

**JAMA**

-Nothing new on H1N1 this week.

**JOURNAL OF INFECTIOUS DISEASES**

1) Evidence of Bias in Studies of Influenza Vaccine Effectiveness in Elderly Patients (Roger Baxter, Janelle Lee, and Bruce Fireman, December 8, 2009);

<http://www.journals.uchicago.edu/doi/pdf/10.1086/649568>

**Abstract:**

Although studies have shown influenza vaccines to be effective in preventing death in the elderly population, these findings may be the result of selection bias. We examined the relationship between vaccination, age, underlying morbidity, and probability of death in the upcoming year. Vaccination coverage varied in a curvilinear fashion with age, morbidity, and risk of death. Forgoing vaccination predicted death in those who had received vaccinations in the previous 5 years, but it predicted survival in patients who had never before received a vaccination. We conclude that bias is inherent in studies of influenza vaccination and death among elderly patients.

## **JOURNAL OF VIROLOGY**

1) Transmission of Pandemic H1N1 Influenza Virus and Impact of Prior Exposure to Seasonal Strains or Interferon Treatment (*John Steel, et al., January 2010*);  
<http://jvi.asm.org/cgi/content/abstract/84/1/21>

### **Abstract:**

Despite the fact that they are of the same antigenic subtype as seasonal influenza viruses circulating in humans since 1977, these viruses continue to spread and have caused the first influenza pandemic since 1968. Here we show that a pandemic H1N1 strain replicates in and transmits among guinea pigs with similar efficiency to that of a seasonal H3N2 influenza virus. This transmission was, however, partially disrupted when guinea pigs had preexisting immunity to recent human isolates of either the H1N1 or H3N2 subtype and was fully blocked through daily intranasal administration of interferon to either inoculated or exposed animals. Our results suggest that partial immunity resulting from prior exposure to conventional human strains may blunt the impact of pandemic H1N1 viruses in the human population. In addition, the use of interferon as an antiviral prophylaxis may be an effective way to limit spread in at-risk populations.

2) Generation of Live Attenuated Novel Influenza Virus A/California/7/09 (H1N1) Vaccines with High Yield in Embryonated Chicken Eggs (*Zhongying Chen, et al., January 2010*);  
<http://jvi.asm.org/cgi/content/abstract/84/1/44>

### **Abstract:**

Several live attenuated influenza virus A/California/7/09 (H1N1) (CA09) candidate vaccine variants that possess the hemagglutinin (HA) and neuraminidase (NA) gene segments from the CA09 virus and six internal protein gene segments from the cold-adapted influenza virus A/Ann Arbor/6/60 (H2N2) virus were generated by reverse genetics. The reassortant viruses replicated relatively poorly in embryonated chicken eggs. To improve virus growth in eggs, reassortants expressing the HA and NA of CA09 were passaged in MDCK cells and variants exhibiting large-plaque morphology were isolated.

3) Nanodisc-Incorporated Hemagglutinin Provides Protective Immunity against Influenza Virus (*Infection / Palash Bhattacharya, et al., January 2010*);  
<http://jvi.asm.org/cgi/content/abstract/84/1/361>

### **Abstract:**

Although egg-based inactivated viral vaccines are available, their effectiveness depends on the correct prediction of the circulating viral strains and is limited by the time constraint of the manufacturing process. Recombinant subunit vaccines are easier to manufacture with a relatively short lead time but are limited in their efficacy partly because the purified recombinant membrane proteins in the soluble form most likely do not retain their native membrane-bound structure. Nanodisc (ND) particles are soluble, stable, and reproducibly prepared discoid shaped nanoscale structures that contain a discrete lipid bilayer bound by two amphipathic scaffold proteins. Because ND particles permit the functional reconstitution of membrane/envelope proteins, we incorporated recombinant hemagglutinin (HA) from influenza virus strain A/New Caledonia/20/99 (H1N1) into NDs and investigated their potential to elicit an immune response to HA and confer immunity to influenza virus challenge relative to the commercial vaccines Fluzone and FluMist.

## **LANCET**

-Nothing new on H1N1 this week.

## **MMWR**

-Nothing new on H1N1 this week.

