

**WEEKLY SYNTHESIS OF SURVEILLANCE INFORMATION, LITERATURE &
GOVERNMENT UPDATES**

(WEEK ENDING AUGUST 28, 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 counties 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*
CANADA (PHAC)	72	1441
- BC	4	42
- AB	7	126
- SK	4	23
- MB	7	217
- ON**	23	353
- QC	25	591
- NB	0	2
- NS	1	17
- PEI	0	1
- NL	0	3
- Yukon	0	0
- NWT	0	4
- Nunavut	1	62
U.S. (CDC)	556	8843
E.U. and EFTA (ECDC)	103	
Mexico	179	
Chile	128	
Argentina	439	
Australia	131	4398
New Zealand	16	
TOTAL	2,873	

Note: PHAC numbers updated last at 11:00pm (EST) on August 27; CDC numbers updated last at 10:00 am on August 28; ECDC numbers updated last at 5:00 pm (CEST) on August 28 2009.

** Source: PHAC Flu Watch, week ending August 22 2009.*

*** Source: Ontario Flu Bulletin as of August 26, 2009.*

DEATHS AMONG NOVEL H1N1 INFLUENZA A VIRUS, APRIL 13-AUGUST 26, 2009

- 23 deaths have been reported among confirmed cases.
- Almost all of these fatalities were hospitalized prior to death (83%).
- Age of fatal cases ranged from 6 to 81 years of age; median is 56 years and the average age is 54 years.
- Among confirmed cases that have died, 20 or 87% had underlying chronic medical conditions compared to 66% of hospitalized cases.

HOSPITALIZATIONS AMONG NOVEL H1N1 INFLUENZA A VIRUS CASES

As of August 26, 2009 in Ontario:

- 360 confirmed cases have been hospitalized to date for greater than 24 hours to date.
- Of these, 335 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 25 cases are currently hospitalized, a total of 13 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	13	12	25
Number of Hospitalized and Discharged	60	275	335
Total hospitalized to date	73	287	360*

Source: MOHLTC Ontario Influenza Bulletin, iPHIS data as of 8:30 am, August 26, 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	171	2237	2408
Greater than or equal to 20 years	189	1445	1634
Total	360	3682	4042

Source: MOHLTC, iPHIS data as of 8:30 am, August 26, 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 22, 2009.

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

Map includes both seasonal flu and H1N1 flu activity. During week 33, (August 16-22, 2009), influenza activity decreased in the US, however there are still higher levels of ILI than is normal for this time of year. Approximately 99% 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. Five influenza-associated pediatric deaths were reported and both were associated with novel influenza A (H1N1) virus infection

CDC Guidance for Response to Influenza for Institutions of Higher Education during the 2009-2010 Academic Year (August 26, 2009)

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

This document provides guidance to help decrease the spread of flu among students, faculty, and staff of institutions of higher education (IHE) and post-secondary educational institutions during the 2009-2010 academic year.

CDC Influenza A (H1N1) 2009 Monovalent Vaccine Safety Monitoring: CDC Planning Recommendations for State, Local, Tribal, and Territorial Health Officials: Vaccine Safety Monitoring (August 21, 2009)

http://www.cdc.gov/h1n1flu/vaccination/safety_planning.htm

This guidance document addresses key components of the vaccine safety monitoring plan for 2009 H1N1 monovalent vaccines and presents suggested roles for state, local, tribal and territorial health officials involved in this monitoring.

PUBLIC HEALTH AGENCY OF CANADA (PHAC)

FluWatch Week 33 (August 16 - 22, 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/w33_09/pdf/fw2009-33-eng.pdf

Government of Canada announces two initiatives to support healthcare workers in treating and preventing H1N1 (August 27, 2009)

http://www.phac-aspc.gc.ca/media/nr-rp/2009/2009_0827-eng.php

Description of move to meet in Winnipeg next week to share and discuss best practices for treating severe H1N1 infections, as well as investment of \$2.7 million to the Influenza Research Network to evaluate the safety and efficacy of the pandemic vaccine, as well as to monitor and evaluate vaccine implementation programs.

Deaths Associated with Influenza A (H1N1) as of August 27, 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.

