

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

(WEEK ENDING OCTOBER 30, 2009)

GOVERNMENT UPDATES

CENTRE FOR DISEASE CONTROL (CDC)

October 30, 2009: CDC H1N1 Flu Surveillance Update.

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

Weekly Flu View Map and Surveillance Report for Week Ending October 24, 2009.

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

Map includes both seasonal flu and H1N1 flu activity. During week 42 (October 18-24, 2009), influenza activity increased in the US, however the proportion of outpatient visits for ILI was above the national baseline.

Emergency Preparedness and Response: Overview of CDC Guidance on Infection Control in Healthcare Facilities (2009 H1N1 Influenza) (October 30, 2009)

<http://emergency.cdc.gov/coca/callinfo.asp>

PUBLIC HEALTH AGENCY OF CANADA (PHAC)

FluWatch Week 42 (October 18-24, 2009)

http://www.phac-aspc.gc.ca/fluwatch/09-10/w42_09/index-eng.php

Striking increases in overall influenza activity were reported this week. All indicators (proportion of positive influenza tests, national ILI consultation rate, number of regions reporting widespread activity and number of influenza outbreaks) were considerably higher this week compared to the previous weeks. There is increased influenza activity across the country, particularly in the West (BC, AB, SK, NT) and in NL.

Deaths Associated with Influenza A (H1N1) as of October 29, 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 Flu Vaccine (October 31, 2009).

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

The vaccine is being distributed to the provinces and territories on a per capita basis, as agreed to by the Chief Medical Officers of Health. The Territories have been supplied in full from initial shipments to minimize the number of shipments, given the logistical challenges of shipping to the North.

The Case of ActNowBC in British Columbia, Canada (October 26, 2009)

<http://www.phac-aspc.gc.ca/publicat/2009/ActNowBC/pdf/anbc-eng.pdf>

HAJJ Pilgrims- Recommendations for Travel (Updated October 26, 2009)

<http://www.phac-aspc.gc.ca/tmp-pmv/2009/hadi-pilgrim091026-eng.php>

This document provides recommendations that travellers to the Hajj get the vaccines required for entry by the Ministry of Saudi Arabia, and consider getting other vaccines recommended for travel to Saudi Arabia. Travellers should visit a travel health clinic at least 6 weeks before travel.

Prevention and management of cases of ILI, including the pH1N1 2009 influenza virus, on conveyances including airplanes, trains, ferries and buses (October 23, 2009)

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

This document has been developed by the Public Health Agency of Canada to provide guidance to conveyance operators and crew onboard airplanes, trains, ferries and buses, Canadian or foreign, as well as conveyances terminal operators and staff in Canada on the prevention and management of influenza-like-illness (ILI) in passengers or crew boarding or on board the conveyance.

Respiratory Virus Detections/Isolations in Canada (October 29, 2009)

<http://www.phac-aspc.gc.ca/bid-bmi/dsd-dsm/rvdi-divr/index-eng.php>

The Respiratory Virus Detection Surveillance System reports on respiratory viruses in Canada. Each week, selected laboratories report numbers of tests performed and numbers positive for Influenza, Respiratory Syncytial Virus, Parainfluenza, and Adenovirus to the Centre for Immunization and Respiratory Infectious Diseases (CIRID), Public Health Agency of Canada.

Statement on Seasonal Trivalent Inactivated Influenza Vaccine (TIV) for 2009-2010 (October 29, 2009)

<http://www.phac-aspc.gc.ca/publicat/ccdr-rmtc/09vol35/acs-dcc-6/index-eng.php>

The purpose of this statement is to review the NACI recommendations for immunization with the seasonal trivalent inactivated influenza vaccine (TIV) for the 2009-2010 season in light of the recent H1N1 pandemic, based on evidence available at this time.

Recommendations for pH1N1 Vaccine in Pregnancy (October 30, 2009)

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

Pregnant Women- Which H1N1 Flu Vaccine is Right for you? (October 30, 2009)

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

Guidance on Clinical Management in Remote and Isolated Communities (October 30, 2009)

<http://www.phac-aspc.gc.ca/alert-alerte/h1n1/hp-ps/guideili-ldsg09-eng.php>

ONTARIO

Ontario Influenza Bulletin 2009-2010, Surveillance Week 42 (October 18-24, 2009)

http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_09/bulletins/flu_bul_01_20091030.pdf

Influenza activity in Ontario is higher compared to the previous week. Many of the measures indicate that influenza activity increased in week 42 and continues to increase each week since week 38.

