

**WEEKLY SYNTHESIS OF SURVEILLANCE INFORMATION, LITERATURE &  
GOVERNMENT UPDATES**
**(WEEK ENDING AUGUST 21, 2009)**
**HOSPITALIZATION & DEATH COUNTS:**

The WHO will no longer issue the global tables showing the numbers of confirmed cases for all countries. Thus, the reported cases presented in this table will severely underestimate the true incidence in the country and will not be comparable to countries still recommending laboratory tests of all suspected influenza cases. The following table provides global updates on H1N1-associated deaths. Please see hyperlinks in table for most up to date counts.

COUNTRIES/PROVINCES	DEATHS	HOSPITALIZATIONS*
<b>CANADA (<a href="#">PHAC</a>)</b>	<b>71</b>	<b>1422</b>
- BC	4	39
- AB	7	123
- SK	4	24
- MB	7	217
- <b>ON**</b>	<b>22</b>	<b>346</b>
- QC	25	590
- NB	0	2
- NS	1	17
- PEI	0	1
- NL	0	3
- Yukon	0	0
- NWT	0	4
- Nunavut	1	56
<b>U.S. (<a href="#">CDC</a>)</b>	<b>522</b>	<b>7983</b>
<b>E.U. and EFTA (<a href="#">ECDC</a>)</b>	79	
<b>Mexico</b>	164	
<b>Chile</b>	128	
<b>Argentina</b>	404	
<b>Australia</b>	131	4082
<b>New Zealand</b>	15	
<b>TOTAL (<a href="#">ECDC</a>)</b>	<b>2,430</b>	

*Note: PHAC numbers updated last at 11:00pm (EST) on August 18; CDC numbers updated last at 10:00 am on August 20; ECDC numbers updated last at 5:00 pm (CEST) on August 21 2009.*

*\* Source: PHAC Flu Watch, week ending August 15 2009.*

*\*\* Source: Ontario Flu Bulletin as of August 19, 2009.*

## **DEATHS AMONG NOVEL H1N1 INFLUENZA A VIRUS, APRIL 13-AUGUST 19, 2009**

- 22 deaths have been reported, representing a population-based mortality rate of 0.17 deaths per 100,000 population.
- Almost all of these fatalities were hospitalized prior to death (86%).
- Age of fatal cases ranged from 6 to 81 years of age; median is 58 years and the average age is 55 years.
- Among confirmed cases that have died, 19 or 86% had underlying chronic medical conditions compared to 65% of hospitalized cases.

## **HOSPITALIZATIONS AMONG NOVEL H1N1 INFLUENZA A VIRUS CASES**

As of August 19, 2009 in Ontario:

- 352 confirmed cases have been hospitalized to date, also representing a population-based hospitalization rate of 2.7 hospital admissions per 100,000 population in Ontario.
- Of these, 315 cases have been discharged.
- The average length of stay range from less than 1 day to 80 days.
- Among cases that are currently or have previously been hospitalized, a number of complex medical conditions have been reported (for example, COPD, kidney disease, heart disease diabetes, etc).
- 89% of cases that were discharged had a length of stay of at least 2 days
- Of the 37 cases are currently hospitalized, a total of 19 were placed on a ventilator and/or were admitted to ICU.

HOSPITALIZATION STATUS	VENTILATOR AND/OR ICU	NOT IN ICU AND NOT ON VENTILATOR	TOTAL
Number of Currently Hospitalized	19	18	37
Number of Hospitalized and Discharged	50	264	314
Total hospitalized to date	69	282	351*

Source: MOHLTC Ontario Influenza Bulletin, iPHIS data as of 8:30 am, August 19, 2009.

