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WEEKLY SYNTHESIS OF SURVEILLANCE INFORMATION, LITERATURE & GOVERNMENT UPDATES

(WEEK ENDING OCTOBER 23, 2009)

GOVERNMENT UPDATES

CENTRE FOR DISEASE CONTROL (CDC)

October 23, 2009: CDC H1N1 Flu Surveillance Update.
http://www.cdc.gov/h1n1flu/update.htm

Weekly Flu View Map and Surveillance Report for Week Ending October 17, 2009.
http://www.cdc.gov/flu/weekly/
Map includes both seasonal flu and H1N1 flu activity. During week 41 (October 11-17, 2009), influenza activity increased in the US, however the proportion of outpatient visits for ILI was above the national baseline.

Antiviral Treatment Options, including Intravenous Peramivir, for Treatment of Influenza in Hospitalized Patients for the 2009-2010 Season *(October 24, 2009).*
http://www.cdc.gov/h1n1flu/EUA/peramivir_recommendations.htm

Updated Interim Recommendations- HIV-Infected Adults and Adolescents: Consideration for Clinicians Regarding 2009 H1N1 Influenza *(October 21, 2009)*.
http://www.cdc.gov/h1n1flu/guidance_HIV.htm
This update provides new information about vaccination and treatment of HIV-infected adults and adolescents affected by 2009 H1N1 influenza.

Q&A: NEJM article "Hospitalized Patients with 2009 H1n1 Influenza in the United States-April-June 2009" *(October 23, 2009)*.
http://www.cdc.gov/h1n1flu/njem_qa.htm
The purpose of this study published by the *New England Journal of Medicine (NEJM)* was to analyze the clinical characteristics of patients hospitalized with 2009 H1N1 flu virus infections in the United States during April through June 2009.

Antiviral Safety Information *(October 19, 2009)*.
http://www.cdc.gov/H1N1flu/antivirals/safety_info.htm

Top 10 frequently asked questions on use of influenza A (H1N1) 2009 monovalent vaccines (2009 H1N1 vaccines): Practical considerations for immunization programs and providers *(October 21, 2009)*.
http://www.cdc.gov/H1N1flu/vaccination/top10_faq.htm
Two different influenza vaccines are available this influenza season, and many people will be recommended to receive both the seasonal influenza vaccine and the 2009 influenza A (H1N1) 2009 monovalent vaccine. This document is only intended to address the current pandemic situation and might change as the situation unfolds. They are not intended to be applied to routine use during future seasonal influenza vaccination efforts.

PUBLIC HEALTH AGENCY OF CANADA (PHAC)

FluWatch Week 41 (October 11-17, 2009)
http://www.phac-aspc.gc.ca/fluwatch/09-10/w41_09/index-eng.php
The overall influenza activity increased for a fifth consecutive week and was higher than expected for this time of the year.ill relatively low. All indicators (proportion of positive influenza tests, national ILI consultation rate, number of regions reporting widespread and localized activity and number of influenza outbreaks) were higher this week compared to the previous weeks.

Deaths Associated with Influenza A (H1N1) as of October 22, 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.

Health Canada Approves Pandemic H1N1 Flu vaccine for Canadians *(October 21, 2009).*
http://www.hc-sc.gc.ca/ahc-asc/media/nr-cp/_2009/2009_171-eng.php
Minister of Health Leona Aglukkaq today announced that Health Canada has approved AREPANRIX, a vaccine against the pandemic H1N1 flu virus.

Updated to the H1N1 flu virus frequently asked questions *(October 21, 2009)*
http://www.phac-aspc.gc.ca/alert-alerte/h1n1/faq_rg_h1n1-eng.php

Information on H1N1 flu virus and Individuals with Chronic Medical Conditions *(October 21, 2009)*
http://www.phac-aspc.gc.ca/alert-alerte/h1n1/fs-fi-chronic-chronique-eng.php
Everyone is at risk of catching the H1N1 flu virus but individuals with chronic medical conditions may be at increased risk of catching H1N1 and of developing serious complications from the flu, such as pneumonia or respiratory distress.