Guidance on Public Health Measures for pH1N1 Influenza Virus in First Nations Communities (October 30, 2009)

http://www.health.gov.on.ca/en/ccom/flu/h1n1/pro/docs/firstnation_guidance.pdf

Guidance for the Prevention and Management of ILI in Shelters during the pH1N1 2009-summary (October 27, 2009)

http://www.health.gov.on.ca/en/ccom/flu/h1n1/pro/docs/shelters_guidance.pdf

Clinical Guidance for the Management of Clients with ILI in Home Care setting during the pH1N1 2009- summary (October 28, 2009)

http://www.health.gov.on.ca/en/ccom/flu/h1n1/pro/docs/homecare_guidance.pdf

Temporary changes to the Schedule of Benefits for Physician Services and to Primary Health Care Funding in Response to H1N1 (October 30, 2009)

<http://www.health.gov.on.ca/english/providers/program/ohip/bulletins/4000/bul4501.pdf>

Kingston, Frontenac and Lennox & Addington (KFL&A): Regional Syndromic Surveillance Influenza Report (October 21-27, 2009)

<http://quesst.ca/report/Syndromic%20Surveillance%20Weekly%20Flu%20Report%2020091028.pdf>

BC CENTER FOR DISEASE CONTROL (BC CDC):

BC CDC: H1N1 flu virus update (October 27, 2009)

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

Weekly BC Pandemic H1N1 Surveillance Update as of October 16, 2009:

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

Pandemic H1N1 Influenza Vaccine Update (October 30, 2009)

http://www.bccdc.ca/resources/news-alerts/alerts/Oct_30_H1N1_vaccine.htm

WORLD HEALTH ORGANIZATION (WHO)

Global Situation Update 72, October 30, 2009:

http://www.who.int/csr/don/2009_10_23/en/index.html

In the northern hemisphere, influenza transmission continues to intensify marking an unusually early start to winter influenza season in some countries. In North America, the US, and parts of Western Canada continue to report high rates of ILI and numbers of pH1N1 2009 virus detections; Mexico has reported more confirmed cases since September than during the springtime epidemic. In Western Europe, high rates of ILI and proportions of respiratory specimens testing positive for pH1N1 have been observed in at least five countries. Many other countries in Europe and Western and Central Asia are showing evidence of early influenza transmission, including in Spain, Austria, parts of Northern Europe, Russia, and Turkey. In Japan, influenza activity has also increased sharply, especially on the northern island, approximately 10 weeks ahead the usual start of the winter influenza season.

EUROPEAN CENTRE FOR DISEASE PREVENTION & CONTROL (ECDC)

October 30, 2009: ECDC Daily Update, Pandemic (H1N1) 2009

http://www.ecdc.europa.eu/en/healthtopics/Documents/091030_Influenza_AH1N1_Situation_Report_0900hrs.pdf

ECDC Weekly Influenza surveillance overview (October 30, 2009)

[http://www.ecdc.europa.eu/en/healthtopics/Documents/091030_Influenza_A\(H1N1\)_Weekly_Executive_Update.pdf](http://www.ecdc.europa.eu/en/healthtopics/Documents/091030_Influenza_A(H1N1)_Weekly_Executive_Update.pdf)

Australia

Australia Influenza Surveillance Summary Report, No. 22, 2009, reporting period: October 10-16 2009 (October 16, 2009)

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

Nationally, most jurisdictions have reported that pandemic H1N1 2009 activity has peaked and is decreasing nationally with a number of regions reporting no new notifications in the last week, indicating that the first wave of the pandemic has subsided.

New Zealand

New Zealand: Weekly 43 Summary (October 19-25, 2009)

http://www.surv.esr.cri.nz/PDF_surveillance/Virology/FluWeekRpt/2009/FluWeekRpt200943.pdf

There has been a decrease in consultations for ILI through sentinel surveillance in week 43. 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.