\* Excludes case with a length of stay of less than 24 hours

HOSPITALIZATION STATUS	HOSPITALIZED CASES*	NON-HOSPITALIZED CASES	TOTAL CASES
Less than 20 years	167	2228	<b>2395</b>
Greater than or equal to 20 years	184	1447	<b>1631</b>
<b>Total</b>	<b>351</b>	<b>3657</b>	<b>4026</b>

Source: MOHLTC, iPHIS data as of 8:30 am, August 19, 2009. Age was unknown for 11 cases

## GOVERNMENT UPDATES

### **CENTRE FOR DISEASE CONTROL (CDC)**

#### **August 20, 2009: CDC H1N1 Flu Surveillance Update.**

<http://www.cdc.gov/h1n1flu/update.htm>

#### **Weekly Flu View Map and Surveillance Report for Week Ending August 15, 2009.**

<http://www.cdc.gov/flu/weekly/>

Map includes both seasonal flu and H1N1 flu activity. During week 32, (August 9-15, 2009), influenza activity decreased in the US, however there are still higher levels of ILI than is normal for this time of year. Approximately 98% of all influenza A subtyped viruses being reported to CDC this week are influenza A H1N1 virus. The proportion of deaths attributed to pneumonia and influenza (P&I) was below the epidemic threshold. Four influenza-associated pediatric deaths were reported and both were associated with novel influenza A (H1N1) virus infection

#### **CDC Guidance for Businesses and Employers to Plan and Respond to the 2009-2010 Influenza Season (CDC, August 19, 2009).**

<http://www.cdc.gov/h1n1flu/business/guidance/>

The guidance includes additional strategies to use if flu conditions become more severe and some new recommendations regarding when a worker who is ill with influenza may return to work. The guidance may change as additional information about the severity of the 2009-2010 influenza season and the impact of 2009 H1N1 influenza become known.

### **PUBLIC HEALTH AGENCY OF CANADA (PHAC)**

#### **FluWatch Week 32 (August 9-15, 2009)**

The overall influenza activity decreased this week; the national ILI consultation rate (15 consultations per 1,000) is lower compared to the last week. The proportion of influenza positive tests decreased this week (4.2%), the overall number of influenza outbreaks lower this week.

[http://www.phac-aspc.gc.ca/fluwatch/08-09/w32\\_09/index-eng.php](http://www.phac-aspc.gc.ca/fluwatch/08-09/w32_09/index-eng.php)

#### **Surveillance Protocol for laboratory-confirmed influenza in adults (Public Health Agency of Canada, August 20, 2009)**

<http://www.phac-aspc.gc.ca/nois-sinp/projects/lab-eng.php>

CNISP has been asked to extend their seasonal laboratory-confirmed influenza surveillance to a yearly reporting of both confirmed cases of flu and hospitalizations with possible influenza-associated admitting diagnosis. A real-time hospital based surveillance system that will capture influenza-associated hospitalizations and deaths is useful for monitoring trends and characterizing severe influenza related disease.

#### **Public Health Guidance for Post Secondary and Boarding Schools regarding the Prevention and Management of Influenza-like-illness (ILI), Including the Pandemic (H1N1) 2009 influenza Virus (Public Health Agency of Canada, August 20, 2009)**

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

Post secondary and boarding schools should develop communication programs that meet the needs of parents/guardians, students, faculty and staff. Information that can be included in these education programs is outlined.

**Public Health Guidance for Child Care Programs and Schools (k-12 grade) regarding the Prevention and Management of ILI, including Pandemic H1N1 2009 Influenza Virus (PHAC, August 19, 2009)**

<http://www.phac-aspc.gc.ca/alert-alerte/h1n1/interim-provisaires0819-eng.php>

This document updates the May 3 "Interim Recommendations Regarding Schools and Daycare Centres" guidance. It should be noted that this guidance has been developed based on the Canadian situation and thus may differ somewhat from other guidance documents developed by other countries.

**Interim Guidance: Infection Prevention and Control Measures for Health Care Workers in Long-term Care Facilities (Public Health Agency of Canada, August 20, 2009)**

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

This fact sheet has been developed to provide interim guidance for health care workers (HCWs) in long-term care (LTC) facilities for the infection prevention and control management of residents with Influenza-like Illness (ILI) suspected or confirmed to be due to Pandemic (H1N1) 2009 (H1N1 2009).

**August 20, 2009: Deaths Associated with H1N1 Flu Virus in Canada**

<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.