Information on Seniors and the Flu Virus (Seasonal and H1N1 flu) *(October 21, 2009)*
http://www.phac-aspc.gc.ca/alert-alerte/h1n1/fs-fi-seniors-aines-eng.php
Healthy people over 65 years of age don't seem to be at high risk of catching the H1N1 flu or of developing serious complications. However, seniors with chronic medical conditions or weakened immune systems may be at increased risk of catching H1N1 and of developing serious complications from the flu, such as pneumonia or respiratory distress.

Information on Children Less than five years of age and the H1N1 flu virus *(October 21, 2009)*
http://www.phac-aspc.gc.ca/alert-alerte/h1n1/fs-fi-children-enfants-eng.php
As with the seasonal flu, children less than five years old and especially those less than two, are more likely to catch the H1N1 flu virus, and if they do catch it, they are more likely to develop severe complications, like pneumonia or breathing problems.

Information on Pregnancy, Breastfeeding and H1N1 Flu virus *(October 21, 2009)*
http://www.phac-aspc.gc.ca/alert-alerte/h1n1/fs-fi-pregnancy-grossesse-eng.php
Pregnant women are not more likely to get the H1N1 flu, but if they do catch it, they are more likely to suffer complications, like pneumonia and severe respiratory distress. This puts both the mother and the baby's health at risk. Severe complications from the flu could lead to early delivery or miscarriage.

H1N1 Flu vaccine: Dosing Recommendations *(October 21, 2009)*
http://www.phac-aspc.gc.ca/alert-alerte/h1n1/vacc/recommendation-recommandation-eng.php

Considering the Options- Getting the flu versus getting a vaccine or taking an antiviral *(October 21, 2009)*
http://www.phac-aspc.gc.ca/alert-alerte/h1n1/vacc/options-eng.php
When considering your options about vaccination there are a number of factors that you should think about. This chart explains the risk of getting the flu versus the benefits and risks of getting an H1N1 flu vaccine and/or taking antiviral medication if you do get the flu.

Guidance Document on the Use of Pandemic Influenza A (H1N1) 2009 Inactivated Monovalent Vaccine October 21, 2009
http://www.phac-aspc.gc.ca/alert-alerte/h1n1/vacc/pdf/monovacc-guide-eng.pdf

ONTARIO

Ontario Influenza Bulletin 2009-2010, Surveillance Week 41 (October 11-17, 2009)
http://www.health.gov.on.ca/english/providers/program/pubhealth/flu/flu_09/bulletins/flu_bul_01_20091023.pdf
Influenza activity in Ontario is higher compared to the previous week. Many of the measures indicate that influenza activity increased in week 41 and continues to increase each week since week 38.

Information for Community-based healthcare providers and Long-Term Care Homes: pH1N1- Access to Supplies and Equipment (*October 22, 2009)*
http://www.health.gov.on.ca/english/providers/program/emu/health_notices/ihn_20091022.pdf

Newsroom: Ontario will offer H1N1 vaccine on October 26 *(October 21, 2009)*
http://news.ontario.ca/mohltc/en/2009/10/ontario-will-offer-h1n1-vaccine-on-october-26.html

Newsroom: Ontario sends first shipment of 700,000 doses of H1N1 vaccine to health units *(October 23, 2009)*
http://www.news.ontario.ca/mohltc/en/2009/10/ontario-sends-first-shipment-of-700000-doses-of-h1n1-vaccine-to-health-units.html

Kingston, Frontenac and Lennox & Addington (KFL&A): Regional Syndromic Surveillance Influenza Report (October 14-20, 2009)
http://quesst.ca/report/Syndromic%20Surveillance%20Weekly%20Flu%20Report%2020091021.pdf

BC CENTER FOR DISEASE CONTROL (BC CDC):

BC CDC: H1N1 flu virus update *(October 20, 2009)*
http://www.bccdc.ca/resourcematerials/newsandalerts/healthalerts/H1N1FluVirusHumanSwineFlu.htm

Weekly BC Pandemic H1N1 Surveillance Update as of October 19, 2009:
http://www.bccdc.ca/dis-cond/DiseaseStatsReports/influSurveillanceReports.htm#

