

pH1N1 Flu Virus (Human Swine Influenza) Information Resources

Current as of May 21, 2010 at 12 pm

Contents

[Events](#)

[Lessons Learned](#)

Updates by Jurisdiction

Ontario

[Ontario Ministry of Health and Long-Term Care \(MOHLTC\)](#)

[Ontario Agency for Health Promotion and Protection \(OAHPP\)](#)

Canada

[Public Health Agency of Canada \(PHAC\)](#)

United States

[Centers for Disease Control and Protection \(CDC\)](#)

[Center for Infectious Disease Research & Policy](#)

Europe

[United Kingdom's Health Protection Agency \(HPA\)](#)

[European Centre for Disease Control and Prevention \(ECDC\)](#)

International

[Australia and New Zealand](#)

[Pan American Health Organization \(PAHO\)](#)

[World Health Organization \(WHO\)](#)

[Research Articles](#)

Events [\[back to top\]](#)

Current / Upcoming

[JUN 21-22] [H1N1: The world responds to a 21st century pandemic](#) (London, UK)
This international conference will bring together scientists, academics and public health professionals to examine what we have learned since the appearance of H1N1 in April 2009, and the knowledge gained from the global effort can be used in preparing for future pandemic response.

Archived

[ARCHIVED] "H1N1 and Pregnancy: Key Considerations for Vaccination and Management": Online learning program for health professionals

To access the program, go to:

www.mdBriefCase.com (for physicians)

www.rxBriefCase.com (for pharmacists)

www.AdvancingIn.com (for nurses and other healthcare professionals)

[ARCHIVED] [COCA conference calls](#)

[ARCHIVED] U.S. DHHS [H1N1 Video Briefing archive](#)

[ARCHIVED] [Know what to do about the flu](#): webcast series from the U.S flu.gov

Lessons Learned [\[back to top\]](#)

[In focus: external review of pandemic response begins](#)

An in-depth review by external experts to assess the global response to the pandemic and identify lessons for the future is underway. The Review Committee will also examine the general functioning of the International Health Regulations.

See also: [19 May 2010 press briefing on external review \[mp3 47Mb\]](#)

[Report from the first meeting of the review committee \[pdf 78kb\]](#)

Recent literature on Lessons Learned:

[The impact of H1N1 influenza A virus pandemic on the blood donations in Hyogo Prefecture, Japan.](#)

Tsubokura M, Nakada H, Matsumura T, Kodama Y, Narimatsu H, Yamaguchi T, Kami M. Transfusion. 2010 May 3. [Epub ahead of print]

[Negotiating equitable access to influenza vaccines: global health diplomacy and the controversies surrounding avian influenza H5N1 and pandemic influenza H1N1.](#)

Fidler DP. PLoS Med. 2010 May 4;7(5):e1000247. No abstract available.

[An intervention to improve compliance with transmission precautions for influenza in the emergency department: successes and challenges.](#)

May L, Lung D, Harter K. J Emerg Med. 2010 May 6. [Epub ahead of print]

[Factors influencing the uptake of 2009 H1N1 influenza vaccine in a multiethnic Asian population.](#)

Wong LP, Sam IC. Vaccine. 2010 May 5. [Epub ahead of print]

[Credit crunch, swine flu, the winter freeze - life pressures on the older adult.](#)

Newton J. Gerodontology. 2010 Mar;27(1):1-2. No abstract available.

[Seasonal and Pandemic A \(H1N1\) 2009 influenza vaccination coverage and attitudes among health-care workers in a Spanish University Hospital.](#)

Vírseda S, Restrepo MA, Arranz E, Magán-Tapia P, Fernández-Ruiz M, de la Cámara AG, Aguado JM, López-Medrano F. Vaccine. 2010 May 12.

[Aerosol influenza transmission risk contours: A study of humid tropics versus winter temperate zone.](#)

Hanley BP, Borup B. Virol J. 2010 May 14;7(1):98.

[Tuberculosis Control: Lessons for Outbreak Preparedness in Correctional Facilities.](#)

Parvez FM, Lobato MN, Greifinger RB. J Correct Health Care. 2010 May 12. [Epub ahead of print]

[Surveys of knowledge, attitudes and practices on the influenza A \(H1N1\) pandemic.](#)

Hsu LY. Ann Acad Med Singapore. 2010 Apr;39(4):336-2. No abstract available. PMID: 20473462

[2009 Pandemic influenza H1N1: paediatric perspectives.](#)

Lee HY, Wu CT, Lin TY, Chiu CH. Ann Acad Med Singapore. 2010 Apr;39(4):333-3. PMID: 20473461

[Severe infection with H1N1 requiring intensive care--lessons for preparedness programmes.](#)

Chien JM, Tan BH, Yang KS, Tan TT, Low CY, Kurup A, Leong HN, Low JG, Kang ML, Chlebicki MP, Koh YL. Ann Acad Med Singapore. 2010 Apr;39(4):328-5. PMID: 20473460

[International health regulations: lessons from the influenza pandemic in Singapore.](#)

Low CL, Chan PP, Cutter JL, Foong BH, James L, Ooi PL. Ann Acad Med Singapore. 2010 Apr;39(4):325-3. PMID: 20473459