**WORLD HEALTH ORGANIZATION (WHO)**

**August 21, 2009:** WHO offices issue pandemic flu surveillance updates. The World Health Organization (WHO) recently posted surveillance and status updates for regions where the pandemic H1N1 is just gaining a foothold, including the Mideast, Africa, and parts of Asia and the Pacific, which showed Southeast Asia as the hardest hit of those areas. Countries reporting their first pandemic H1N1 confirmed case(s) include Ghana, Zambia, and Tuvalu.

[http://www.who.int/csr/don/2009\\_08\\_21/en/index.html](http://www.who.int/csr/don/2009_08_21/en/index.html)

**August 21, 2009:** WHO says cases declining in temperate parts of southern hemisphere. H1N1 flu cases in temperate areas of the southern hemisphere are declining, except South Africa, the WHO reported in a revised situation update today. But cases are increasing in tropical parts of Asia that are entering their monsoon season, such as India. The WHO expects the new strain to dominate the early part of the northern hemisphere's flu season. Twelve oseltamivir-resistant cases have been reported.

**Recommended use of antivirals (August 21, 2009)**

[http://www.who.int/csr/disease/swineflu/notes/h1n1\\_use\\_antivirals\\_20090820/en/index.html](http://www.who.int/csr/disease/swineflu/notes/h1n1_use_antivirals_20090820/en/index.html)

The WHO guidelines for the use of antivirals in the management of patients infected with the H1N1 pandemic virus.

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

**August 21, 2009: ECDC situation report (daily surveillance report).**

[http://ecdc.europa.eu/en/healthtopics/Documents/090821\\_Influenza\\_AH1N1\\_Situation\\_Report\\_1700hrs.pdf](http://ecdc.europa.eu/en/healthtopics/Documents/090821_Influenza_AH1N1_Situation_Report_1700hrs.pdf)

## **HEALTH/SURVEILLANCE BULLETINS:**

### Countries reporting first case(s) of pandemic H1N1

**August 20, 2009- Zimbabwe:** the country's first novel H1N1 cases, in five private-school children who got sick in early August. Doctors at Zimbabwe's state hospitals are on strike over wage and allowance issues, but the health minister said the medical system is coping.

**August 20, 2009- Belarus:** the country confirmed its first novel flu case yesterday, in a Chinese man who had recently returned from visiting China.

**August 18, 2009- Mozambique:** the country's first novel flu case, in a 46-year-old woman who had recently traveled to South Africa.

### Southern Hemisphere

#### **Australia**

**As of August 21, 2009,** total confirmed cases are 33, 179; Total deaths associated with pandemic H1N1 influenza is 131. Currently, there are 456 hospitalized cases of pandemic H1N1 and 98 of these are in ICUs. The total number of hospitalizations in Australia since H1N1 Influenza was identified is 4082.

**Australia Influenza Surveillance Summary Report, No. 14, 2009, reporting period: August 8-14 2009.**

<http://www.healthemergency.gov.au/internet/healthemergency/publishing.nsf/Content/ozflucurrent.htm>

Overall, the current national influenza activity appears to be steady. Most jurisdictions have reported that pandemic H1N1 2009 activity has peaked or has plateaued. Pandemic H1N1 activity varies across geographical areas. Most jurisdictions are reporting that ILI presentations to ED are decreasing. Absenteeism rates have decreased in the last week and are below levels seen at the same time in 2007.

The number of people with confirmed H1N1 requiring hospitalization continues to increase. As of August 14, 447 people are hospitalized and 104 are in ICU, with a total of 3,524 people who are hospitalized. Highest hospitalization rate occurred in young children less than 5 years of age (24.5 per 100, 000 population). The number of deaths associated with H1N1 continues to increase. As of August 14, 106 people have died, and of these deaths four were pregnant women and 14 (13.2%) were Indigenous.

Indigenous Australians are approximately 5 times more likely than non-Indigenous Australians to be hospitalized for Pandemic (H1N1) 2009, representing 12.8% of all hospitalizations. Most cases had underlying medical conditions, including cancer, diabetes mellitus and morbid obesity.