Provincial Tamiflu supply for treatment of illness *(October 23, 2009)*
http://www.bccdc.ca/resources/news-alerts/alerts/Tamiflu_Oct23.htm

WORLD HEALTH ORGANIZATION (WHO)

Global Situation Update 71, October 17, 2009:
http://www.who.int/csr/don/2009_10_23/en/index.html
Influenza activity in the northern hemisphere is much the same as in the last week, though respiratory disease activity continues to spread and increase in intensity. In the U.S. is still reporting nationwide rates of ILI well above baseline rates with high rates of pH1N1 2009 virus detections in clinical laboratory specimens. Canada reports increases in ILI rates for the fourth straight week but the highest level of activity is in the western province of BC. Although influenza activity is low in most countries in Europe, in Belgium, Israel, the Netherlands, Norway, and parts of the UK consultation ILI/ARI rates are above baseline levels.

EUROPEAN CENTRE FOR DISEASE PREVENTION & CONTROL (ECDC)

October 23, 2009: ECDC Daily Update, Pandemic (H1N1) 2009
http://www.ecdc.europa.eu/en/healthtopics/Documents/091023_Influenza_AH1N1_Situation_Report_0900hrs.pdf

ECDC Weekly Influenza surveillance overview *(October 23, 2009)*
http://www.ecdc.europa.eu/en/publications/Publications/091023_EISN_Weekly_Influenza_Surveillance_Overview.pdf

Bacterial pulmonary infections in autopsy results from pandemic influenza (H1N1) 2009 deaths in the US *(October 22, 2009)*
http://ecdc.europa.eu/en/activities/sciadvice/Lists/ECDC%20Reviews/ECDC_DispForm.aspx?List=512ff74f%2D77d4%2D4ad8%2Db6d6%2Dbf0f23083f30&ID=679

HEALTH/SURVEILLANCE BULLETINS:

Australia

Australia Influenza Surveillance Summary Report, No. 22, 2009, reporting period: October 03-09 2009 *(Current as of October 26, 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 42 Summary (October 12-18, 2009)
http://www.surv.esr.cri.nz/PDF_surveillance/Virology/FluWeekRpt/2009/FluWeekRpt200941.pdf

There has been a decrease in consultations for ILI through sentinel surveillance in week 42. 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 23, 2009: Spikes in US indicators point to intensifying pandemic. Pandemic flu activity is now widespread in 46 states, five more than the previous week, causing an increasing number of school closures and starting to hit the young adult age-group harder.
http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/oct2309flu.html

October 23, 2009: More clouds in the H1N1 vaccine supply picture. Questions about the tardy US supply of pandemic H1N1 vaccine have increased with the report that most of Novartis's doses may not reach the country until early in 2010 and a European regulatory recommendation that may have implications for the global vaccine supply.
http://www.cidrap.umn.edu/cidrap/content/influenza/swineflu/news/oct2309vaxsupply.html

JOURNALS SCANNED:

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

AMERICAN JOURNAL OF PUBLIC HEALTH

- No new H1N1 content this week

BRITISH MEDICAL JOURNAL

1) Only 12% of Germans say they will have H1N1 vaccine after row blows up over safety of adjuvants (Stafford, Ned)
http://www.bmj.com/cgi/content/full/339/oct21_2/b4335

Abstract:
No abstract available.

2) H1N1 vaccination begins as proportion of cases in hospital admitted to intensive care rises (Cook, Sophie)
http://www.bmj.com/cgi/content/full/339/oct19_2/b4291

Abstract:
The swine flu vaccination programme will begin on Wednesday 21 October, when the first vaccines are distributed to acute trusts for use in "very high risk" patients and healthcare professionals, the chief medical officer Liam Donaldson has announced. At

the Department of Health briefing of 15 October, Professor Donaldson said that he was worried by the fact that the proportion of patients admitted to hospital who are going into intensive care has risen from one in eight to one in five. David Salisbury, the Department of Health director of immunisation, emphasised the need for pregnant women to be vaccinated because they are at particular risk. He said that seasonal flu vaccinations had been safely used in pregnant women and that this group had experienced high case fatality rates in previous pandemics.