[Influenza A \(H1N1-2009\) pandemic in Singapore--public health control measures implemented and lessons learnt.](#)

Tay J, Ng YF, Cutter JL, James L. Ann Acad Med Singapore. 2010 Apr;39(4):313-12. PMID: 20473458

[Survey of healthcare workers' attitudes, beliefs and willingness to receive the 2009 pandemic influenza A \(H1N1\) vaccine and the impact of educational campaigns.](#)

Thoon KC, Chong CY. Ann Acad Med Singapore. 2010 Apr;39(4):307-6. PMID: 20473457

[Attitudes of patients, visitors and healthcare workers at a tertiary hospital towards influenza A \(H1N1\) response measures.](#)

Tan WM, Chlebicka NL, Tan BH. Ann Acad Med Singapore. 2010 Apr;39(4):303-4. PMID: 20473456

Ministry of Health and Long-Term Care [[back to top](#)]

[Ontario Influenza Bulletin: Surveillance Week 18 \(May 2, 2010– May 8, 2010\)](#)

- Overall, influenza activity in Ontario during week 18, 2010, was **similar** when compared to week 17, 2010.
- During week 18, 2010, one new laboratory confirmed case of pH1N1 was seen in the North East region. No new institutional influenza outbreaks were reported.
- For week 18, one health unit reported sporadic level influenza activity, while the remaining health units reported no activity or did not report their activity level.
- The rate of influenza-like illness (ILI) in patients seen by sentinel physicians is lower than what is expected for this time of the year based on the average ILI rate reported in week 18 from previous years.

[ARCHIVED] [Previous MOHLTC updates and news conference video footage](#)

Ontario Agency for Health Protection and Promotion [[back to top](#)]

[Laboratory Pandemic Influenza Surveillance Report: Information current as of May 10, 2010](#)

[ARCHIVED] [Swine influenza outbreak page](#)

Public Health Agency of Canada (PHAC) [[back to top](#)]

No items of interest this week.

[ARCHIVED] [Previous PHAC documents and updates](#)

Centers for Disease Control and Prevention (CDC) & US Department of Health and Human Services [[back to top](#)]

[UPDATE: CDC Guidance for Day and Residential Camp Responses to Influenza during the 2010 Summer Camp Season](#)

This document provides guidance to help prevent and control the spread of influenza (flu), including 2009 H1N1 flu, among campers and camp staff during the 2010 summer camp season. This guidance updates the earlier camp guidance on "novel influenza A (H1N1 flu) virus" that was issued on June 14, 2009.

[UPDATE: Weekly FluView Map and Surveillance Report for Week Ending May 8, 2010](#)

During week 18 (May 2 - 8, 2010), influenza activity decreased in the U.S. 26 (1.5%) specimens tested by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories and reported to CDC/Influenza Division were positive for influenza.

[UPDATE: 2009 H1N1 Flu International Situation Update](#)

This report provides an update to the international situation as of May 14, 2010. The World Health Organization (WHO) continues to report updated 2009 H1N1 flu-associated laboratory-confirmed cases and deaths on its Web page.

Center for Infectious Disease Research and Policy [\[back to top\]](#)

[Airport screening may have delayed H1N1 spread in Vietnam](#) (2010-05-18)

An analysis of the H1N1 influenza pandemic in Ho Chi Minh City, Vietnam, suggests that the government's initial policy of screening incoming travelers might have delayed the start of widespread community transmission of the virus by a few weeks.

[CDC updates summer camp flu guidance](#) (2010-05-18)

The Centers for Disease Control and Prevention (CDC) yesterday updated its flu guidance for the summer camp season. Based on sporadic activity, officials expect to see less flu at summer camps this year, though the CDC says vaccination, especially for high-risk people, is the best way to prevent camp-related outbreaks. Antivirals are recommended only for high-risk patients who have been exposed to flu, and the CDC said camps should maintain hand hygiene and other cleaning measures.

[Australia sees uptick in flu-like illness](#) (2010-05-18)

Australia's most recent surveillance data show that community levels of influenza-like illness have increased, but that few of the cases are due to influenza. Instead, respiratory syncytial virus was the most common lab confirmation for the week ending May 7. Of the 557 confirmed flu cases this year, 12% have been pandemic H1N1, 75% unspecified type A influenza (most likely pandemic H1N1), 1% A/H3N2, and 10% type B. Sentinel sites reported two recent hospitalizations, both due to type B flu.

[ACIP vaccine-priority guidelines reinforced](#) (2010-05-18)

Using a computer simulation model, researchers from the University of Pittsburgh, in conjunction with the Department of Health and Human Services, determined that allocating limited pandemic vaccine first to at-risk patients proved effective. The study, which looked at vaccination distribution in the greater Washington, DC, area, compared a policy of vaccinating children (high transmitters) first, versus the at-risk-first policy of the Advisory Committee on Immunization Practices (ACIP).

[Study shows tell-tale heart findings](#) (2010-05-18)

A review of 28 pandemic H1N1 patients hospitalized for at least 24 hours showed that an elevated heart rate and certain echocardiographic findings may indicate novel H1N1 infection. Compared with controls, the H1N1 patients showed higher left ventricular end-systolic dimension as well as decreased early diastolic velocity and increased late diastolic velocity, which means they also had a significantly decreased early diastolic/late diastolic velocity ratio, among other findings.