WORLD HEALTH ORGANIZATION (WHO)
August 28, 2009: WHO Preparing for the second wave: lessons from current outbreaks. http://www.who.int/csr/disease/swineflu/notes/h1n1_second_wave_20090828/en/index.html August 28, 2009: The World Health Organization (WHO) 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. http://www.who.int/csr/don/2009_08_28/en/index.html August 21, 2009: Weekly Epidemiological Record, vol. 84, 24 (pp 341-348) http://www.who.int/wer/2009/wer8434.pdf
EUROPEAN CENTRE FOR DISEASE PREVENTION & CONTROL (ECDC)
August 28, 2009: ECDC situation report (daily surveillance report). http://ecdc.europa.eu/en/healthtopics/Documents/090828_Influenza_AH1N1_Situation_Report_1700hrs.pdf

HEALTH/SURVEILLANCE BULLETINS:

Countries reporting first case(s) of pandemic H1N1

August 25, 2009- Angola: the country's first four pandemic H1N1 cases. The patients include two Brazilian and two Angolans from the same family, both of whom traveled internationally. All patients are in isolation and reported as stable.

August 24, 2009- Kyrgystan- the country reported its first confirmed pH1N1 cases in a 24 year old man and his wife who had traveled to Dubai in mid August. The two were admitted to an infectious disease hospital with flu symptoms. Lab tests in Moscow confirmed the diagnosis.

Global Information

Rates of influenza illness continue to decline in the temperate region of the southern hemisphere, except in South Africa where pH1N1 appeared slightly later than the other countries. Active transmission is still seen in some later affected areas of Australia, Chile and Argentina even as national rates decrease. Areas of tropical Asia are reporting increasing rates of illness as they enter their monsoon season.

WHO has been notified of 12 cases of oseltamivir resistance, following post-exposure prophylaxis (9), people treatment of infection (1), or in immunocompromised patients (2). These cases have arisen in different parts of the world (Japan, USA, HK China, Denmark, Canada and Singapore).

Southern Hemisphere

Australia

As of August 28, 2009 total confirmed cases are 34,467; Total deaths associated with pandemic H1N1 influenza is 131. Currently, there are 417 hospitalized cases of

pandemic H1N1 and 83 of these are in ICUs. The total number of hospitalizations in Australia since H1N1 Influenza was identified is 4398.

Australia Influenza Surveillance Summary Report, No. 15, 2009, reporting period: August 15-21 2009.

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

Overall, the current national influenza activity appears to be decreasing. Most jurisdictions have reported that pandemic H1N1 2009 activity has peaked or has plateaued. Pandemic H1N1 activity varies across geographical areas. In general, 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 is stabilizing. As of August 21st, 456 people are hospitalized and 98 are in ICU, with a total of 4082 people who are hospitalized. Highest hospitalization rate occurred in young children less than 5 years of age (34.6 per 100, 000 population). However, the number of deaths associated with H1N1 continues to increase. As of August 21, 131 people have died, and of these deaths four were pregnant women and 18 (13.7%) were Indigenous.

Indigenous Australians are approximately 5 times more likely than non-Indigenous Australians to be hospitalized for Pandemic (H1N1) 2009, representing 13.6% 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 26, 2009)

http://www.emergency.health.nsw.gov.au/swineflu/resources/pdf/case_statistics_270809.pdf

New Zealand

August 28, 2009: New Zealand now has 3127 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 16.

<http://www.moh.govt.nz/moh.nsf/indexmh/influenza-a-h1n1-update-144-280809?Open>

New Zealand: Weekly Summary (August 17 - 23, 2009)

There has been a slight increase in consultations for influenza-like illness through sentinel surveillance in week 34 (August 17-23, 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/FluWeekRpt200934.pdf

As of August 26, 2009, weekly ILI consultation rates are nearly three times higher than the winter peak experienced in the last two years. The number of ILI consultations has decreased over recent weeks. Schools are reporting usual levels of absenteeism for this time of year.

South America & the Americas

In the southern hemisphere, most countries (represented by Chile, Argentina, New Zealand, and Australia) appear to have passed their peak of influenza activity and have either returned to baseline levels or are experiencing focal activity in later affected areas; while a few others (represented by South Africa and Bolivia) continue to experience high levels of influenza activity.