3) H1N1 pandemic flu found to cause viral pneumonia in severe cases, says WHO (Zarocostas, John)
http://www.bmj.com/cgi/content/extract/339/oct20_2/b4313

Abstract:
The World Health Organization expressed heightened concern following the presentation of new evidence on clinical aspects of the H1N1 pandemic by experts from heavily affected countries, which document that "primary viral pneumonia is the most common finding in severe cases and a frequent cause of death."
Experts confirmed that most people infected by the H1N1 pandemic virus do not experience complications and recover within a week. But they also expressed concerns about small subsets of patients who rapidly develop severe progressive pneumonia. Pregnant women, children younger than 2 years old, and people with chronic lung disease, including asthma, were the groups with the most risk of severe or fatal illness, the briefing was told.

CLINICAL INFECTIOUS DISEASES

-No new H1N1 content this week

CMAJ

-No new H1N1 content this week

EMERGING INFECTIOUS DISEASES

1) Outbreak of Antiviral Drug–Resistant Influenza A in Long-Term Care Facility, Illinois, USA, 2008 (Dharan, Nila J. et al.)
http://www.cdc.gov/eid/content/15/12/pdfs/08-1644.pdf

Abstract:
An outbreak of oseltamivir-resistant influenza A (H1N1) occurred in a long-term care facility. Eight (47%) of 17 and 1 (6%) of 16 residents in 2 wards had oseltamivir-resistant influenza A virus (H1N1) infections. Initial outbreak response included treatment and prophylaxis with oseltamivir. The outbreak abated, likely because of infection control measures.

2) Oseltamivir-Resistant Influenza A Pandemic (H1N1) 2009 Virus, Hong Kong, China (Chen, H. 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.

3) Extracorporeal Membrane Oxygenation for Pandemic (H1N1) 2009 (Firstenberg, M. et al.)
http://www.cdc.gov/eid/content/15/12/pdfs/09-1434.pdf

Abstract:
As the world struggles with the challenges of influenza A pandemic (H1N1) 2009, it is clear that treatment options for critically ill infected patients are suboptimal because deaths continue to be reported in otherwise young and healthy patients. Extracorporeal membrane oxygenation (ECMO) is an established therapeutic option for patients with medically refractory cardiogenic or respiratory failure. We describe the successful use of ECMO in a patient with complicated pneumonia and influenza A pandemic (H1N1) 2009 virus infection.

4) Respiratory Disease in Adults during Pandemic (H1N1) 2009 Outbreak, Argentina (Zala, C. 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. Considering the evolving nature of influenza viruses, the wide clinical spectrum of pandemic (H1N1) 2009 should be further investigated.

5) Serolgic Analysis of Returned Travellers with Fever, Sweden (Askling, Helena H. et al.)
http://www.cdc.gov/eid/content/15/11/pdfs/09-1157.pdf

Abstract:
We studied 1,432 febrile travelers from Sweden who had returned from malaria-endemic areas during March 2005–March 2008. In 383 patients, paired serum samples were blindly analyzed for influenza and 7 other agents. For 21% of 115 patients with fever of unknown origin, serologic analysis showed that influenza was the major cause.

EUROSURVEILLANCE

1) Preliminary Analysis of the Pandemic H1N1 Influenza on Reunion Island (Indian Ocean): Surveillance Trends (July to Mid-September 2009) (Thouillot, F. et al.)
http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19364

Abstract:
First infections with the 2009 pandemic H1N1 influenza virus were identified on Reunion Island in July 2009. By the end of July, sustained community transmission of the virus was established. Pandemic H1N1 influenza activity peaked during week 35 (24 to 30 August), five weeks after the beginning of the epidemic and has been declining since week 36. We report preliminary epidemiological characteristics of the pandemic on Reunion Island in 2009 until week 37 ending September 13.