CENTER FOR INFECTIOUS DISEASE RESEARCH AND POLICY (CIDRAP)

October 30, 2009: WHO experts favor single-dose H1N1 vaccine regimen.

<http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/oct3009sage.html>

An expert committee that advises the WHO today updated its guidance on pH1N1 vaccines, recommending a single dose for most age-groups and advising that any of the forms are safe for pregnant women.

October 28, 2009: Do seasonal flu shots impede little kids' ability to fight off pandemic flu?

http://www.google.com/hostednews/canadianpress/article/ALeqM5gJLYIRDvHWdvSLZTUQ_yymuF5rBq

Just when you thought the issue of seasonal and pandemic flu shots couldn't get any more confusing, European researchers are questioning whether it makes sense to vaccinate little kids against seasonal flu.

October 29, 2009: Experts show benefits of IV antiviral for severe H1N1.

<http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/oct2909intravenous.html>

Though only available for emergency use, intravenous (IV) antivirals peramivir and zanamivir have been lifesaving for some pandemic H1N1 patients, including two dramatic cases that doctors presented yesterday during a US CDC conference call for clinicians.

October 29, 2009: Statins may help patients with severe seasonal flu.

<http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/oct2909idsa2.html>

Commonly available drugs that are sold in lower-cost generic versions improve the survival of patients hospitalized for seasonal influenza, researchers reported today, raising the possibility of a widely available treatment that could be used in a severe flu pandemic if other drugs are in short supply.

October 28, 2009: US Student absenteeism, school closings climb. The number of students home sick with the flu and the number of school closings have been climbing steadily. By the end of last week, the number of closed schools reported by the US Department of Education reached 351, affecting 125,000 students. Officials suspected that many closing have not been reported. One especially hard-hit school was St. Charles East High in suburban Chicago, where 800 of 2,200 students were absent.
<http://www.fox59.com/news/sns-ap-il--swineflu-schools,0,5088946.story>

October 28, 2009: Gender-based vaccine doses suggested to boost supply. Two commentators writing in the *New York Times* say that using lower doses of flu vaccine in women could improve the vaccine supply without sacrificing protection. Sarah L. Klein, a Johns Hopkins immunologist, and Phyllis Greenbrier, president of the Society for Women's Health Research, point to studies in which women had a significantly stronger immune response to flu vaccines than men did. They say that besides stretching the supply, the step would reduce side effects for women.
http://www.nytimes.com/2009/10/28/opinion/28klein.html?_r=1

JOURNALS SCANNED:

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

AMERICAN JOURNAL OF PUBLIC HEALTH (*Special issue, October 2009 "Influenza Preparedness and response")

1) H1N1 Flu and the Tartar Steppe (*Daniel Tarantola*)
<http://www.ajph.org/cgi/reprint/99/S2/S209>

Abstract:

Whether the current H1N1 flu pandemic will grow to deadlier proportions, this cautionary tale reminds us of the hazards involved in scaling up a preemptive strike on a rapidly evolving viral foe.

2) A Primer on Strategies for Prevention and Control of Seasonal and Pandemic Influenza (*Scott Santibañez, Anthony E. Fiore, Toby L. Merlin, and Stephen Redd*)

<http://www.ajph.org/cgi/content/full/99/S2/S216>

Abstract:

The United States has made considerable progress in pandemic preparedness. Limited attention, however, has been given to the challenges faced by populations that will be at increased risk of the consequences of the pandemic, including challenges caused by societal, economic, and health-related factors. This supplement to the *American Journal of Public Health* focuses on the challenges faced by at-risk and vulnerable populations in preparing for and responding to an influenza pandemic. Here, we provide background information for subsequent articles throughout the supplement. We summarize (1) seasonal influenza epidemiology, transmission, clinical illness, diagnosis, vaccines, and antiviral medications; (2) H5N1 avian influenza; and (3) pandemic influenza vaccines, antiviral medications, and nonpharmaceutical interventions.