With a 20% clinical attack rate and no intervention; it has been projected by the end of winter 1 in 5 Australians (4.3 million) could become infected with the pandemic virus, leading to 40-80, 000 hospitalizations, and 6,000 deaths. NOTE: Currently the number of hospitalizations and deaths are tracking below these estimations, suggesting that efforts to protect the vulnerable are effective.

### **Australia, New South Wales: Weekly Summary (as of August 19, 2009)**

[http://www.emergency.health.nsw.gov.au/swineflu/resources/pdf/case\\_statistics\\_200809.pdf](http://www.emergency.health.nsw.gov.au/swineflu/resources/pdf/case_statistics_200809.pdf)

### **New Zealand**

**August 21, 2009:** New Zealand now has 3090 laboratory-confirmed pH1N1 cases. The level of illness would be much higher than the number of laboratory-confirmed cases reported daily. Testing is now done only in the management of severe cases. The number of deaths associated with pandemic H1N1 is 15.

<http://www.moh.govt.nz/moh.nsf/indexmh/influenza-a-h1n1-update-141-210809>

### **New Zealand: Weekly Summary (August 10 - 16, 2009)**

There has been a slight increase in consultations for influenza-like illness through sentinel surveillance in week 33 (August 10-16, 2009). However, the weekly ILI consultation rate is still higher than previous years for the same week. So far, the highest ILI consultation rates have been reported among children and teenagers aged 0 to 19 years.

[http://www.surv.esr.cri.nz/PDF\\_surveillance/Virology/FluWeekRpt/2009/FluWeekRpt200933.pdf](http://www.surv.esr.cri.nz/PDF_surveillance/Virology/FluWeekRpt/2009/FluWeekRpt200933.pdf)

### **South America & the Americas**

**Argentina:** Since epi reporting of week 27, there has been a downward trend in the number of cases reported. At the peak of influenza A detection, pandemic H1N1 represented 93.3% of all respiratory viruses circulating in patients over 5 years old. In children under 5 years, RSV is responsible for 72/2% of cases. There are 404 confirmed pandemic H1N1 associated deaths in Argentina. *Source: PHAC, FluWatch Week 32.*

**Chile:** There has been a decline in the incidence of pH1N1 and a decrease in ILI cases throughout the country. The highest rate of confirmed cases is observed in those 5-14 years old, followed by similar rates in the less than 5 year and 15-59 year old age groups. The rate of severe infection has been declining since week 27, and is highest in those under 1 year old. The proportion of pH1N1 has decline compared to other respiratory viruses. However, there has been an increase in the RSV and parainfluenza detections. *Source: PHAC, FluWatch Week 32.*

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

**August 21, 2009:** Chile finds novel flu virus in turkeys. Chile's agriculture ministry yesterday reported an outbreak of novel H1N1 flu at two turkey farms west of Santiago, the first such report in birds. The farms were quarantined on Aug 13 after a change in egg production prompted testing.

[http://thestar.com.my/news/story.asp?file=/2009/8/21/worldupdates/2009-08-21T102730Z\\_01\\_NOOTR\\_RTRMDNC\\_0\\_-418790-3&sec=Worldupdates](http://thestar.com.my/news/story.asp?file=/2009/8/21/worldupdates/2009-08-21T102730Z_01_NOOTR_RTRMDNC_0_-418790-3&sec=Worldupdates)

**August 21, 2009:** WHO official predicts 'explosion' of H1N1 cases this fall. A World Health Organization (WHO) official speaking in Beijing today said he expects to see an "explosion in case numbers" this fall when novel H1N1 virus activity picks up again in the northern hemisphere. Shin Young-soo, the WHO's Western Pacific director, said cases in many countries could double every 3 to 4 days. But a US CDC official said that while vigilance is needed, fall outbreaks might resemble only a bad flu season.