2) The 2009 Pandemic H1n1 Influenza And Indigenous Populations Of The Americas And The Pacific (G La Ruche et al.)
http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19366

Abstract:
There are few structured data available to assess the risks associated with pandemic influenza A(H1N1)v infection according to ethnic groups. In countries of the Americas and the Pacific where these data are available, the attack rates are higher in indigenous populations, who also appear to be at approximately three to six-fold higher risk of developing severe disease and of dying. These observations may be associated with documented risk factors for severe disease and death associated with pandemic H1N1 influenza infection (especially the generally higher prevalence of diabetes, obesity, asthma, chronic obstructive pulmonary disease and pregnancy in indigenous populations). More speculative factors include those associated with the risk of infection (e.g. family size, crowding and poverty), differences in access to health services and, perhaps, genetic factors. More…

3) Early Transmission Characteristics Of Influenza A(H1n1)V In Australia: Victorian State, 16 May – 3 June 2009 (E S McBryde et al.)
http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19363

Abstract:
Australia was one of the first countries of the southern hemisphere to experience influenza A(H1N1)v with community transmission apparent in Victoria, Australia, by 22 May 2009. With few identified imported cases, the epidemic spread through schools and communities leading to 897 confirmed cases by 3 June 2009. The estimated reproduction ratio up to 31 May 2009 was 2.4 (95% credible interval (CI): 2.1-2.6). Methods designed to account for undetected transmission reduce this estimate to 1.6 (95% CI: 1.5-1.8). Time varying reproduction ratio estimates show a steady decline in observed transmission over the first 14 days of the epidemic. This could be accounted for by ascertainment bias or a true impact of interventions including antiviral prophylaxis, treatment and school closure. Most cases (78%) in the first 19 days in Victoria were under the age of 20 years-old. Estimates suggest that the average youth primary case infected at least two other youths in the early growth phase, which was sufficient to drive the epidemic.

4) Pandemic H1n1 Influenza Surveillance In Victoria, Australia, April – September, 2009 (J E Fielding et al.)
http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19368

Abstract:
Victoria was the first Australian state to report widespread transmission of pandemic H1N1 2009 influenza. Notifiable laboratory-confirmed influenza and a general practitioner sentinel surveillance system measuring influenza-like illness (ILI), including laboratory confirmation of influenza as the cause of ILI, were used to assess the pandemic. The pandemic influenza A(H1N1)v virus quickly became the dominant circulating strain and notification rates were highest in children and young adults. Despite a high number of notified cases, comparison of ILI rates suggested the season peaked in late June, was similar in magnitude to 2003 and 2007 and less severe than 1997. The majority of clinical presentations were mild, but one quarter of hospitalised cases required admission to intensive care. More…

5) Progression And Impact Of The First Winter Wave Of The 2009 Pandemic H1n1 Influenza In New South Wales, Australia (New South Wales Public Health Network)
http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19365

Abstract:
A range of surveillance systems were used to assess the progression and impact of the first wave of pandemic H1N1 influenza in New South Wales, Australia during the southern hemisphere winter. Surveillance methods included laboratory notifications, near real-time emergency department syndromic surveillance, ambulance despatch surveillance, death certificate surveillance and purpose-built web-based data systems to capture influenza clinic and intensive care unit activity. The epidemic lasted 10 weeks. By 31 August 2009, 1,214 people with pandemic H1N1 influenza infection were hospitalised (17.2 per 100,000 population), 225 were admitted to intensive care (3.2 per 100,000), and 48 died (0.7 per 100,000). Children aged 0-4 years had the highest hospitalisation rates, while adults aged 50-54 had the highest rates of intensive care admission. More…

6) Pandemic Influenza In A Southern Hemisphere Setting: The Experience In Peru From May To September, 2009 (J Gómez et al.)
http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19371

Abstract:
This paper presents a description of Peru's experience with pandemic H1N1 influenza 2009. It is based on data from four main surveillance systems: a) ongoing sentinel surveillance of influenza-like illness cases with virological surveillance of influenza and other respiratory viruses; b) sentinel surveillance of severe acute respiratory infections and associated deaths; c) surveillance of acute respiratory infections in children under the age of five years and pneumonia in all age groups; and d) case and cluster surveillance. On 9 May 2009, the first confirmed case of pandemic H1N1 influenza in Peru was diagnosed in a Peruvian citizen returning from New York with a respiratory illness. By July, community transmission of influenza had been identified and until 27 September 2009, a total of 8,381 cases were confirmed. More…