3) Estimating Influenza-Associated Deaths in the United States (*William W. Thompson, et al.*)

<http://www.ajph.org/cgi/content/full/99/S2/S225>

Abstract:

Most estimates of US deaths associated with influenza circulation have been similar despite the use of different approaches. However, a recently published estimate suggested that previous estimates substantially overestimated deaths associated with influenza, and concluded that substantial numbers of deaths during a future pandemic could be prevented because of improvements in medical care. We reviewed the data sources and methods used to estimate influenza-associated deaths. We suggest that discrepancies between the recent estimate and previous estimates of the number of influenza-associated deaths are attributable primarily to the use of different outcomes and methods. We also believe that secondary bacterial infections will likely result in substantial morbidity and mortality during a future influenza pandemic, despite medical progress.

4) Pandemic Influenza and Pregnancy: An Opportunity to Reassess Maternal Bioethics (*Ruth M. Farrell and Richard H. Beigi*)

<http://www.ajph.org/cgi/content/full/99/S2/S231>

Abstract:

Large-scale infectious epidemics present the medical community with numerous medical and ethical challenges. Recent attention has focused on the likelihood of an impending influenza pandemic caused by the H5N1 virus. Pregnant women in particular present policymakers with great challenges to planning for such a public health emergency. By recognizing the specific considerations needed for this population, we can preemptively address the issues presented by infectious disease outbreaks. We reviewed the important ethical challenges presented by pregnant women and highlighted the considerations for all vulnerable groups when planning for a pandemic at both the local and the national level.

5) The Open-Air Treatment of PANDEMIC INFLUENZA (*Richard A. Hobday and John W. Cason*)

<http://www.ajph.org/cgi/content/full/99/S2/S236>

Abstract:

The H1N1 "Spanish flu" outbreak of 1918–1919 was the most devastating pandemic on record, killing between 50 million and 100 million people. Should the next influenza pandemic prove equally virulent, there could be more than 300 million deaths globally. The conventional view is that little could have been done to prevent the H1N1 virus from spreading or to treat those infected; however, there is evidence to the contrary. Records

from an "open-air" hospital in Boston, Massachusetts, suggest that some patients and staff were spared the worst of the outbreak. A combination of fresh air, sunlight, scrupulous standards of hygiene, and reusable face masks appears to have substantially reduced deaths among some patients and infections among medical staff. We argue that temporary hospitals should be a priority in emergency planning. Equally, other measures adopted during the 1918 pandemic merit more attention than they currently receive.

BRITISH MEDICAL JOURNAL

1) Acceptability of A/H1N1 vaccination during pandemic phase of influenza A/H1N1 in Hong Kong: population based cross sectional survey (*Joseph T F Lau et al. October 27, 2009*)
http://www.bmj.com/cgi/content/full/339/oct27_1/b4164

Abstract:

The uptake of vaccination against influenza A/H1N1 by the general population of Hong Kong is unlikely to be high and would be sensitive to personal cost. Evidence about safety and efficacy is critical in determining the prevalence of uptake of vaccination.

2) Cases of swine flu in England almost double in a week (*Nayanah Siva October 26, 2009*)
http://www.bmj.com/cgi/content/full/339/oct26_1/b4415?q=w_pandemic_flu

Abstract:

The number of patients with swine flu who required intensive care rose to its highest level so far in the epidemic last week, with 99 patients being admitted compared with 63 at the end of July. "This is the most worrying figure we have had so far," said Liam Donaldson, chief medical officer for England.

CANADIAN MEDICAL ASSOCIATION JOURNAL

1) Fixing the fatal flaw in emergency planning (*Roz D. Lasker, Noni Macdonald and Paul C Hébert, October 26, 2009*)
<http://www.cmaj.ca/cgi/rapidpdf/cmaj.091820v1?ijkey=5a5d779e17b1ae5bed885e5bcdf99d>

Abstract:

Unquestionably, emergency planners have critically important expertise for designing protective strategies. But without listening to the public, they can't be aware of problems their plans may create.

2) Pandemic (H1N1) 2009 lives in some people for at least eight days after symptoms develop (*Laura Eggertson, October 27, 2009*)
<http://www.cmaj.ca/cgi/reprint/181/9/E203?maxtoshow=&HITS=10&hits=10&RESULTFOR>

Abstract:

The results of the study indicate that a large number of people with pandemic (H1N1) 2009 are still contagious after their fever breaks, and at least a proportion of people with the virus may be able to transmit it to others for a day or two longer than those who have seasonal influenza.