Argentina: In week 32, pH1N1 influenza represented 92.4% of all respiratory viruses circulating in patients over 5 years old. In children under 5 years, RSV is responsible for 70.4% of cases, and pH1N1 only for 23.47%. *Source: PHAC, FluWatch Week 33.*

Chile: Since epi week 28 the proportion of pH1N1 relative to other respiratory viruses has declined to reach 11% of respiratory virus detections in week 32. Very few of influenza detections (<1%) of influenza detections in week 32. Very few of influenza detections are seasonal strains. In persons over 5 years old, pH1N1 predominates. *Source: PHAC, FluWatch Week 33.*

CENTER FOR INFECTIOUS DISEASE RESEARCH AND POLICY (CIDRAP)

August 27, 2009: South Korea rolls out strict flu measures. The education ministry in Korea announced strict measures to curb the spread of the pandemic H1N1 virus, including checking all students' temperatures each day, sterilizing classrooms daily, and refraining from group activities. So far 46 schools have closed or delayed the start of fall classes. The government expects to place school children on its vaccine priority list. <http://timesofindia.indiatimes.com/NEWS/World/Rest-of-World/All-South-Korean-students-face-swine-flu-check/articleshow/4941249.cms>

August 25, 2009: Sweden targets entire population for vaccine. Sweden has set aside \$142 million to pay for the vaccination of its entire population against pandemic flu. The country has signed an agreement with British vaccine maker GlaxoSmithKline for 18 million vaccine doses enough to cover its population of about 9.3 million with two doses each. Sweden's vaccination program will be voluntary. <http://www.swedishwire.com/politics/811-sweden-to-fund-mass-swine-flu-vaccination>

August 24, 2009: Smokers may be susceptible to severe H1N1 illness. A Hong Kong health official said smokers may be prone to suffering life-threatening complications from novel H1N1 flu. Thomas Tsang of Hong Kong's Centre for Health Protection said 12 of 27 patients who suffered pneumonia and other serious complications were current or former smokers, and some had no other known risk factors. About 1 in 200 people in Hong Kong who tested positive for H1N1 experienced severe disease <http://www.bloomberg.com/apps/news?pid=20601202&sid=aSs9.rvfo7g8>

August 25, 2009: PLoS Library of Science, Public Library of Science, a nonprofit, open-access scientific publisher, recently introduced a new portal for rapidly disseminating preliminary influenza-related research findings. Articles on the Web site, called PLoS Currents: Influenza, are screened by a board of moderators but are not thoroughly peer

reviewed. The site currently contains 10 articles, including one on pandemic H1N1 virulence and another on the outbreak and intensive care capacity.

<http://knol.google.com/k/plos/plos-currents-influenza/28qm4w0q65e4w/1%23#>

OTHER:

Pandemic influenza: Guidance on preparing acute hospitals in England

http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_080727.pdf

While not intended to provide detailed operational guidance for responding to an influenza pandemic, this document provides general information to support the preparations necessary for the operational response to such an event.

JOURNALS SCANNED:

- American Journal of Public Health
- British Medical Journal
- Clinical Infectious Diseases
- Emerging Infectious Diseases
- Eurosurveillance
- Journal of Infectious Diseases
- Lancet
- MMWR
- Nature
- New England Journal of Medicine
- PLoS One
- PLoS Currents (new this week)
- Science

AMERICAN JOURNAL OF PUBLIC HEALTH

- Nothing new on H1N1 this week.

BRITISH MEDICAL JOURNAL

1) BMJ group launches online swine flu forum for doctors across the globe (*Emma Dickinson*)

http://www.realwire.com/release_detail.asp?ReleaseID=13391

Responding to concerns from doctors in many countries, the BMJ Group has now made available a forum on pandemic flu through doc2doc.bmj.com – a new international on-line community for doctors

2) Monitoring the emergence of community transmission of Influenza A/H1N1 2009 in England: a cross sectional opportunistic survey of self sampled telephone callers to NHS Direct (*Alex J. Elliot et al., August 27, 2009*)

http://www.bmj.com/cgi/content/full/339/aug27_2/b3403

This study evaluated the ascertainment of the onset of community transmission of pH1N1 in England during the early phase of the pandemic by comparing two surveillance systems: NHS direct telephone health line and regional laboratory results on patients who tested for pH1N1. Trends in the proportion of patients with influenza A/H1N1 2009 across regions detected through clinical management were mirrored by

the proportion of NHS Direct callers with laboratory confirmed infection. The authors suggest that the reports from HPA regional laboratories could be used to recognise the extent to which local community transmission was occurring.