7) Pandemic H1n1 Influenza In Brazil: Analysis Of The First 34,506 Notified Cases Of Influenza-Like Illness With Severe Acute Respiratory Infection (Sari) (W K Oliveira et al.)
http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19362

Abstract:
Recently, the brunt of the current influenza pandemic has been felt in the southern hemisphere. We report an analysis of the first 34,506 cases of influenza-like illness with severe acute respiratory infection (SARI) notified in Brazil during the epidemiological weeks 16 to 33. The 5,747 confirmed cases of pandemic H1N1 influenza showed two incidence peaks across the age span: one in children up to the age of five years (3.8/100,000) and one in individuals aged 20 to 29 years (4.6/100,000). People over the age of 60 had the lowest incidence (1.1/100,000 inhabitants). The epidemic peaked rapidly. Ninety-four percent of cases were concentrated in two of Brazilâ€™s five geographic regions â€“ the south and southeast, regions that have a more temperate climate and thus colder winters. Case-fatality of pandemic H1N1 influenza presenting with SARI was 11.2% (95% confidence interval (CI): 10.4%-12.1%). People with a reported comorbidity had approximately twice the risk of those without (relative risk=1.89; 95%CI: 1.64-2.18).

8) Interim Report On Pandemic H1n1 Influenza Virus Infections In South Africa, April To October 2009: Epidemiology And Factors Associated With Fatal Cases (B N Archer et al.)
http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19369

Abstract:
We provide an interim report on pandemic H1N1 influenza activity in South Africa, with a focus on the epidemiology and factors associated with deaths. Following the importation of the virus on 14 July 2009, and the epidemic peak during the week starting 3 August, the incidence in South Africa has declined. A total of 12,331 cases and 91 deaths have been laboratory-confirmed as of 12 October 2009. Age distribution and risk groups were similar to those observed elsewhere. The median age of patients who died (33.5 years) was significantly higher than that of the non-fatal cases (15.0 years, p<0.01). The most common underlying conditions among fatal cases were infection with human immunodeficiency virus (17/32 tested) and pregnancy (25/45 women of reproductive age). Active tuberculosis coinfection was present in seven of 72 fatal cases. These findings should be taken into consideration when planning vaccination strategies for 2010.

9) Pandemic H1N1 Influenza Lessons From The Southern Hemisphere (M G Baker.)
http://www.eurosurveillance.org/ViewArticle.aspx?ArticleId=19370

Abstract:
Early in the 2009 H1N1 influenza pandemic, an editorial in *Eurosurveillance* noted the importance of observing experience with this novel virus in the southern hemisphere during their usual winter influenza season [1]. This special issue of Eurosurveillance is a timely response to that call. It contains reports from the island of RÃ©union, South Africa, South America (Brazil, Peru), and Australia (New South Wales and Victoria). It also includes an overview of the effect of the pandemic on indigenous people. This editorial summarises some of the key findings from these papers, reviews features of pandemic H1N1 influenza epidemiology in these countries, and lists some potential lessons for the northern hemisphere (and possible future waves in the southern hemisphere).

JAMA

-No new H1N1 content this week

JOURNAL OF INFECTIOUS DISEASES

-No new H1N1 content this week

LANCET

-No new H1N1 content this week

MMWR

1) Introduction and Transmission of 2009 Pandemic Influenza A (H1N1) Virus Kenya, June-July 2009
http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5841a1.htm?s_cid=mm5841a1_e

Abstract:
This report documents household transmission from the first four laboratory-confirmed cases of pandemic H1N1 in Kenya. The overall 26% secondary attack rate (range: 7%--33%) for laboratory-confirmed pandemic H1N1 is similar to the recently reported 30% secondary attack rate for laboratory-confirmed pandemic H1N1 in a tourist group in China . However, among the two student groups (groups 1 and 2), the 33% secondary household attack rate was slightly higher than the 21%--26% usually reported for laboratory-confirmed seasonal influenza. The student groups were defined as household

contacts because they lived together, ate together, and spent much of their time together, like members of typical households. However, unlike most households, the students were healthy young adults, and the nature of the students' interactions might have differed from typical household interactions. More…

NATURE

- No new H1N1 content this week

NEW ENGLAND JOURNAL OF MEDICINE

1) Use of Ribavirin to Treat Influenza (K.M. Chan-Tack, J.S. Murray, and D.B. Birnkrant)
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. These authors report that the published studies are inconclusive regarding the potential clinical benefits of the drug for the treatment of influenza. Substantial safety issues, such as the risk of hemolytic anemia and of teratogenicity, present further challenges to address if ribavirin is to be used for the treatment of influenza. To further address these issues, formal trials of ribavirin should be conducted to assess safety and efficacy.