## **NATURE**

-Nothing new on H1N1 this week.

## **NEW ENGLAND JOURNAL OF MEDICINE**

1)When to Consider the Use of Antibiotics in the Treatment of 2009 H1N1 Influenza–Associated Pneumonia (*letter*., December 9, 2009)

<http://content.nejm.org/cgi/content/short/361/24/e1112?rss=1&query=current>

### **Abstract:**

We are now facing a pandemic caused by an epidemiologically distinct, novel virus, the 2009 pandemic influenza A (H1N1) virus (swine flu), against which few persons born since 1970 have antibodies. The severity of illness in the individual varies, and our understanding of the role of bacterial infection in novel 2009 H1N1 infection is still evolving. A current summary of bacterial isolates from 53 fatal pediatric cases of novel H1N1 with adequate sampling of normally sterile sites showed that 17 (32%) had bacterial pathogens of which 8 were *Staphylococcus aureus*, and of these, 6 were methicillin-resistant *S. aureus* (MRSA) ...

2) Clinical Features of the Initial Cases of 2009 Pandemic Influenza A (H1N1) Virus Infection in China (*Bin Cao et al.*, December 9, 2009);

<http://content.nejm.org/cgi/content/short/NEJMoa0906612v1?rss=1&query=current>

### **Abstract:**

Surveillance of the 2009 H1N1 virus in China shows that the majority of those infected have a mild illness. The typical period during which the virus can be detected with the use of real-time RT-PCR is 6 days (whether or not fever is present). The duration of infection may be shortened if oseltamivir is administered.

3) A Community Cluster of Oseltamivir-Resistant Cases of 2009 H1N1 Influenza (*Letter*, December 9, 2009); <http://content.nejm.org/cgi/content/short/NEJMc0910448v1?rss=1&query=current>

### **Abstract:**

Oseltamivir-resistant infection with the 2009 pandemic influenza A (H1N1) virus has so far been described only rarely and is conferred by the H275Y substitution in the neuraminidase enzyme.<sup>1</sup> Only 3 of the 32 patients with oseltamivir-resistant infection reported on as of this writing were not receiving oseltamivir when the resistant viruses were detected, and ongoing community transmission has not yet been shown.<sup>1</sup> However, the emergence of oseltamivir-resistant 2009 H1N1 influenza remains a grave concern, since widespread oseltamivir resistance has been observed in seasonal H1N1.

## **PLOS ONE**

-Nothing new on H1N1 this week.

## **PLOS CURRENTS**

1)Modeling the critical care demand and antibiotics resources needed during the Fall 2009 wave of influenza A(H1N1) pandemic (*Duygu Balcan, Vittoria Colizza, Andrew Singer.*, December 9, 2009);

<http://knol.google.com/k/modeling-the-critical-care-demand-and-antibiotics-resources-needed-during-the?collectionId=28qm4w0q65e4w.1&position=1#>

**Abstract:**

While the H1N1 pandemic is reaching high levels of influenza activity in the Northern Hemisphere, the attention focuses on the ability of national health systems to respond to the expected massive influx of additional patients. Given the limited capacity of health care providers and hospitals and the limited supplies of antibiotics, it is important to predict the potential demand on critical care to assist planning for the management of resources and plan for additional stockpiling. We develop a disease model that considers the development of influenza-associated complications and incorporate it into a global epidemic model to assess the expected surge in critical care demands due to viral and bacterial pneumonia. Based on the most recent estimates of complication rates, we predict the expected peak number of intensive care unit beds and the stockpile of antibiotic courses needed for the current pandemic wave. The effects of dynamic vaccination campaigns, and of variations of the relative proportion of bacterial co-infection in complications and different length of staying in the intensive care unit are explored.

**PLOS MEDICINE** (*added this week*)

1)The severity of pandemic H1N1 influenza in the United States, from April to July 2009 : A Bayesian analysis (*Anne M. Bresanis et al, December 8, 2009*);  
<http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1000207>

**Abstract:**

Marc Lipsitch and colleagues use complementary data from two US cities, Milwaukee and New York City, to assess the severity of pandemic (H1N1) 2009 influenza in the United States.

**SCIENCE**

-Nothing new on H1N1 this week.