3) Willingness of Hong Kong healthcare workers to accept pre-pandemic influenza vaccination at different WHO alert levels: two questionnaire surveys (*Joseette S. Y. Chor et al., August 25, 2009*)

http://www.bmj.com/cgi/content/full/339/aug25_2/b3391

This study assessed the acceptability of pre-pandemic influenza vaccination among health care workers in public hospitals in Hong Kong and the effect of the pandemic alert level by the WHO. Health care workers completed a questionnaire in the two studies. The outcome measured was health care workers- nurses, doctors and allied health professionals- willingness to accept pre-pandemic influenza vaccination. The willingness to accept pre-pandemic influenza vaccination was low, and no significant effect was observed with the change in WHO alert level. Further studies are required to examine the cause of the low intention to accept pre-pandemic vaccination.

4) Opposition to swine flu vaccine seems to be growing worldwide (*Zosia Kmietowicz, August 26, 2009*)

http://www.bmj.com/cgi/content/full/339/aug26_1/b3461

As governments gear up to launch national vaccination programmes against swine flu, questions are beginning to emerge about how many people will be prepared to take up the offer of the vaccine.

5) Incidence of swine flu in England continues to fall but winter surge is predicted (*Nayanah Siva, August 21 2009*)

http://www.bmj.com/cgi/content/full/339/aug21_2/b3421

The number of new cases of A/H1N1 influenza reported in England continues to fall, but the government forecasts a sharp rise in cases during the winter months. England's chief medical officer states the incidence of swine flu is unusual at this time of the year. He also states that a decline in pattern is noted, but that it does not mean it is truly reducing and an expected second wave is forecasted this winter.

6) Should healthcare workers have the swine flu vaccine? (*Editorial, August 25, 2009*)

http://www.bmj.com/cgi/content/full/339/aug25_2/b3398

In a pandemic there are many uncertainties, but without vaccination many healthcare workers will become infected. Although this will be a mild illness for most, deaths in previously healthy young adults have occurred. Flu vaccination is likely to reduce this risk and has a well understood safety profile. Vaccination may also help to keep the healthcare system operating at maximum capacity throughout the pandemic. Evidence from decades of seasonal vaccination suggests likely benefits and low risk of adverse events.

CLINICAL INFECTIOUS DISEASES

-Nothing new on H1N1 this week

EMERGING INFECTIOUS DISEASES

-Nothing new on H1N1 this week

EUROSURVEILLANCE

1) Influenza A(H1N1)v in Germany: the first 10,000 cases (*A Gilsdorf & G Poggensee, on behalf of the working group pandemic influenza A(H1N1)., August 25, 2009*)
<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19318>

As of 25 August 2009, 14,940 cases of influenza A(H1N1)v have been reported in Germany. Germany wants to continue the current reporting system until the number of respiratory infections increases significantly, as can be expected in autumn again. Then it is planned to stop the case-based reporting by physicians and get the necessary information from the laboratory-based reporting of confirmed cases as it is done for seasonal influenza viruses and the sentinel surveillance.

JOURNAL OF INFECTIOUS DISEASES

-Nothing new on H1N1 this week

LANCET

-Nothing new on H1N1 this week

MORBIDITY AND MORTALITY REPORT (MMWR)

1) Use of Influenza A (H1N1) 2009 Monovalent Vaccine. Recommendations of the Advisory Committee on Immunization Practices (ACIP), 2009
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5810a1.htm?s_cid=rr5810a1_x

Recommendations by CDC's Advisory Committee on Immunization Practices (ACIP) regarding the use of vaccine against infection with novel influenza A (H1N1) virus. Specific vaccines against the novel influenza A (H1N1) virus are being manufactured, and licensed vaccine is expected to be available in the United States by mid-October 2009 (9). However, the initial supply of these vaccines might not be enough to meet the demand for vaccine. For this reason, the ACIP recommends that certain groups at highest risk for infection or influenza-related complications should be the initial targets for vaccination. Highlights of these recommendations include 1) the identification of initial target groups for vaccination efforts, 2) establishment of priority for a subset of persons within the initial target groups in the event that initial vaccine availability is unable to meet demand, and 3) guidance on use of vaccine in other adult population groups as vaccine availability increases.