3) H1N1-related SIRS? (*Vivian C. McAlister, October 27, 2009*)
<http://www.cmaj.ca/cgi/reprint/181/9/616-c?maxtoshow=&HITS=10&hits=10&RESULT>

Abstract:

Is the development of SIRS with H1N1 a Th2 phenomenon and could it explain the susceptibility of pregnant women and Aboriginal or Mexican populations to this complication?

4) Dispensing antivirals in underserved communities (*Wayne Kondro, October 27, 2009*)
<http://www.cmaj.ca/cgi/reprint/181/9/E199?maxtoshow=&HITS=10&hits=10&RESULTFOR>

Abstract:

The simplest solution, would be to have antivirals “prepositioned” within remote communities and have them distributed by a “responsible” local official who’s in telephone contact with physicians.

5) Improved flu screening needed at airports (*Paul Webster, October 27, 2009*)
<http://www.cmaj.ca/cgi/reprint/181/9/E195?maxtoshow=&HITS=10&hits=10&RESULTFOR>

Abstract:

Crafted by the Centre for Research on Inner City Health at St. Michael’s Hospital in Toronto, the report is generating praise from the World Health Organization (WHO) and led the Kingdom of Saudi Arabia to recruit its authors to help it prepare for several million pilgrims to Mecca in November.

6) Aboriginal groups seek presentation on pan-Canadian Public Health Network (*Paul Webster, October 27, 2009*)
<http://www.cmaj.ca/cgi/rapidpdf/cmaj.109-3073v1?maxtoshow=&HITS=10&hits>

Abstract:

Federal refusal to include Aboriginal groups in the pan-Canadian Public Health Network - the country’s main national public health advisory body — helped exacerbate pandemic (H1N1) 2009, health experts familiar with Aboriginal communities say. “They are making uninformed decisions,” says Assembly of First Nations Public Health Advisor Kim Barker, “and they don’t even know it.”

7) Local control over Aboriginal health care improves outcomes, study indicates (*Paul Webster, October 27, 2009*)
<http://www.cmaj.ca/cgi/rapidpdf/cmaj.109-3072v1?maxtoshow=&HITS=10&>

Abstract:

As officials scramble to explain why Canadian Aboriginal people are especially vulnerable to pandemic (H1N1) 2009, health scientists in Manitoba and British Columbia have compiled striking evidence that First Nations control of health care leads to better health.

8) Modelling mitigation strategies for pandemic (H1N1) 2009 (*Marija Zivkovic Gojovic, B. Sander, D. Fisman, M. D Krahn, and C. Bauch, October 27, 2009*)
<http://www.cmaj.ca/cgi/rapidpdf/cmaj.091641v1?maxtoshow=&HITS=10&hits=10&RESULT>

Abstract:

Delays in vaccination of 30 days or more reduced the effectiveness of vaccination in lowering the attack rate. Early action, especially rapid vaccine deployment, is disproportionately effective in reducing the attack rate.

9) The H1N1 vaccine race: Can we beat the pandemic? (*Paul C. Hébert and Noni MacDonald, October 27, 2009*)
<http://www.cmaj.ca/cgi/reprint/181/8/E125?maxtoshow=&HITS=10&hits=10&RESULTFOR>

Abstract:

Will we be able to immunize vulnerable populations in time? Under the current plan, the answer is “No.” Vaccines must pass a regulatory process for licensing, and Health Canada, the licensing authority, has decided to treat this virus like a new subtype rather than a variant H1N1 strain, requiring a more extensive review and a slower rollout.

10) The H1N1 vaccine plan (*Elwyn Griffiths, October 27, 2009*)

<http://www.cmaj.ca/cqi/reprint/181/8/500?maxtoshow=&HITS=10&hits=10&RESULTFORM>

Abstract:

Although we are treating this vaccine as a new product, which it is, the extra work involved in the authorization was largely completed before this current pandemic was declared. Furthermore, as the regulatory review of the adjuvant has already been completed as part of the review of the H5N1 vaccine, no additional data on the adjuvant itself is being asked for by Health Canada.

11) Flu vaccination campaign poses monitoring difficulties (*Roger Collier, October 27, 2009*)

<http://www.cmaj.ca/cqi/reprint/181/8/E163?maxtoshow=&HITS=10&hits=10&RESULTFOR>

Abstract:

“Some people who will be getting the vaccine will have H1N1 infections or will get infected shortly after getting the vaccine, so this will complicate matters,” says Dr. Perry Kendall, provincial health officer for British Columbia.

