Influenza Update N° 176
04 January 2013

Summary

- Reporting of influenza activity has been irregular in the past two weeks due to the holiday season in many countries. As a result, overall virus detections reported have dropped off although in most countries in the northern temperate regions, influenza activity appears to have continued rising.

- Many countries of North America, Europe, north Africa, eastern Mediterranean and temperate Asia have reported increasing influenza activity over the past weeks. North China has started its influenza season.

- In tropical Asia, influenza activity was similar to previous weeks, with persistent low-level circulation.

- Influenza activity in sub-Saharan Africa has declined in most countries, with the exception of the Democratic Republic of Congo and Ghana.

- In the Caribbean, central America and tropical south America, influenza activity decreased to low levels, except for Bolivia, where there is increasing circulation of influenza A(H3N2).

- Influenza activity in countries of the southern hemisphere is currently at inter-seasonal levels.

- Several unconfirmed media stories have reported a number of deaths related to infection with influenza A(H1N1)pdm09 in different parts of the world. As with other seasonal influenza viruses, it is expected that some deaths would occur with infection, in particular now when influenza season starts in Northern Hemisphere. These reports at times refer to this A(H1N1)pdm09 virus as “swine flu”, causing some confusion with other viruses that recently reported in the United States. A(H1N1)pdm09 virus has been circulating in humans for more than 3 years and now is a seasonal human influenza virus.

Note: Global epidemiology and surveillance updates are periodically collected from data reported by National authorities or organizations responsible for reporting this data. For further information on specific influenza virus activity in the world and scientific literature for practitioners and other professionals in the field, please visit the links provided at the end of this document.
Reporting of influenza activity was irregular in the past week, due to the holiday season in many parts of the world, and only limited new information was available for this report.

Countries in the temperate zone of the northern hemisphere

North America

Influenza activity in North America has increased sharply since the last report with Canada and the United States both reporting widespread transmission of influenza.

Influenza activity in Canada continued to rise with increases in all indicators in the last two weeks. The influenza-like illness (ILI) consultation rate increased from 4% at the time of the previous report to 6.6%, with the highest rate observed in children <5 years old, followed by 5-19 year olds. The percentage of samples that tested positive for influenza also increased from 17.8% to 31.1%. In the last two weeks, 127 new influenza outbreaks were reported: 87 in long-term-care facilities, nine in hospitals, one in a school, and 30 in other facilities or communities. This represents a marked increase from the previous report of 22 outbreaks. 241 laboratory confirmed influenza associated hospitalizations were reported in five provinces; 97% (236/241) were influenza A, of which, half (117/236) were sub-typed. Of those with subtype information, 97.5% (114/117) were influenza A(H3N2) and 1.5% (3/117) were A(H1N1)pdm09. Just over half of these cases (51%, 123/241) were aged 65 years or older. Sixteen influenza associated deaths were reported in the last two weeks of 2012; all with influenza A.

Influenza A continued to predominate in Canada, with very few detections of influenza B. Of the respiratory specimens that were positive for influenza in the previous reporting week, 97.7% (4525/4632) were positive for influenza A, and 2.3% (107/4632) for influenza B. Of the influenza A viruses that were sub-typed, 97.4% (1164/1195) were A(H3N2) and 2.6% (31/1195) were A(H1N1)pdm09. Since the start of the season, the National Microbiology Laboratory has antigenically characterized 177 influenza viruses (136 A(H3N2), 17 A(H1N1)pdm09, and 24 influenza B). The 176 influenza A(H3N2) viruses were antigenically similar to the vaccine virus A/Victoria/361/2011. The 17 A(H1N1)pdm09 viruses were antigenically similar to the vaccine virus A/California/07/09. Among the influenza B viruses, 20 were antigenically similar to the vaccine virus B/Wisconsin/01/2010 (Yamagata lineage) and four were similar to B/Brisbane/60/2008 (Victoria lineage; component of the previous 2011-2012 seasonal influenza vaccine). None of the viral samples tested were resistant to the neuraminidase inhibitors oseltamivir (n=128) or zanamivir (n=127).