[Study finds cross-reactivity between H1N1, swine strains](#) (2010-05-18)

Whether through vaccination or infection, pigs show cross-reactivity between pandemic H1N1 and various strains of swine-specific influenza strains, according to a letter in *Emerging Infectious Diseases*. Researchers inoculated swine with a pandemic H1N1 vaccine, as well as antigen from four different H1N1 strains of influenza found in swine (from 1976, 1980, 1992, and 2003). They also infected the animals with the 2003 strain. Blood draws showed cross-reactivity to all subtypes.

[WHO's Chan welcomes pandemic review at start of World Health Assembly](#)

(2010-05-17)

The World Health Assembly (WHA), the decision-making arm of the World Health Organization (WHO), opened in Geneva today with director-general Dr Margaret Chan praising the accomplishments of global partners with diseases such as smallpox and polio but noting that health officials got lucky with the pandemic H1N1 virus because it has not overwhelmed medical systems and is a good match with the vaccine.

[Staph patterns in hospitalized kids drive treatment changes](#) (2010-05-17)

A study designed to explore management of *Staphylococcus aureus* of hospitalized children found that methicillin-resistant (MRSA) infections rose tenfold over the 10-year study period, leading to dramatic changes in antibiotic prescribing patterns.

[DFA inaccurate for very ill H1N1 patients](#) (2010-05-17)

Direct immunofluorescence assay (DFA) for detecting pandemic H1N1 flu is unreliable in intensive care unit patients, according to a study presented today at the American Thoracic Society (ATS) conference in New Orleans. "Our findings suggest that in patients with severe H1N1 influenza, in whom rapid and precise diagnosis would be most important, DFA unfortunately does not perform well," said lead author Chanu Rhee, MD, who added that the test is reliable in noncritical patients.

[Clinical flu symptoms help guide triage](#) (2010-05-17)

A triage system that scored emergency room patients for influenza-like illness (ILI) complemented clinical judgment in deciding antiviral treatment, according to a new study. Patients in a Guadalajara, Mexico, hospital last year received scores for various ILI signs, symptoms, or lab results (eg, "2" for cough, fever, fatigue, difficulty breathing, or underlying condition). An ILI score of 7 or greater indicated a possible need for antiviral drugs, and 16 or higher for hospitalization.

[China vaccinates 100 million](#) (2010-05-17)

The Chinese pandemic H1N1 vaccination campaign has reached more than 100 million people, China's health minister said, according to the Indo-Asian News Service (IANS). Health minister Chen Zhu said, "We have achieved progress in the fight against A(H1N1) influenza." In addition, "China has more than 20 million doses of A(H1N1) vaccine in store, and pharmaceutical manufacturers are always ready for production," Chen said.

[South Korea offers free vaccine to World Cup fans](#) (2010-05-17)

South Korea will offer free H1N1 vaccine to tourists traveling to South Africa for the 2010 World Cup soccer tournament, which begins next month, according to China's Xinhua news service. Those interested in the shots should visit state-run clinics throughout the country, the Korea Centers for Disease Control and Prevention said. The first World Cup match is set for Jun 11.

[Surveillance reports show few pandemic flu hot spots](#) (2010-05-14)

Low levels of flu activity across the United States resemble a summer pattern, while globally only sporadic pandemic flu activity is occurring with the most active areas in parts of the Caribbean and Central America, according to updates today.

[Proposal for pre-pandemic vaccination sparks discussion](#) (2010-05-13)

An influenza expert who formerly headed the World Health Organization's (WHO's) flu program and now works for Novartis has suggested developing a pre-pandemic vaccine to get the jump on the next flu pandemic -- an idea that other experts are greeting with caution or skepticism.

[India approves pandemic vaccine](#) (2010-05-13)

The pharmaceutical company Zydus Cadila announced today it has gained approval from the drug controller general of India to become the first India-based firm to market a pandemic H1N1 vaccine in the country. The vaccine, VaxiFlu-S, will be marketed by Vaxxicare, part of a division of the company that focuses on preventives.

[Study finds side effects with mass antiviral 'blanket'](#) (2010-05-13)

Last June when pandemic H1N1 struck 17% of students and staff at a UK elementary school, 92% of students and 91% of staff received the antiviral drug oseltamivir (Tamiflu) for treatment and prevention. Of those, 41% (113/273) of students and 47% (25/53) of staff reported adverse effects. Overall, 14% of students and 20% of staff did not complete the course of oseltamivir, primarily due

to adverse effects. The authors say potential benefits of mass treatment must outweigh possible side effects.

[Netherlands cancels third of its GSK vaccine order](#) (2010-05-13)

GlaxoSmithKline (GSK) has agreed to cut 33% of its order of H1N1 vaccine from the Netherlands, saving the country 21 million euros, Reuters reported. The Dutch government said in March it wanted to sell 21 million unused vaccine doses back to drug firms. The original Dutch order was 34 million doses, 11 million of which were administered and 257,000 sold to other countries. GSK cut its Dutch order from 9 million to 6 million doses. A second supplier, Novartis, has not reduced its order.