2) Surveillance for the 2009 Pandemic Influenza A (H1N1) Virus and Seasonal Influenza Viruses - New Zealand, 2009 (*August 28, 2009*)
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5833a2.htm?s_cid=mm5833a2_x

To track the incidence of influenza-like illness (ILI) and compare the number of viruses identified as 2009 pandemic influenza A (H1N1) with the number identified as seasonal influenza, New Zealand public health officials analyzed weekly data from the country's sentinel general practitioner (GP) surveillance system and nonsentinel laboratory surveillance network for the period extending from the week ending May 3 through the week ending August 2. This report describes the results of those analyses. Like other southern hemisphere countries with temperate climates, New Zealand entered its winter season with cocirculation of both seasonal and 2009 pandemic influenza A (H1N1) strains. By the week ending July 5, 80% of the viruses identified by sentinel GP surveillance were the 2009 pandemic influenza A (H1N1) virus.

3) 2009 Pandemic Influenza A (H1N1) Virus Infections --- Chicago, Illinois, April--July 2009 (*August 28, 2009*)

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5833a1.htm?s_cid=mm5833a1_x

On April 24, in response to reports from the CDC of the first cases of 2009 pandemic influenza A (H1N1) virus infection in the United States, the Chicago Department of Public Health (CDPH) established enhanced surveillance for 2009 pandemic influenza A (H1N1) virus infections. This report summarizes laboratory-confirmed cases identified during April 24--July 25 and provides clinical and epidemiologic data for a subset of those cases.

NATURE

- Nothing new on H1N1 this week.

NEW ENGLAND JOURNAL OF MEDICINE

1) H1N1 Influenza, Public Health Preparedness, and Health Care Reform (*N. Lurie, August 26, 2009*)

<http://healthcarereform.nejm.org/?p=1622&query=TOC>

In December 2009, the Department of Health and Human Services will present to Congress its first-ever national health security strategy, outlining high-priority activities and areas of investment for strengthening the capability of the United States to prepare for, respond to, and recover from large-scale public health emergencies. The strategy is being developed in parallel with a national debate over health care reform, since national health security will not be achievable without key elements of reform. These elements include an effective focus on prevention and wellness, universal access to needed care, widespread deployment of health information technology, changes in the organization of and payment for care, and research on comparative effectiveness. A U.S. health security strategy will need to build on, and take full advantage of, core components of a reformed health care system. With the right approach, reform could facilitate vast improvements in our ability to respond to and recover from large-scale health emergencies.

PLOS ONE

- Nothing new on H1N1 this week.

PLOS CURRENTS (NEW THIS WEEK)

1) Molecular modeling of swine influenza A/H1N1, Spanish H1N1, and avian H5N1 flu N1 neuraminidases bound to Tamiflu and Relenza (*Schulten, Lee and Le, August 27, 2009*)

<http://knol.google.com/k/ly-le/molecular-modeling-of-swine-influenza/30e8n4orj1dsd/1?collectionId=28gm4w0q65e4w.1&position=1#>

A molecular model of the swine influenza A/H1N1 type-I neuraminidase was built using the pathogenic avian H5N1 type-I neuraminidase as a basis, due to the higher sequence identity between A/H1N1 and H5N1 (91.47%) compared to Spanish H1N1 (88.37%) neuraminidase. All-atom molecular dynamics (MD) simulations of all three neuraminidases were performed; the simulations allowed for the identification of both conserved and unique drug-protein interactions across all three proteins. Specifically, conserved networks of hydrogen bonds stabilizing the drugs in the sialic acid binding site of the simulated neuraminidases are analyzed, providing insight into how disruption due to mutations may lead to increased drug resistance. A possible mechanism through

which the residue 294 mutation acquires drug resistance is proposed by mapping the mutation site onto an electrostatic pathway which may play a role in controlling drug access to the binding pocket of neuraminidase, establishing a starting point for further investigations of neuraminidase drug resistance.

2) Tracking the evolution and geographic spread of Influenza A (*Donovan H. Park, Norman J. MacDonalds and Robert G. Beiko, August 27, 3009*)

<http://knol.google.com/k/donovan-parks/tracking-the-evolution-and-geographic/1049pdwpgoubk/1?collectionId=28gm4w0g65e4w.1&position=2#>

Consistent with seasonal flu outbreaks, the current pandemic strain, 2009 swine-origin strain of Influenza A H1N1, has shown rapid dispersal, with multiple examples of introduction into different geographic regions. Here the authors use an automated pipeline to collect data for analysis in the geospatial package GenGIS, which allows the geographic and temporal tracking of new sequence types and polymorphisms. Using this approach, the authors examine a pair of amino acid changes in the neuraminidase protein that are implicated in antibody recognition, and exhibit global dispersal with little or no geographic structure.

SCIENCE

-Nothing new on H1N1 this week