2) 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/NEJMoa0908535

Abstract:
Background There is an urgent need for a vaccine that is effective against the 2009 pandemic influenza A (H1N1) virus. Methods A split-virus, inactivated candidate vaccine against the 2009 H1N1 virus was manufactured, and we evaluated its safety and immunogenicity in a randomized clinical trial. Subjects were between 3 and 77 years of age, stratified into four age groups. The immunization schedule consisted of two vaccinations, 21 days apart. Subjects were injected with placebo or with vaccine, with or without alum adjuvant, at doses of 7.5 µg, 15 µg, or 30 µg. Serologic analysis was performed at baseline and on days 21 and 35. Results A total of 2200 subjects received one dose, and 2103 (95.6%) received the second dose, of vaccine or placebo. No severe adverse side effects associated with the vaccine were noted. More…

PLOS CURRENTS: INFLUENZA

No new H1N1 content this week

PLOS ONE

-No new H1N1 content this week

SCIENCE

-No new H1N1 content this week

VACCINE

1) National influenza surveillance in Vietnam, 2006–2007 (Hien T. Nguyen et al. October 21, 2009)

http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TD4-4XH4PY2-

Abstract:
In 2006, national influenza surveillance was implemented in Vietnam. Epidemiologic and demographic data and a throat swab for influenza testing were collected from a subset of outpatients with influenza-like illness (ILI). During January 1, 2006 through December 31, 2007, of 184,521 ILI cases identified at surveillance sites, 11,082 were tested and 2112 (19%) were positive for influenza by reverse transcription polymerase chain reaction. Influenza viruses were detected year-round, and similar peaks in influenza activity were observed in all surveillance regions, coinciding with cooler and rainy periods. Studies are needed to ascertain the disease burden and impact of influenza in Vietnam.

2) Prior infection with an H1N1 swine influenza virus partially protects pigs against a low pathogenic H5N1 avian influenza virus (Van Reeth, Kristien et al.)
http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TD4-4XGB994-

Abstract:
Most humans lack virus neutralizing (VN) and haemagglutination inhibition (HI) antibodies to H5N1 avian influenza viruses (AIVs), but cross-reactive neuraminidase inhibition (NI) antibodies and cell-mediated immune (CMI) responses are common. These immune responses result largely from infections with seasonal human H1N1 influenza viruses, but the protective effect of H1N1 infection-immunity against H5N1 infection has never been examined. To this purpose, we have used the pig model of influenza and a low pathogenic (LP) H5N1 AIV. Pigs were inoculated intranasally with sw/Belgium/1/98 (H1N1) 4 weeks before challenge with duck/Minnesota/1525/81 (H5N1). While the viruses failed to cross-react in HI and VN tests, the H1N1 infection induced high levels of H5N1 cross-reactive NI antibodies. More…

3) Characterisation of influenza A viruses with mutations in segment 5 packaging signals (Hutchinson, Edward C. et al.)
http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TD4-4XGB994-

Abstract:
Influenza A virus vRNA segments contain specific packaging signals at their termini that overlap the coding regions. To further characterise segment 5 packaging signals, we introduced synonymous mutations into the terminal coding regions of the vRNA and characterised the replicative fitness of the resulting viruses. Most mutations tested were well-tolerated, but a virus with alterations to NP codons 464-466, near the 5′-end of the vRNA, produced small plaques and replicated to around one-tenth of the level of wild type virus. The mutant virus supported normal levels of NP and segment 5 vRNA synthesis but packaged reduced levels of both segment 5 and segment 3 into virus particles. This suggests an interaction between segments 3 and 5 during influenza A virus assembly.