[Virus-like-particle vaccine shows promise](#) (2010-05-13)

A recombinant pandemic H1N1 virus-like-particle flu vaccine made by Rockville, Md.-based Novavax protected ferrets against the disease in a study published in *Vaccine*. The vaccine induced a good antibody response in the animals and inhibited viral replication in the upper and lower respiratory tract. A single 15-microgram dose resulted in complete clearance of the virus from the lungs. Ferrets are known to be good animal models for flu in humans.

[Pandemic vaccine sales totaled \\$3.4 billion](#) (2010-05-12)

Though some had predicted higher amounts, drug companies in 2009 sold almost \$3.4 billion worth of H1N1 vaccine, according to a Kalorama Information report. Breakdown by company, in millions of US dollars and percent of market share was: GSK (1,190, 35), Novartis (950, 28), Sanofi (620, 18), Astra Zeneca (365, 11), CSL (160, 5), Baxter (50, 1.5), and other (50, 1.5). The report details the challenges of producing a new vaccine and says the methods used will serve as a model for future vaccines.

[Hong Kong to lower flu alert level](#) (2010-05-12)

Hong Kong officials announced yesterday that they will lower their flu response level from "emergency" to "alert" on May 24, pending any signals indicating otherwise that might arise from the World Health Organization's World Health Assembly next week. Officials said their decision is based on flu activity that has been declining since late September and has remained low, even during the area's winter flu season. It also said it has detected no change in clinical severity.

[California promotes vaccine ahead of summer travel](#) (2010-05-12)

California's health department has renewed its push for pandemic flu vaccination, advising the public that flu outbreaks in the Southern Hemisphere over the summer months combined with summer travel spread globally, the Los Angeles *Daily News* reported. Officials said they hope to use up some of the state's 4 million-dose vaccine surplus before some of it expires in June.

[Flu outbreak temporarily curbed blood donations](#) (2010-05-12)

Confirmation of the first pandemic flu cases in a community reduced blood donations 21%, with whole-blood donations dropping by 1,329 units, Japanese researchers reported in *Transfusion*. They examined blood donation patterns 4 weeks before and 4 weeks after novel H1N1 was detected in Kobe. Bloodmobile donations saw the most dramatic drop, 39%. Within 1 week, however, donations returned to normal, propelled by e-mails requests and new bloodmobile drives.

[Clinical definition, immunofluorescence not sensitive](#) (2010-05-12)

Clinical and microbiological examination of 444 Australian children who were seen for flu-like symptoms at the start of the country's pandemic outbreak showed that 119 had the pandemic virus, with direct immunofluorescence identifying only 69. The findings appear in *Pediatric Infectious Disease Journal*. Clinical symptoms didn't vary much between kids that had the pandemic virus and those with other illnesses, except younger children with flu were more likely to have headaches and myalgia.

[WHO to reassess pandemic status](#) (2010-05-11)

The Emergency Committee of the World Health Organization (WHO) will wait for winter in the Southern Hemisphere before again reviewing the status of the H1N1 pandemic, Reuters reported today. The 15-member expert committee will likely meet later this month or early next, after the WHO's governing World Health Assembly next week. The panel may maintain the status quo, declare a transitional "post-peak" phase, or declare that the pandemic is over.

[EU Parliament members call for H1N1 investigation](#) (2010-05-11)

More than 200 deputies of the European Parliament have signed a proposal calling for a special committee to look into the European Union's (EU's) response to the H1N1 pandemic, including an evaluation of the EU's dependence on the WHO. According to theparliament.com, signers claim that steps taken undermined EU credibility, the amount spent on vaccines was unwarranted, and officials should have changed course early on. The assembly's Conference of Presidents will vote on the matter tomorrow.

[Vermont asks for input on its H1N1 response](#) (2010-05-11)

The Vermont Department of Health is asking Vermonters, including those who helped respond to the pandemic, what they think of the state's response to novel H1N1 flu, according to an Associated Press (AP) article. The state, which saw a third of its population receive the H1N1 vaccine, is offering two survey versions on its Web site: www.HealthVermont.gov. Health Commissioner Dr. Wendy Davis said the surveys will be used to strengthen the state's planning and future response.

[New Zealand administers 900,000 vaccine doses](#) (2010-05-11)

New Zealanders this year have received more than 900,000 doses of seasonal flu vaccine, covering more than 20% of the population, the government said today. Health Minister Tony Ryall said, "Including protection against the pandemic swine flu in the seasonal vaccine has driven this unprecedented demand." Last year a record 960,000 doses were distributed in 30 weeks. Ryall estimated New Zealand would reach that mark in 11 weeks.

[Drills highlight gaps in H1N1 procedures](#) (2010-05-10)

During the first weeks of the H1N1 pandemic last spring, drills to simulate resuscitation of pediatric patients showed that many healthcare workers failed to don proper protective equipment, according to Johns Hopkins research presented at the Pediatric Academic Societies annual meeting last week. Of 84 participants in simulations involving H1N1 and a cardiopulmonary event, only 51 used protective eyewear, 73 used gowns, and 68 used an N-95 or air-purifying respirator.