12) Should noninvasive ventilation be considered a high-risk procedure during an epidemic? (*John McCracken, October 27, 2009*)

<http://www.cmaj.ca/cqi/rapidpdf/cmaj.081987v1?maxtoshow=&HITS=10&hits=10&RESULT>

Abstract:

Current infection-control policies that limit or prohibit the use of noninvasive ventilation as a high-risk intervention are based largely on supposition. Withholding the procedure under the current guidelines has the potential for considerable harm. In the face of the current influenza A (H1N1) epidemic, research is urgently needed to better inform the debate over whether noninvasive ventilation warrants classification as a high-risk procedure. Given the available evidence, the precautionary principle directs us toward the use of noninvasive ventilation during an epidemic.

CLINICAL INFECTIOUS DISEASES

1) Surfing The Web: Google Trends: A Web-Based Tool for Real-Time Surveillance of Disease Outbreaks (*Herman Anthony Carneiro and Eleftherios Mylonakis, October 21, 2009*)

<http://www.journals.uchicago.edu/doi/pdf/10.1086/630200>

Abstract:

Google Flu Trends can detect regional outbreaks of influenza 7–10 days before conventional Centers for Disease Control and Prevention surveillance systems. We describe the Google Trends tool, explain how the data are processed, present examples, and discuss its strengths and limitations. Google Trends shows great promise as a timely, robust, and sensitive surveillance system.

EMERGING INFECTIOUS DISEASES

1) Estimates of the prevalence of Pandemic (H1N1) 2009 United States, April-July 2009 (C. Reed *et al.*, October 29, 2009) [Editor's note – first wave estimate]
<http://www.cdc.gov/eid/content/15/12/pdfs/09-1413.pdf>

Abstract:

Through July 2009, a total of 43,677 laboratory-confirmed cases of influenza A pandemic (H1N1) 2009 were reported in the United States, which is likely a substantial underestimate of the true number. Correcting for under-ascertainment using a multiplier model, we estimate that 1.8 million–5.7 million cases occurred, including 9,000–21,000 hospitalizations.

2) Evidence-based Tool for Triggering School Closures during Influenza Outbreaks, Japan (Asami Sasaki *et al.*, November 2009)
<http://www.cdc.gov/eid/content/15/11/1841.htm>

Abstract:

Guidelines available to school administrators to support school closure decisions during influenza outbreaks are usually not evidence-based. Using empirical data on absentee rates of elementary school students in Japan, we developed a simple and practical algorithm for determining the optimal timing of school closures for control of influenza outbreaks.

3) Preexisting Immunity to Pandemic (H1N1) 2009 (Zheng Xing and Carol J. Cardona, November 2009)
<http://www.cdc.gov/eid/content/15/11/1847.htm>

Abstract:

Repeated exposure to seasonal influenza viruses or vaccination may have resulted in partial cell-mediated or humoral immunity to influenza virus (H5N1). The same type of immunity may have happened in persons exposed to pandemic (H1N1) 2009 virus as well.

4) Outbreak of antiviral drug-resistant Influenza A in Long-Term care facility, Illinois, USA, 2008 (N.J. Dharan *et al.*)
<http://www.cdc.gov/eid/content/15/12/pdfs/08-1644.pdf>

Abstract:

This outbreak underscores the possibility of 2 influenza A viruses, with different antiviral susceptibilities, in the same facility. During a facility outbreak of influenza, providers should consult antiviral recommendations of the Centers for Disease Control and Prevention and obtain influenza virus typing and subtyping to guide appropriate antiviral drug choices.

5) Oseltamivir-resistant Influenza A pandemic (H1N1) 2009 virus, Hong Kong China (H. Chen *et al.*)
<http://www.cdc.gov/eid/content/15/12/pdfs/09-1057.pdf>

Abstract:

Resistance to oseltamivir was observed in influenza A pandemic (H1N1) 2009 virus isolated from an untreated person in Hong Kong, China. Investigations showed a resistant virus with the neuraminidase (NA) 274Y genotype in quasi-species from a nasopharyngeal aspirate. Monitoring for the naturally occurring NA 274Y mutation in this virus is necessary.