<http://www.miamiherald.com/news/world/AP/story/1196138.html>

**August 20, 2009:** Flu fatality study finds half of patients had underlying conditions. A review by French researchers of 574 novel flu deaths reported globally through mid July found that about half involved people with underlying conditions, most notably pregnancy and obesity. Reporting in the latest issue of *Eurosurveillance*, they said more research is needed to explore if other conditions contribute to higher death rates in obese patients. Though older people seem to have some immunity, the group found that elderly patients who had novel flu infections were more likely to die.

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19309>

**August 20, 2009:** Study says flu vaccination should target kids and their parents. A modeling study to assess flu vaccine allocation strategies found that immunizing school children and adults their parents' age, 30 to 39, might be optimal. Their rationale is that school children are responsible for most flu transmission and that their parents spread the virus to the wider community. The authors wrote that CDC recommendations for seasonal and novel flu vaccination don't fully address those transmission factors.

<http://www.sciencemag.org/cgi/content/abstract/1175570/?date=082109>

**August 19, 2009:** Australian government expects first H1N1 vaccine does next week. Pregnant women, health workers, and chronically ill people will be high priority to receive it. It is expect that Immunizations begin September 7<sup>th</sup> 2009.

<http://www.news.com.au/adelaidenow/story/0,22606,25954473-2682,00.html>

### **JOURNALS SCANNED:**

- American Journal of Public Health
- British Medical Journal
- Clinical Infectious Diseases
- Emerging Infectious Diseases
- Eurosurveillance
- Influenza and Other Respiratory Viruses (added this week)
- Journal of Infectious Diseases
- Lancet
- MMWR
- Nature
- New England Journal of Medicine
- PLoS One
- Science

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

- Nothing new on H1N1 this week

### **BRITISH MEDICAL JOURNAL**

-Nothing new on H1N1 this week

### **CLINICAL INFECTIOUS DISEASES**

1) Ruling Out Novel H1N1 Influenza Virus Infection with Direct Fluorescent Antigen Testing (*Nira R. Pollock et al, August 14, 2009*)

<http://www.journals.uchicago.edu/doi/full/10.1086/644502>

Evaluation of the ability of direct fluorescent antigen (DFA) influenza tests to identify novel H1N1 influenza virus. DFA results were compared with polymerase chain reaction results. The negative predictive value of DFA testing was at least 96%. Therefore, when performed on specimens of adequate quality, DFA tests can effectively rule out infection due to novel H1N1 virus.

## **EMERGING INFECTIOUS DISEASES**

- Nothing new on H1N1 this week.

## **EUROSURVEILLANCE**

1) The importance of school and social activities in the transmission of influenza A(H1N1)v: England, April – June 2009 (*I Kar-Purkayastha, C Ingram, H Maguire, A Roche, August 17, 2009*)

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19311>

During the containment phase in the United Kingdom (April to June 2009), a cluster of influenza A(H1N1)v cases was identified prompting further investigation and public health action by the Health Protection Agency. In this cluster, investigators found that significant transmission occurred in two classes with attack rates of 17% and 7%. In each of the two classes a case had attended school whilst symptomatic. Minimum and maximum attack rates were 14% and 25% for the party. The study did not find any evidence of transmission on two school bus trips despite exposure over 50 minutes to a symptomatic case and over two periods of 30 minutes to a case during the prodromal phase (i.e. within 12 hours of symptom onset). Nor was there onward transmission in another school despite exposure over several hours to two cases, both of whom attended school during the prodromal phase.

2) Epidemiological and clinical characteristics of influenza A(H1N1)v infection in children: The first 45 cases in Cyprus, June – August 2009 (*M Koliou, et al., August 16, 2009*)

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19312>

Following the first imported case in a tourist in Cyprus on 2 June 2009, the influenza A(H1N1)v virus has spread on the island affecting mainly young adults and children. The study describes the first 45 cases in school age children. The investigation revealed that five children were hospitalised, and overall their symptoms were mild. Adherence to oseltamivir treatment was very high, and there was low frequency of gastrointestinal side effects such as nausea and vomiting. Camping places and summer schools played a significant role in spreading the infection among children of school age.