[Ireland reports 1,600 vaccine reactions](#) (2010-05-10)

More than 1,600 adverse reactions to the pandemic H1N1 vaccine were reported to the Irish Medicines Board, according to the Dublin-based *Sunday Tribune*. Two deaths were also reported, in people who had underlying conditions, but a link to the vaccine has not been proven. Fifteen people reported an "anaphylactic"-type reaction. Less serious reactions included injection-site problems, stomach upset, flu-like symptoms, dizziness, fainting, and limb weakness.

[India region has almost 1% H1N1 case-fatality rate](#) (2010-05-10)

A study of pandemic H1N1 flu lab investigations, hospital admissions, outpatient data, and mortality figures in the Pune metropolitan region of India showed a case-fatality rate (CFR) of almost 1%. The researchers found that confirmed H1N1 patients had a significantly higher risk of hospitalization than seasonal flu patients did. Of 93 flu deaths, 84 were from novel H1N1 and 9 from seasonal flu. Pandemic CFR was 0.86%, significantly higher than that of other countries.

[Flu still fairly quiet in Australia](#) (2010-05-10)

Australia so far this year has confirmed 492 cases of influenza, of which 13% have been subtyped as pandemic H1N1; another 73% were influenza A but not subtyped. Less than 1% were A/H3N2, and 11% were type B, according to the country's Department of Health and Ageing (DHA). Two

H1N1 patients were hospitalized. "Levels of influenza-like illness (ILI) in the community remain relatively low and reporting from laboratories indicates that little of this ILI is due to influenza," the DHA said.

[Study: Adjuvanted H1N1 vaccine was very effective](#) (2010-05-07)

A preliminary study from Germany suggests that an adjuvanted vaccine against the pandemic H1N1 virus was highly effective in adolescents and younger adults and moderately effective in older people, according to a report published yesterday in *Eurosurveillance*.

[WHO reports sporadic global H1N1 activity](#)

The most active areas of pandemic H1N1 flu are parts of West Africa, the Caribbean, and Southeast Asia, the World Health Organization (WHO) said today. In the Americas, limited data suggest transmission in Guatemala, Cuba, and Peru, with Chile reporting evidence of low-level community H1N1 circulation, including some severe cases. Activity remains sporadic in other Southern Hemisphere regions. Seasonal type B flu was detected sporadically across Asia, Africa, Europe, and the Americas.

[US flu activity remains low](#)

Influenza activity across the United States continues to decline, the CDC reported today, with the proportion of deaths attributed to pneumonia and influenza below the epidemic threshold. The proportion of outpatient visits for flu-like illness was 0.7%, below the national baseline of 2.3%. Of the eight influenza A viruses subtyped, all were novel H1N1. One pediatric H1N1 death was reported. Four states had local flu activity, and 30 states or territories reported sporadic activity.

[Australian state running low on seasonal vaccine](#)

Supplies of seasonal influenza vaccine, which contains the pandemic strain, are running low in Australia's second most populous state, Victoria, according to the Melbourne-based *Herald Sun*. Australia's CSL, which makes most of the country's flu vaccine, rushed new doses to wholesalers to help meet demand, which has remained high even after the country banned use of the vaccine in those under 5 years old after some had adverse events. CSL warned that more shortages may loom.

[Study shows ethnic variations in vaccine acceptance](#)

A survey that explored ethnic differences among 1,025 Malaysians showed a high willingness to accept the pandemic vaccine, especially when vaccine safety and religious accommodations were ensured. About 70% of those surveyed late last year indicated a willingness to be vaccinated. For the Muslim Malay people surveyed, a halal vaccine (acceptable to Islam) was the main factor in deciding to get vaccinated, whereas vaccine safety was the main factor for Chinese and Indian participants.

[ARCHIVED] [Current overview and older updates from CIDRAP](#)

Health Protection Agency (UK) [[back to top](#)]

*Due to low influenza activity the National Influenza Report will be published fortnightly, with a short summary of activity provided in alternate weeks. Should activity increase again the report will return to a weekly schedule. The next full report will be published on **Thursday 15 April 2010**.*

[Weekly Epidemiological Update Summary for 13 May 2010 \(Week 19\)](#)

Pandemic influenza activity is very low and stable across the UK.

[ARCHIVED] [Swine Influenza page](#)

[ARCHIVE] [DH Pandemic Flu site](#)

European Centre for Disease Prevention and Control [[back to top](#)]

[Information from Member States, Candidates, EEA and EFTA countries](#) (Interactive map)

[Weekly influenza surveillance overview. Main surveillance developments in week 18/2010 \(03 May 2010 – 09 May 2010\)](#)

- All reporting countries indicated stable or decreasing trends. Four countries (Belgium, Czech Republic, Estonia and Hungary) reported sporadic activity while all others reported no activity.
- Of the 18 influenza viruses detected during week 18/2010, 15 (83%) were type B viruses and two (11%) were the 2009 pandemic influenza A(H1N1) virus.
- All pandemic viruses tested were resistant to M2 inhibitors. To date, 2.5% of tested viruses were resistant to oseltamivir, and none were resistant to zanamivir.
- In week 18/2010, the one SARI case reported was not due to 2009 pandemic influenza A(H1N1) virus.