6) Extracorporeal membrane oxygenation for pandemic (H1N1) 2009 (M. Firstenberg *et al.*)
<http://www.cdc.gov/eid/content/15/12/pdfs/09-1434.pdf>

Abstract:

We describe the successful use of ECMO in a patient with complicated pneumonia and influenza A pandemic (H1N1) 2009 virus infection.

7) Respiratory disease in adults during pandemic (H1N1) 2009 outbreak, Argentina (C. Zala and R. Gonzalez)

<http://www.cdc.gov/eid/content/15/12/pdfs/09-1062.pdf>

Abstract:

We observed an unexpectedly high rate of lower respiratory disease in adults with ILI during an outbreak of pandemic (H1N1) 2009 in Argentina. This finding suggests that a unique pattern of virulence, pulmonary tropism, or both may characterize the current influenza A (H1N1) infection, although we could not rule out co-infection with other viral or bacterial respiratory pathogens.

EUROSURVEILLANCE

1) In the bulletins: national updates by country

<http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19379>

Abstract:

No Abstract available

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (JAMA)

1) Neurologic Complications Associated With Novel Influenza A (H1N1) Virus Infection in Children-Dallas, Texas, May 2009 (*s.n.*, October 28, 2009)

<http://jama.ama-assn.org/cgi/content/full/302/16/1746>

Abstract:

In May 2009, the Dallas County Department of Health and Human Services notified CDC of four children with neurologic complications associated with novel influenza A (H1N1) virus infection admitted to hospitals in Dallas County, Texas, during May 18-28. This report summarizes the clinical characteristics of those four cases.

JOURNAL OF INFECTIOUS DISEASES

1) Avoiding Guillain-Barré Syndrome Following Swine Origin Pandemic H1N1 2009 Influenza Vaccination (Damon P. Eisen and Emma S. McBryde)

<http://www.journals.uchicago.edu/doi/pdf/10.1086/644782>

Abstract:

The demonstration that the H1N1/NJ/76 vaccine, along with other seasonal influenza vaccines, induces anti-ganglioside protein GM1 antibodies in mice is a substantial observation. Further, that the H1N1/NJ/76 vaccine hemagglutinin retained virally encoded sialic acid residues because of a relative lack of neuraminidase activity, increasing the molecular mimicry between the vaccine hemagglutinin and the monosialylated GM1, provides a biologically plausible if ultimately unproven explanation for the increase in GBS prevalence following H1N1/NJ/76 vaccination.

LANCET

-Nothing new on H1N1 this week

NATURE

- Nothing new on H1N1 this week

NEW ENGLAND JOURNAL OF MEDICINE

1) A Novel Influenza A (H1N1) Vaccine in Various Age Groups (*Feng-Cai Zhu, et al. October 21, 2009*)

<http://content.nejm.org/cgi/content/full/NEJMoa0908535v1>

Abstract:

A single dose of 15 µg of hemagglutinin antigen without alum adjuvant induces a typically protective immune response in the majority of subjects between 12 and 60 years of age. Lesser immune responses were seen after a single dose of vaccine in younger and older subjects.

2) Use of Ribavirin to Treat Influenza (*Chan-Tack, K.M. et al., October 21, 2009*)

<http://content.nejm.org/cgi/content/full/361/17/1713>

Abstract:

With the current H1N1 influenza pandemic, questions have arisen regarding the potential for ribavirin as a treatment option.

PLoS ONE

1) Fatal cases of Influenza A in childhood (*Johnson, Benjamin F. et al., October 30, 2009*)

<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0007671>

Abstract:

This work presents a rare insight into fatal influenza H3N2 in healthy children. It confirms that circulating seasonal influenza A H3N2 strains can cause severe disease and death in children in the apparent absence of associated bacterial infection or predisposing risk factors. This adds to the body of evidence demonstrating the burden of severe illness due to seasonal influenza A in childhood.