4) Nuclear functions of the influenza A and B viruses NS1 proteins: Do they play a role in viral mRNA export? (Schneider, Jana and Thorsten Wolf.)
http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TD4-4XGB994-

Abstract:
Although it is known for decades that influenza viruses replicate and transcribe their genome in the nucleus of the host cell, there is little knowledge about the cellular and viral factors mediating the nuclear transport of viral mRNA transcripts to the cytoplasm. Efficient export of mature cellular mRNA is coupled to their synthesis by the RNA

polymerase II and subsequent processing events such as splicing. This linkage necessitated influenza viruses to evolve a strategy to integrate their unspliced mRNAs generated by the viral polymerase into a cellular mRNA export pathway. Recent findings suggest that the major cellular mRNA export receptor Tap/NXF1 promotes the influenza virus mRNA export. Here, we review functions of the NS1 proteins of influenza A and B viruses and discuss the emerging evidence supporting a role of these viral factors in the export of viral mRNAs.

5) Influenza virus CTL epitopes, remarkably conserved and remarkably variable (Rimmelzwaan, Guus et al.)
http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TD4-4XGB994-

Abstract:
Virus-specific cytotoxic T lymphocytes (CTL) contribute to the control of virus infections including those caused by influenza viruses. Especially under circumstances when antibodies induced by previous infection or vaccination fail to recognize and neutralize the virus adequately, CTL are important and contribute to protective immunity. During epidemic outbreaks caused by antigenic drift variants and during pandemic outbreaks of influenza, humoral immunity against influenza viruses is inadequate. Under these circumstances, pre-existing CTL directed to the relatively conserved internal proteins of the virus may provide cross-protective immunity. Indeed, most of the known human influenza virus CTL epitopes are conserved. However, during the evolution of influenza A/H3N2 viruses, the most important cause of seasonal influenza outbreaks, variation in CTL epitopes has been observed. The observed amino acid substitutions affected recognition by virus-specific CTL and the human virus-specific CTL response in vitro.
More…

6) Influenza vaccination and mortality benefits: New insights, new opportunities (Lone Simonsen, Cecile Viboud, Robert J. Taylor, Mark A. Miller, Lisa Jackson.)
http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6TD4-4XGB994-

Abstract:
Influenza vaccination control strategies in most countries rely on vaccination of seniors and other high risk groups. Although placebo-controlled randomized trials show influenza vaccine is effective in younger age groups, few seniors >70 years were studied even though they suffer >90% of influenza-related deaths. Excess mortality studies could not confirm a national decline in influenza-related mortality while vaccine coverage quadrupled. Cohort studies have consistently reported that vaccination reduces all-cause winter mortality by ~50%, an astonishing claim given only ~5% of all winter deaths are attributable to influenza. This VE overestimation has now been attributed to profound confounding frailty selection bias. A way forward includes a new generation of unbiased studies with laboratory endpoints, and requires an agreement that the evidence base was flawed. The latter may clear the way for more immunogenic vaccines for seniors and exploration of other influenza control strategies.

7) Structural basis for oseltamivir resistance of influenza viruses. (Collins PJ, Haire LF, Lin YP, Liu J, Russell RJ, Walker PA, Martin SR, Daniels RS, Gregory V, Skehel JJ, Gamblin SJ, Hay AJ.)
http://tiny.cc/DdIgP

Abstract:
Oseltamivir, one of the two anti-neuraminidase drugs, is currently the most widely used drug against influenza. Resistance to the drug has occurred infrequently among different

viruses in response to drug treatment, including A H5N1 viruses, but most notably has emerged among recently circulating A H1N1 viruses and has spread throughout the population in the absence of drug use. Crystal structures of enzyme–drug complexes, together with enzymatic properties, of mutants of H5N1 neuraminidase have provided explanations for high level oseltamivir resistance due to the common H275Y mutation, with retention of zanamivir susceptibility, and intermediate level resistance due to the N295S mutation. Complementation of enhanced NA activity due to a D344N mutation by the H275Y mutation suggests an explanation for the recent emergence and predominance of oseltamivir-resistant influenza A H1N1 viruses.