## **INFLUENZA AND OTHER RESPIRATORY VIRUSES** (added this week)

1) Editorial: The 2009 influenza pandemic begins (*John M. Wood, August 18, 2009*)

<http://www3.interscience.wiley.com/cgi-bin/fulltext/122555484/HTMLSTART>

There are of course areas of uncertainty and concern remaining: Will the H1N1v vaccines be immunogenicity and safe, as they are likely to have only been tested previously in an H5N1 formulation? Who will receive the first vaccine doses and will they be ready in time? Will the virus become more virulent and overwhelm our health care systems? Will resistance of H1N1v viruses to oseltamivir become more widespread? Will the H1N1v virus reassort with seasonal influenza viruses or even worse, H5N1 viruses?

2) A review of medical masks and respirators for use during an influenza pandemic (*Holly Seale, et al., August 18, 2009*)  
<http://www3.interscience.wiley.com/cgi-bin/fulltext/122555482/HTMLSTART>

Despite the lack of high level evidence, recommendations on the use of face masks and respirators for HCWs are made by many health authorities. To ensure that HCWs wear face masks to protect themselves during this time, cultural attitudes and the physical discomfort and mechanical issues associated with long-term respirator use must be addressed. Other factors that affect the use of personal protective equipment, such as staff and management attitudes about the value of respirator use, fatigue and the availability of replacement masks, also need to be considered.

3) Initial human transmission dynamics of the pandemic (H1N1) 2009 virus in North America (*Babak Pourbohloul et al, August 18, 2009*)  
<http://www3.interscience.wiley.com/cgi-bin/fulltext/122555483/HTMLSTART>

This study analyzed three mutually exclusive datasets from Mexico City *Distrito Federal* which constituted all suspect cases from 15 March to 25 April. Investigators estimated the initial reproduction number from 497 suspect cases identified prior to 20 April, using a novel contact network methodology incorporating dates of symptom onset and hospitalization, variation in contact rates, extrinsic sociological factors, and uncertainties in underreporting and disease progression. Robustness of this estimate was tested using both the subset of laboratory-confirmed pandemic (H1N1) 2009 infections and an extended case series through April 25<sup>th</sup>, adjusted for suspected ascertainment bias. The estimated transmission characteristic of pandemic (H1N1) suggests that pharmaceutical and non-pharmaceutical measures may limit its spread prior to the development of an effective vaccine.

### **JOURNAL OF INFECTIOUS DISEASES**

-Nothing new on H1N1 this week

### **LANCET**

1) Health care workers treating H1N1 patients may resist wearing respirators (*Splete. Heidi, August 14, 2009*)  
<http://www.thelancet.com/H1N1-flu/egmn/0c03af73>

A study found earlier this year in the JAMA, 27 health care workers with an average age of 48 years volunteered to wear each of eight different types of respirators, including the N95 and the powered air purifying respirator (PAPR), for as long as they could tolerate during an 8-hour shift. Overall, 59% of the participants removed the respirators before their shifts ended. Reported reasons for intolerance include: heat, pressure or pain, burning eyes, nausea, dizziness, mechanical impairments with duties and diminished vision, speech and hearing acuity. The investigators discuss the tolerability of respirators as a top issue for health care workers.

2) Obstetricians still not comfortable with Novel H1N1 influenza in pregnancy (*Johnson, Kate, August 14, 2009*)  
<http://www.thelancet.com/H1N1-flu/egmn/0c03af7d>

This article reviews a study published in the Lancet, discussing H1N1 infection in pregnancy. Of the 34 pregnant women you contracted the virus, only 50% were treated with oseltamivir, and just 8% received treatment within 48 hours of symptom onset. The investigators found that the antivirals have the best impact within the first 48 hours of treatment. They also noted that the most recent deaths in pregnant women who stated the treatment late. The article also suggests to the Infectious Diseases Society for Obstetrics and Gynecology needs to get the message out that practitioners should be thinking about the importance of H1N1 and pregnancy and recommend they should “recognize that influenza in pregnancy is not trivial, and they should consider early treatment”.

