Influenza Update N° 158
27 April 2012

Summary

- Seasonal influenza activity has peaked in most countries in the temperate regions of the northern hemisphere.

- In North America, in general influenza transmission is low and decreasing for four consecutive weeks in the United States of America (USA) and for three weeks in Canada. Influenza A(H3N2) viruses have predominated during the current season nationally and in most regions of USA, whereas influenza B viruses continue to be the predominant in Canada. A(H1N1)pdm09 continued to co-circulate in Canada, USA and Mexico.

- In almost all European countries, their influenza season have peaked for several weeks now showing a continuously decreasing incidence of ILI /ARI, and a reduction in the number of SARI cases. Influenza A(H3N2) viruses have been predominant this season with increasing proportion of influenza B virus detection.

- Influenza activity in the temperate countries of Asia has shown an overall decrease. The proportion of influenza A(H3N2) virus detection has increased over influenza B in both northern China and Mongolia, but for Japan, influenza A(H3N2) viruses have been the predominant subtype throughout the season. In the Republic of Korea, influenza B viruses are still predominant over influenza A viruses.

- Influenza A(H1N1)pdm09 viruses were screened for susceptibility to neuraminidase inhibitors in nine countries in western Europe, and all tested were susceptible. However, in the USA, a slight increase to 2% in levels of resistance to oseltamivir has been noticed for influenza A(H1N1)pdm09 isolates.

Note: Global epidemiology and surveillance updates are periodically collected from data reported by National authorities or organization responsible for these reporting these data. For further information on specific influenza virus activity in the world visit the following pages (links are at the end of the document):

- Virological Update

![Map showing the percentage of respiratory specimens that tested positive for influenza by transmission zone](image-url)

**Note:** The available country data were joined in larger geographical areas with similar influenza transmission patterns to be able to give an overview (example: influenza surveillance/influenza_monitoring/update/). The displayed data reflect reports of the stated week, or up to two weeks before if no data were available for the current week of that data.

**Data Source:** WHO, 19 April 2012

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Countries in the temperate zone of the northern hemisphere

Overall, influenza activity in the northern hemisphere is decreasing. In some countries, including the United States of America and the United Kingdom, the 2011/2012 season was milder in comparison to previous influenza seasons. In other countries in Europe and northern Asia influenza activity has reached similar levels to previous years.

North America

This influenza season arrived later than most other seasons, and overall influenza activity in North America continues to decline. Influenza activity in Canada, appears to have peaked as most indicators of influenza activity continue to decline. During the past week, most regions continued to report sporadic influenza activity. The total number of outbreaks has decreased from 55 outbreaks in mid-March to 44 outbreaks in mid-April. ILI consultations rates were at their highest level during week 18-24 March (36 ILI visits per 1,000 patient visits) and declined to 27 ILI consultations per 1,000 patient visits this week. The highest consultation rate (59/1,000 visits) was observed in young children and adolescents (5-19 years old), followed by children under five years of age (with 55 per 1,000 visits). Among the 4,440 specimen tested in the week of 8-14 April, 19% (841) were positive for influenza, showing a slight decline since the past two weeks. A total of 118 new influenza-associated hospitalizations were reported this week (24 paediatric cases and 94 adult cases), 29 more cases than the previous week (89 influenza-associated hospitalizations). Since the start of the season, 1,219 influenza-associated hospitalizations were reported 31% of which were adults over 65 years of age. Ten influenza-associated fatalities, including one paediatric death were reported during the past week. A total of 841 respiratory specimens tested positive for influenza viruses. Influenza B virus accounted for 63% of the laboratory detections and remains the predominant virus type circulating in Canada since the beginning of the season. Most influenza deaths have also been associated with influenza type B. Out of the 308 influenza type A viruses detected during last week, 55% were subtyped: 69% of all influenza A viruses subtyped were A(H3N2) and the remaining 31% were A(H1N1)pdm09. From the beginning of the season, 900 influenza viruses were antigenically characterized; Of the 182 A(H3N2) viruses 90% were antigenically similar to A/Perth/16/2009 while 10% viruses showed reduced titers with antiserum produced against the vaccine strain. Of the 161 A(H1N1) viruses characterized 99.4% were antigenically similar to A/California/07/2009 and only one virus showed reduced titer with antiserum produced against A/California/07/2009. Of the 557 influenza B viruses characterized, 52% viruses were antigenically similar to the vaccine strain B/Brisbane/60/2008 (Victoria lineage); however 1 virus out of the 291 tested showed reduced titer with antiserum produced against B/Brisbane/60/2008. The remaining 48% influenza B viruses are antigenically related to the reference virus B/Wisconsin/01/2010-like, which belongs to the Yamagata lineage.