[ARCHIVE] [Maps, surveillance summaries and previous ECDC updates](#)

[ARCHIVE] [European Union Influenza H1N1 page](#)

Australia and New Zealand [[back to top](#)]

New Zealand: [Pandemic Influenza H1N1 2009 \(swine flu\) – Update 185](#)

Australia: [Influenza Surveillance Report No. 18 for the week ending 07 May 2010](#)

[ARCHIVED] [New Zealand's H1N1 page](#)

[ARCHIVED] [Australia's H1N1 Update Bulletins](#)

Pan-American Health Organization (PAHO) [[back to top](#)]

[Regional Update, Pandemic \(H1N1\) 2009. \(Published on May 17, 2010\)](#)

- In North America, acute respiratory disease activity remained stable and is lower than expected in most areas.
- Caribbean countries reported unchanged or decreasing trends in acute respiratory.
- Central American countries reported decreasing or unchanged trends in acute respiratory disease.
- All South American countries reported decreasing or unchanged trends in acute respiratory disease, except Brazil which reported an increasing trend.
- From EW 1 to 17, in Mexico, Colombia and Cuba, the pandemic virus predominated. Bolivia detected the predominance of influenza B and Canada and Chile detected mostly respiratory syncytial virus.
- 35 new confirmed deaths in 3 countries were reported; in total there have been 8,396 cumulative confirmed deaths.

[ARCHIVED] [PAHO Influenza A \(H1N1\) Portal](#)

World Health Organization (WHO) [[back to top](#)]

[Pandemic \(H1N1\) 2009 – Update 100](#)

[In focus: external review of pandemic response begins](#)

An in-depth review by external experts to assess the global response to the pandemic and identify lessons for the future is underway. The Review Committee will also examine the general functioning of the International Health Regulations.

See also: [19 May 2010 press briefing on external review \[mp3 47Mb\]](#)

[Report from the first meeting of the review committee \[pdf 78kb\]](#)

[ARCHIVED] [WHO H1N1 Guidance Documents](#)

[ARCHIVED] [Older WHO Updates](#)

Research Articles [[back to top](#)]

[Medline literature search on H1N1](#) (current as of today)

[Streptococcus pneumoniae bacteraemia in a young man with pandemic influenza A \(H1N1\) 2009.](#)

Isais FS, Dimatactac F, Llorin R, Chow A, Leo YS. Ann Acad Med Singapore. 2010 Apr;39(4):338-3. No abstract available. PMID: 20473463

[Surveys of knowledge, attitudes and practices on the influenza A \(H1N1\) pandemic.](#)

Hsu LY. Ann Acad Med Singapore. 2010 Apr;39(4):336-2. No abstract available. PMID: 20473462

[2009 Pandemic influenza H1N1: paediatric perspectives.](#)

Lee HY, Wu CT, Lin TY, Chiu CH. Ann Acad Med Singapore. 2010 Apr;39(4):333-3. PMID: 20473461

[Severe infection with H1N1 requiring intensive care--lessons for preparedness programmes.](#)

Chien JM, Tan BH, Yang KS, Tan TT, Low CY, Kurup A, Leong HN, Low JG, Kang ML, Chlebicki MP, Koh YL. Ann Acad Med Singapore. 2010 Apr;39(4):328-5. PMID: 20473460

[International health regulations: lessons from the influenza pandemic in Singapore.](#)

Low CL, Chan PP, Cutter JL, Foong BH, James L, Ooi PL. Ann Acad Med Singapore. 2010 Apr;39(4):325-3. PMID: 20473459

[Influenza A \(H1N1-2009\) pandemic in Singapore--public health control measures implemented and lessons learnt.](#)

Tay J, Ng YF, Cutter JL, James L. Ann Acad Med Singapore. 2010 Apr;39(4):313-12. PMID: 20473458

[Survey of healthcare workers' attitudes, beliefs and willingness to receive the 2009 pandemic influenza A \(H1N1\) vaccine and the impact of educational campaigns.](#)

Thoon KC, Chong CY. Ann Acad Med Singapore. 2010 Apr;39(4):307-6. PMID: 20473457

[Attitudes of patients, visitors and healthcare workers at a tertiary hospital towards influenza A \(H1N1\) response measures.](#)

Tan WM, Chlebicka NL, Tan BH. Ann Acad Med Singapore. 2010 Apr;39(4):303-4.PMID: 20473456

[Outbreak of novel influenza A \(H1N1-2009\) linked to a dance club.](#)

Chan PP, Subramony H, Lai FY, Tien WS, Tan BH, Solhan S, Han HK, Foong BH, James L, Ooi PL. Ann Acad Med Singapore. 2010 Apr;39(4):299-4.PMID: 20473455

[Obstetric outcomes of influenza A H1N1 \(2009\) infection in pregnancy--experience of a Singapore tertiary hospital.](#)

Lim ML, Lim WY, Tee NW, Lim SH, Chee JJ. Ann Acad Med Singapore. 2010 Apr;39(4):295-4. PMID: 20473454

[Tracking the emergence of pandemic Influenza A/H1N1/2009 and its interaction with seasonal influenza viruses in Singapore.](#)

Tang JW, Lee CK, Lee HK, Loh TP, Chiu L, Tambyah PA, Koay ES. Ann Acad Med Singapore. 2010 Apr;39(4):291-4. PMID: 20473453

[An epidemiological study of 1348 cases of pandemic H1N1 influenza admitted to Singapore Hospitals from July to September 2009.](#)