3) Fewer Novel H1N1 vaccine doses may be available when immunizations begin

(Evans, Jeff, August 14, 2009)

<http://www.thelancet.com/H1N1-flu/egmn/0c03afa7>

In the United States, although vaccination programs still are slated for mid-October, the number of doses that will be available by then has been lowered from 120 million to 45 million, with 20 million doses coming out each week afterward. Vaccine production and testing are on schedule, and clinical trial testing of the inactive and attenuated virus vaccines are already underway and programs for distributing the vaccines and conducting surveillance should be developed in advance when vaccines are ready. However, an unexpected difficulty in mass production of the vaccine has slowed in progress. This a result of lower than expected vaccine yield, compared to previous yields with seasonal fly vaccines.

### **LANCET INFECTIOUS DISEASES**

-Nothing new on H1N1 this week

### **MMWR**

1) Oseltamivir-resistant Novel Influenza A (H1N1) Virus Infection in Two Immunosuppressed Patients (*J. Eglund et al., August 17, 2009*)

[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58d0814a1.htm?s\\_cid=mm58d0814a1\\_x](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm58d0814a1.htm?s_cid=mm58d0814a1_x)

This report summarizes the case histories and investigations of: a) close monitoring for antiviral drug resistance immunosuppressed patients receiving treatment for pandemic influenza A (H1N1) and b) the implications for infection control in the hospital setting. Initially, both patients were infected with oseltamivir-susceptible viruses; oseltamivir resistance developed later during antiviral treatment. One patient's symptoms resolved after treatment with oseltamivir, and the other patient was receiving treatment with zanamivir and ribavirin as of August 13. There was no evidence of virus transmission between the patients and health-care personnel (HCP) contacts and other close contacts.

### **NATURE**

-Nothing new on H1N1 this week

### **NEW ENGLAND JOURNAL OF MEDICINE**

- Nothing new on H1N1 this week.

## **PLoS ONE**

1) Comparative pathogenesis of an avian H5N2 and a swine H1N1 influenza virus in pigs (*de Vleeschauwer, Annebel et al., August 19, 2009*)

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0006662>

Pigs are considered intermediate hosts for the transmission of avian influenza viruses (AIVs) to humans but the basic organ pathogenesis of AIVs in pigs has been barely studied. The study used 42 four-week-old influenza naive pigs and two different inoculation routes (intranasal and intratracheal) to compare the pathogenesis of a low pathogenic (LP) H5N2 AIV with that of an H1N1 swine influenza virus. The researchers suggests that LP H5 AIV infection of pigs may be useful to examine heterologous protection provided by H5 vaccines or other immunization strategies, as well as for future studies on the molecular pathogenesis and neurotropism of AIVs in mammals.

2) Estimating sensitivity of laboratory testing for influenza in Canada through modeling (*Dena L. Schanzer et al, August 19, 2009*)

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0006681>

This study aimed to estimate the sensitivity of influenza testing in Canada based on results of a national respiratory surveillance system. The weekly number of negative influenza tests from 1999 to 2006 was modeled. The estimated sensitivity of influenza tests reported to this national laboratory surveillance system is considerably less than reported test characteristics for most laboratory tests. A number of factors may explain this difference which includes specimen quality and procurement issues, in addition to test characteristics. The authors suggest that improved diagnosis would permit better estimation of the burden of influenza.

3) Chances and limitations of wild bird monitoring for the avian influenza virus H5N1 – detection of pathogens highly mobile in time and space (*Hendrik Wilking et al., August 19, 2009*)

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0006639>

The aim of this study was to analyze the efficacy of highly pathogenic influenza virus (HPAIV) H5N1 monitoring programs in Germany in wild birds. A statistical model was developed to evaluate and estimate the prevalence of HPAIV H5N1 in wild bird. Due to low sample sizes and partially untargeted sampling, the probability of detection of infected animals was low for most intervals and bird species. The study suggests that an improved targeting of the monitoring system as part of a risk-based approach with the perspective of reducing sample sizes for future research.

## **SCIENCE**

-Nothing new on H1N1 this week