PLoS CURRENTS

1) Targeted vs. systematic early antiviral treatment against A(H1N1)v influenza with neuraminidase inhibitors in patients with influenza-like symptoms: Clinical and economic impact (*Sylvie Deuffic-Burban et al., KNOL, October 27, 2009*)

<http://knol.google.com/k/sylvie-deuffic-burban/targeted-vs-systematic-early->

Abstract:

Estimate of the clinical and economic outcomes associated with early initiation of treatment with neuraminidase inhibitors in all patients with influenza-like illnesses (ILI) (systematic strategy) vs. only those at high risk of complications (targeted strategy).

SCIENCE

1) Video on egg-based vaccine production (*October 28, 2009*)

<http://blogs.sciencemag.org/scienceinsider/2009/10/how-swine-flu-v.html>

Abstract:

-No Abstract Available

2) Quantifying the Impact of Immune Escape on Transmission Dynamics of Influenza

(Andrew W. Park et al., October 29, 2009)

<http://www.sciencemag.org/cgi/content/abstract/326/5953/726?rss=1>

Abstract:

Influenza virus evades prevailing natural and vaccine-induced immunity by accumulating antigenic change in the haemagglutinin surface protein. Linking amino acid substitutions in haemagglutinin epitopes to epidemiology has been problematic because of the scarcity of data connecting these scales. We use experiments on equine influenza virus to address this issue, quantifying how key parameters of viral establishment and shedding increase the probability of transmission with genetic distance between previously immunizing virus and challenge virus. Qualitatively similar patterns emerge from analyses based on antigenic distance and from a published human influenza study. Combination of the equine data and epidemiological models allows us to calculate the effective reproductive number of transmission as a function of relevant genetic change in the virus, illuminating the probability of influenza epidemics as a function of immunity.

3) The Transmissibility and Control of Pandemic Influenza A (H1N1) Virus (Yang Yang, et al., October 29, 2009)

<http://www.sciencemag.org/cgi/content/abstract/326/5953/729?rss=1>

Abstract:

Pandemic influenza A (H1N1) 2009 (pandemic H1N1) is spreading throughout the planet. It has become the dominant strain in the Southern Hemisphere, where the influenza season has now ended. Here, on the basis of reported case clusters in the United States, we estimated the household secondary attack rate for pandemic H1N1 to be 27.3% [95% confidence interval (CI) from 12.2% to 50.5%]. From a school outbreak, we estimated that a typical schoolchild infects 2.4 (95% CI from 1.8 to 3.2) other children within the school. We estimated the basic reproductive number, R_0 , to range from 1.3 to 1.7 and the generation interval to range from 2.6 to 3.2 days. We used a simulation model to evaluate the effectiveness of vaccination strategies in the United States for fall 2009. If a vaccine were available soon enough, vaccination of children, followed by adults, reaching 70% overall coverage, in addition to high-risk and essential workforce groups, could mitigate a severe epidemic.

4) Hemagglutinin Receptor Binding Avidity Drives Influenza A Virus Antigenic Drift (Scott E. Hensley, et al.)

<http://www.sciencemag.org/cgi/content/abstract/326/5953/734?rss=1>

Abstract:

Rapid antigenic evolution in the influenza A virus hemagglutinin precludes effective vaccination with existing vaccines. To understand this phenomenon, we passaged virus in mice immunized with influenza vaccine. Neutralizing antibodies selected mutants with single-amino acid hemagglutinin substitutions that increased virus binding to cell surface glycan receptors. Passaging these high-avidity binding mutants in naïve mice, but not immune mice, selected for additional hemagglutinin substitutions that decreased cellular receptor binding avidity. Analyzing a panel of monoclonal antibody hemagglutinin escape mutants revealed a positive correlation between receptor binding avidity and escape from polyclonal antibodies. We propose that in response to variation in neutralizing antibody pressure between individuals, influenza A virus evolves by adjusting receptor binding avidity

via amino acid substitutions throughout the hemagglutinin globular domain, many of which simultaneously alter antigenicity.

VACCINE

1) SIP 5: Social distancing during a pandemic: not sexy, but sometimes effective: social distancing and non-pharmaceutical interventions (Ferguson, Nicol and Schwartz, October 23, 2009)

http://www.sciencedirect.com/science?_ob=ArticleListURL&_method=list&_ArticleListID=10

Abstract:

Under some scenarios the timely introduction of appropriate NPIs could reduce the infection rate from 80% to 50% and the clinical attack rate from 40% to 25%.