In the United States of America (USA), influenza activity declined nationally and most influenza data seem to indicate that the 2011/2012 season has been milder compared to previous seasons. The ILI consultation rate seems to have peaked without having passed the national baseline (2.4%) throughout this season. The number of respiratory specimens tested positive for influenza viruses has been declining since mid of March to 17% this week. Unlike two weeks ago, when six states reported low ILI activity, only two states experienced low ILI activity (Alaska and Oregon) from 8-14 April. New York City and 48 states experienced minimal ILI activity. The number of states reporting widespread activity has also decreased from ten to six in the last couple of weeks. The mortality from pneumonia and influenza reported in the 122 cities surveillance system continued to be below the epidemic threshold. Two paediatric deaths were reported over the last week. One was associated with influenza A(H1N1)pdm09 virus, and the other was associated with influenza A(H3N2) virus. A total of 15 influenza-associated paediatric deaths were reported during the 2011-2012 season, which is markedly less than the 2010-2011 season, when 122 paediatric deaths were reported, and the 2009/2010 season during which 282 paediatric deaths were reported. Between 1 October 2011 and 14 April 2012, 1,926 laboratory-confirmed influenza-associated hospitalizations were reported. Among these cases, 1,692 (87.9%) were influenza type A, 215 (11.2%) were influenza type B, and 4 (0.2%)
were influenza A and B co-infections; 15 (0.8%) had no virus type information. For those with influenza A subtype information, A(H3N2) accounted for 73% (664) and A(H1N1)pdm09 26% (238). The underlying medical conditions most commonly reported among hospitalized adults were chronic lung diseases, obesity, and metabolic disorders. While for children, the most commonly reported underlying medical conditions were chronic lung diseases, asthma, and neurologic disorders. Since the start of the season influenza A(H3N2) have remained predominant in the USA while influenza A(H1N1)pdm09 and influenza B continue to co-circulate. Out of 3,730 specimen tested, 653 (17.5%) tested positive for influenza. Influenza type A accounted for 81.6% of the positive samples and influenza type B accounted for 18.4%. 1,219 influenza viruses were antigenically characterized and 98.1% of the influenza A(H1N1)pdm09 viruses and 81.3% of the influenza A(H3N2) viruses and less than 50% of the influenza B type viruses are antigenically related to viruses contained in the current seasonal trivalent influenza vaccine. Antiviral resistance testing revealed that 2.1% of 609 influenza A(H1N1)pdm09 viruses were resistant to oseltamivir, but none of the 200 influenza A(H3N2) and influenza type B viruses.

Similarly to Canada and the USA, influenza activity in Mexico is decreasing, with detection of few samples of influenza A(H1N1)pdm09 and influenza B.

### Europe

Consultation rates for influenza-like illness (ILI) and acute respiratory infections (ARI) are generally low and, decreasing trends on influenza activity have been observed in Europe during the last three weeks. During week 9-15 April, only two countries have shown increasing trends—Belarus and Poland. Geographic spread remains very similar to that of the previous week. Croatia, Estonia and Sweden continued to report widespread influenza activity; 17 countries of the reporting states reported sporadic influenza activity; 12 countries reported local activity; The Russian federation reported regional spread and eight countries reported no activity of influenza. The number of specimen testing positive for influenza has been steadily decreasing over the last weeks, with 27% of 482 specimens from sentinel outpatient clinics testing positive for influenza viruses. The number of hospitalizations due to severe acute respiratory infection (SARI) reported by 10 countries in eastern Europe (Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, the Republic of Moldova, Romania, the Russian
federation, Serbia and Ukraine) is more or less stable but the influenza-positivity rate (12/95) of specimen collected from SARI patients has decreased over the last few weeks. Since the 2011/2012 influenza season started, 1,710 SARI cases, including 101 fatalities, have been reported by seven western European countries. During week 9-15 April, only two SARI cases related to influenza viruses were reported from these countries, one less than the previous week. The European Mortality Monitoring Project reports that mortality trends are back to normal levels among the elder population. However, excess mortality in people ≥ 65 years increased significantly during this 2011-2012 season, and this intensification concurred with influenza-related activity in Europe (See the European mortality bulletin). Four hundred and eighty two (482) sentinel specimens were tested for influenza viruses: 64% all influenza positive specimens were influenza A type and 37% were influenza B. Among the influenza A viruses subtyped, 94% of all viruses were A(H3N2) and 6% were influenza A(H1N1)pdm09. From the 1.122 influenza positive specimens from non-sentinel sources, influenza type A was predominant virus, accounting for 83% of all influenza cases. From the influenza A subtyped 96% were due to influenza A(H3N2) and 4% to A(H1N1)pdm09. Of all influenza A viruses subtyped from SARI patients, nine were influenza A(H3N2) and only one isolated was A(H1N1)pdm09. Of all genetic characterisations conducted during this season, 950 (88%) were influenza A(H3N2) viruses, and 65% out of those (617), fell within the A/Victoria/208/2009 clade, genetic group 3 represented by A/Stockholm/18/2011. Viruses falling within this genetic group are antigenically diverse, indicating that there is an imperfect match with the current vaccine virus A/Perth/16/2009. No resistance to oseltamivir has been reported from Europe this season. Consistent with previous weeks, all A(H1N1)pdm09 and A(H3N2) viruses screened for M2 susceptibility to the adamantanes class of antivirals were resistant.