Subramony H, Lai FY, Ang LW, Cutter JL, Lim PL, James L. Ann Acad Med Singapore. 2010 Apr; 39(4):283-8.PMID: 20473452

[Outbreak of pandemic influenza A \(H1N1-2009\) in Singapore, May to September 2009.](#)

Cutter JL, Ang LW, Lai FY, Subramony H, Ma S, James L. Ann Acad Med Singapore. 2010 Apr; 39(4):273-10.PMID: 20473451

[Pandemic \(H1N1\) 2009: clinical and laboratory findings of the first fifty cases in Singapore.](#)

Chan M, Chen MI, Chow A, Lee CP, Tan AS, Lye DC, Leo YS. Ann Acad Med Singapore. 2010 Apr;39(4):267-6.PMID: 20473450

[The influenza A \(H1N1\) 2009 pandemic in Singapore.](#)

Hsu LY, Heng DM, Leo YS. Ann Acad Med Singapore. 2010 Apr;39(4):265-2. No abstract available. PMID: 20473449

[Potential pediatric intensive care unit demand/capacity mismatch due to novel pH1N1 in Canada.](#)

Stiff D, Kumar A, Kissoon N, Fowler R, Jouvet P, Skippen P, Smetanin P, Kesselman M, Veroukis S. Pediatr Crit Care Med. 2010 May 13. [Epub ahead of print]PMID: 20473239

[Reversible Splenic Lesion Associated With Novel Influenza A \(H1N1\) Viral Infection.](#)

Iwata A, Matsubara K, Nigami H, Kamimura K, Fukaya T. Pediatr Neurol. 2010 Jun;42(6): 447-450.PMID: 20472201

[Genetic sequence analysis of influenza viruses and illness severity in ill children previously vaccinated with live attenuated or inactivated influenza vaccine.](#)

Yang CF, Belshe RB, Kemble G, Song E, Ye D, Liang B, Yi T, Ambrose CS, Coelingh K, Walker RE. Vaccine. 2010 May 13.

[Seasonal and Pandemic A \(H1N1\) 2009 influenza vaccination coverage and attitudes among health-care workers in a Spanish University Hospital.](#)

Vírseda S, Restrepo MA, Arranz E, Magán-Tapia P, Fernández-Ruiz M, de la Cámara AG, Aguado JM, López-Medrano F. Vaccine. 2010 May 12.

[Recombinant H1N1 virus-like particle vaccine elicits protective immunity in ferrets against the 2009 pandemic H1N1 influenza virus.](#)

Pushko P, Kort T, Nathan M, Pearce MB, Smith G, Tumpey TM. Vaccine. 2010 May 11. [Epub ahead of print]

[Aerosol influenza transmission risk contours: A study of humid tropics versus winter temperate zone.](#)

Hanley BP, Borup B. Virol J. 2010 May 14;7(1):98.

[Tuberculosis Control: Lessons for Outbreak Preparedness in Correctional Facilities.](#)

Parvez FM, Lobato MN, Greifinger RB. J Correct Health Care. 2010 May 12. [Epub ahead of print]

[\[Outbreak of influenza pandemic virus A\(H1N1\) 2009 infections in Emergency Department, Saint-Pierre, Reunion Island, July-August 2009.\]](#)

Staikowsky F, D'Andréa C, Filleul L, Guisérix J, Vanhecke C, Winer A, Michault A. Presse Med. 2010 May 11. [Epub ahead of print] French.

[Optimal pandemic influenza vaccine allocation strategies for the Canadian population.](#)

Tuite AR, Fisman DN, Kwong JC, Greer AL. PLoS One. 2010 May 6;5(5):e10520.

[Pandemic influenza A\(H1N1\) 2009 breakthrough infections and estimates of vaccine effectiveness in Germany 2009-2010.](#)

Wichmann O, Stocker P, Poggensee G, Altmann D, Walter D, Hellenbrand W, Krause G, Eckmanns T. Euro Surveill. 2010 May 6;15(18). pii: 19561.

[Clinical and Microbiologic Features Associated With Novel Swine-Origin Influenza A Pandemic 2009 \(H1N1\) Virus in Children: A Prospective Cohort Study.](#)

Bryant PA, Tebruegge M, Papadakis G, Clarke C, Barnett P, Daley AJ, South M, Curtis N. Pediatr Infect Dis J. 2010 May 7. [Epub ahead of print]

[Image findings of patients with H1N1 virus pneumonia and acute respiratory failure.](#)

Henzler T, Meyer M, Kalenka A, Alb M, Schmid-Bindert G, Bartling S, Schoepf JU, Schoenberg SO, Fink C. Acad Radiol. 2010 Jun;17(6):681-5.

[Rapid clinical diagnosis of Legionnaires' disease during the "herald wave" of the swine influenza \(H1N1\) pandemic: the Legionnaires' disease triad.](#)

Cunha BA, Mickail N, Syed U, Strollo S, Laguerre M. Heart Lung. 2010 May-Jun;39(3):249-59.

[Legionnaires' disease mimicking swine influenza \(H1N1\) pneumonia during the "herald wave" of the pandemic.](#)

Cunha BA, Klein NC, Strollo S, Syed U, Mickail N, Laguerre M. Heart Lung. 2010 May-Jun;39(3):242-8.