Northern Africa and eastern Mediterranean

In the eastern Mediterranean and northern African region we have observed a low and decreasing influenza activity in the last few weeks following a peak at the end of 2011. Influenza A (H1N1)pdm09 viruses are currently predominant in this region due to increased activity in Oman. Some countries have also reported some influenza A(H3N2) viruses (Algeria and Tunisia) and influenza B viruses (Algeria, Iran, Oman and Tunisia).
Influenza transmission zone: Eastern Mediterranean

Number of specimens positive for influenza by subtype

Temperate countries of Asia

In the temperate countries of Asia, overall influenza activity has been declining. In northern China, the percentage of outpatient visits for ILI in sentinel hospitals was 2.7% in week 9-15 April, slightly lower than the previous weeks. The percentage of specimen testing positive for influenza has also decreased over the last weeks. In week 9-15 April from 293 specimen tested, 55 (18.8%) were positive for influenza. Although the season has been dominated by influenza B, the proportion of influenza A has further increased relative to influenza B and represented 67.3% of all positive samples in week 9-15 April. Of the 34 influenza A viruses subtyped, 23 were influenza A(H3N2) subtype and 11 influenza A(H1N1). In Mongolia, ILI activity has been decreasing in the past few weeks and is now below the upper national threshold (80%), with most ILI activity reported in children under 4 years of age. The proportion of patients with pneumonia among hospitalized patients has been declining in the last weeks but remains above the national average. The number of influenza positive samples in patients with pneumonia has also been decreasing. Similarly to northern China, there has been a transition from influenza B to influenza A predominance, mainly A(H3N2) but in recent weeks also influenza A(H1N1)pdm09. The Republic of Korea reported in week 25-31 March increased ILL activity with influenza B viruses remaining the predominant subtype. In Japan, influenza cases continued to decrease after peaking in early 2012 and are now reaching inter-seasonal levels. As opposed to other countries in the region, the predominant subtype this season was influenza A.
Countries in the tropical zone

Tropical countries of the Americas

Countries in the tropical South American region have reported low or undetectable levels of influenza transmission in the past few weeks. In Central America and the Caribbean influenza activity also remained low, with the exception of the Dominican Republic, where an increase in influenza A(H3N2) was reported.
Sub-Saharan Africa

In sub-Saharan Africa, only Burkina-Faso, Cameroon, Ethiopia, Kenya, Madagascar, Rwanda and Mauritius reported influenza activity in weeks 2-8 and 9-15 April 2012 but at low levels. Since the beginning of the year, influenza A(H3N2) has been predominant in DR Congo, Kenya, Mauritius and influenza A(H1N1)pdm09 in Ivory Coast, with influenza B being predominant in Niger, and Uganda. In Ethiopia, Ghana, Tanzania, Madagascar and Togo influenza A and influenza B have been identified in similar proportions in 2012.

Tropical Asia

Influenza activity in this region is decreasing or at low or undetectable levels. Although influenza B remains the most commonly detected influenza type in the region, a high proportion of influenza A(H1N1)pdm09 has been detected in India and Bangladesh in the past few weeks. In southern China, of the 1,074 specimen tested in week 9-15 April, 16% (174) were positive for influenza. Of the positive specimens, 67% were influenza A(H3N2), 17% were influenza A unsubtyped, and only 17% were influenza B, indicating an increase in the proportion of A(H3N2) cases in this region. Among the viruses tested for antiviral resistance since October 2011, all influenza A viruses were resistant to adamantane and sensitive to neuraminidase inhibitors; all influenza B viruses were sensitive to neuraminidase inhibitors. In China, Special Administrative Region Hong Kong, influenza activity continued to decrease. There have been 119 influenza-associated SARI cases from 13 January to 18 April 2012, 69 (58%) of which were fatal.

Countries in the temperate zone of the southern hemisphere

In the temperate regions of South America and Australia and New Zealand, ILI activity remained low at inter-seasonal levels.
Source of data

The Global Influenza Programme monitors influenza activity worldwide and publishes an update every two weeks.

The updates are based on available epidemiological and virological data sources, including FluNet (reported by the Global Influenza Surveillance and Response System) and influenza reports from WHO Regional Offices and Member States. Completeness can vary among updates due to availability and quality of data available at the time when the update is developed.

Link to web pages

Epidemiological Influenza updates:
http://www.who.int/influenza/surveillance_monitoring/updates/latest_update_GIP_surveillance
Epidemiological Influenza updates archives 2012
http://who.int/influenza/surveillance_monitoring/updates/GIP_surveillance_2012_archives

Virological surveillance updates:
http://www.who.int/influenza/gisrs_laboratory/updates/summaryreport
Virological surveillance updates archives:
http://www.who.int/influenza/gisrs_laboratory/updates

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