[Factors in association with acceptability of A/H1N1 vaccination during the influenza A/H1N1 pandemic phase in the Hong Kong general population.](#)

Lau JT, Yeung NC, Choi KC, Cheng MY, Tsui HY, Griffiths S. Vaccine. 2010 May 7. [Epub ahead of print]

[The effect of natural health products and traditional medicines on the activity of human hepatic microsomal-mediated metabolism of oseltamivir.](#)

Liu R, Tam TW, Mao J, Saleem A, Krantis A, Arnason JT, Foster BC. J Pharm Pharm Sci. 2010;13(1):43-55.

[The impact of H1N1 influenza A virus pandemic on the blood donations in Hyogo Prefecture, Japan.](#)

Tsubokura M, Nakada H, Matsumura T, Kodama Y, Narimatsu H, Yamaguchi T, Kami M. Transfusion. 2010 May 3. [Epub ahead of print]

[Negotiating equitable access to influenza vaccines: global health diplomacy and the controversies surrounding avian influenza H5N1 and pandemic influenza H1N1.](#)

Fidler DP. PLoS Med. 2010 May 4;7(5):e1000247. No abstract available.

[An intervention to improve compliance with transmission precautions for influenza in the emergency department: successes and challenges.](#)

May L, Lung D, Harter K. J Emerg Med. 2010 May 6. [Epub ahead of print]

[Factors influencing the uptake of 2009 H1N1 influenza vaccine in a multiethnic Asian population.](#)

Wong LP, Sam IC. Vaccine. 2010 May 5. [Epub ahead of print]

[Swine flu: high mortality in cancer patients.](#)

Wiwanitkit V. Indian J Cancer. 2010 Apr-Jun;47(2):231. No abstract available.

[Differentiation of human influenza A viruses including the pandemic subtype H1N1/2009 by conventional multiplex PCR.](#)

Furuse Y, Odagiri T, Okada T, Khandaker I, Shimabukuro K, Sawayama R, Suzuki A, Oshitani H. J Virol Methods. 2010 May 4. [Epub ahead of print]

[Credit crunch, swine flu, the winter freeze - life pressures on the older adult.](#)

Newton J. Gerodontology. 2010 Mar;27(1):1-2. No abstract available.

[Information technology and global surveillance of cases of 2009 H1N1 influenza.](#)

Brownstein JS, Freifeld CC, Chan EH, Keller M, Sonricker AL, Mekaru SR, Buckeridge DL. N Engl J Med. 2010 May 6;362(18):1731-5. No abstract available.

[Clinical aspects of pandemic 2009 influenza A \(H1N1\) virus infection.](#)

Writing Committee of the WHO Consultation on Clinical Aspects of Pandemic (H1N1) 2009 Influenza, Bautista E, Chotpitayasunondh T, Gao Z, Harper SA, Shaw M, Uyeki TM, Zaki SR, Hayden FG, Hui DS, Kettner JD, Kumar A, Lim M, Shindo N, Penn C, Nicholson KG. N Engl J Med. 2010 May 6;362(18):1708-19. Review. No abstract available.

[Factors in vaccination intention against the pandemic influenza A/H1N1.](#)

Setbon M, Raude J. Eur J Public Health. 2010 May 5. [Epub ahead of print]

[Rapid Differentiation of Seasonal and Pandemic H1N1 Influenza through Proteotyping of Viral Neuraminidase with Mass Spectrometry.](#)

Schwahn AB, Wong JW, Downard KM. Anal Chem. 2010 May 5. [Epub ahead of print]

[Diagnostic accuracy of a rapid influenza test for pandemic influenza A H1N1.](#)

Gordon A, Videá E, Saborío S, López R, Kuan G, Balmaseda A, Harris E. PLoS One. 2010 Apr 28;5(4):e10364.

[Reduced Effectiveness of Oseltamivir in Children Infected With Oseltamivir-Resistant Influenza A\(H1N1\) Viruses With His275Tyr Mutation.](#)

Saito R, Sato I, Suzuki Y, Baranovich T, Matsuda R, Ishitani N, Dapat C, Dapat IC, Zaraket H, Oguma T, Suzuki H. *Pediatr Infect Dis J.* 2010 May 3. [Epub ahead of print]

[Respiratory failure caused by 2009 novel influenza A/H1N1 in a hematopoietic stem-cell transplant recipient: Detection of extrapulmonary H1N1 RNA and use of intravenous peramivir.](#)

Campbell AP, Jacob ST, Kuypers J, Wald A, Englund JA, Corey L, Boeckh M. *Ann Intern Med.* 2010 May 4;152(9):619-20. No abstract available.

[Intranasal administration of Lactobacillus rhamnosus GG protects mice from H1N1 influenza virus infection by regulating respiratory immune responses.](#)

Harata G, He F, Hiruta N, Kawase M, Kubota A, Hiramatsu M, Yausi H. *Lett Appl Microbiol.* 2010 Mar 29.

[Oral administration of lactobacilli from human intestinal tract protects mice against influenza virus infection.](#)

Kawase M, He F, Kubota A, Harata G, Hiramatsu M. *Lett Appl Microbiol.* 2010 Apr 5.