In the United States of America (USA), influenza activity has also been increasing and the Centers for Disease Control and Prevention reports that this is the earliest season in nearly a decade. ILI consultation rates increased from 4.2% to 5.6% in the previous week, while the percent of clinical specimens testing positive for influenza increased from 29.6% to 31.6%. Earlier in the season, the most active areas of influenza activity in terms of geographic spread was in the eastern half of the country; this has now increased to include almost all states, with the exception of the Pacific coast. Widespread influenza activity was reported by 41 states (compared to 31 previously). The proportion of deaths attributed to pneumonia and influenza has been under the epidemic threshold for most of the season. Two influenza-associated pediatric deaths were reported (compared to eight in the previous report); both were associated with influenza B viruses.

In the USA, the majority of influenza viruses detected were A(H3N2), however influenza B accounted for a larger proportion than in Canada. Of the 2961 influenza positive specimens in the last week of 2012, 79% were influenza A and 21% were influenza B. Of the influenza A viruses with sub-type information, 98% were A(H3N2). Since 1 October 2012, the CDC has antigenically characterized 413 influenza viruses. All 17 A(H1N1)pdm09 viruses tested were characterized as A/California/7/2009-like and 99.3% of the 279 A(H3N2) influenza viruses tested were A/Victoria/361/2011-like. Of the 115 influenza B viruses characterized 69% were B/Wisconsin/1/2010-like of the Yamagata lineage, the B virus component of this seasons trivalent influenza vaccine, and 31% were of the Victoria lineage. Since 1 October, none of the 526 A(H3N2), 39 A(H1N1)pdm09, or 226 B viruses have been resistant to neuraminidase inhibitors.
No new human infections of novel influenza A virus were reported in the last week. A total of 312 infections with variant influenza viruses have been reported from 11 states since July 2012. More information about H3N2v infections can be found at [http://www.cdc.gov/flu/swineflu/h3n2v-outbreak.htm](http://www.cdc.gov/flu/swineflu/h3n2v-outbreak.htm)

**Number of specimens positive for influenza by subtype in the Northern America transmission zone**

![Graph showing number of specimens positive for influenza by subtype in the Northern America transmission zone]

*Data source: FluNet ([www.who.int/flunet](http://www.who.int/flunet)), Global Influenza Surveillance and Response System (GISRS) Data generated on 05/01/2013*

**Europe**

Influenza activity in the Europe has increased, mainly in the northern and western part of the continent. Growing numbers of countries in different parts of the region reported increasing detections of influenza viruses, though overall reporting was reduced due to the holiday season. The European Centre for Disease Prevention and Control (ECDC) announced the start of the influenza season from the last week of November for the countries of the European Union and the European Economic Area (EU/EEA).

In EU/EEA countries, 25.3% of clinical samples were positive for influenza virus, a slight reduction from the previous week. The distribution of viruses types and subtypes in Europe was notably different from that observed in North America. Throughout Europe, since the beginning of the season, influenza A accounted for about 60% of influenza viruses detected and influenza B, 40%. However in contrast to North America, of the influenza A viruses that were subtyped, 51% (655/1293) were A(H3N2) and 49% (638/1293) were A(H1N1)pdm09. In the last week of December, influenza A(H1N1)pdm09 increased in proportion, relative to A(H3N2), making up 72% (139/194) of influenza A viruses from sentinel sources with subtype information in that week.

In the last week of December 2012, four countries (France, Italy, the Netherlands and Norway) reported medium intensity transmission. Previously this season, only France and Luxembourg had reported medium activity two weeks ago, and no countries had reported medium activity before that. The geographic spread of influenza activity was reported as widespread by Belgium, Denmark, France, Norway and the UK (England), regional by Italy, the Netherlands and the United Kingdom (Scotland), and sporadic by Estonia, Greece, Lithuania and Spain. Prior to the last two weeks, no countries had reported widespread activity.

Sentinel SARI hospitalization rates that were positive for influenza also increased with 42 laboratory-confirmed cases in four countries (Belgium, France, Ireland and the United Kingdom).
Since the end of September, seven countries (Denmark, England, Germany, Latvia, Portugal, Romania and Switzerland) have antigenically characterized 81 influenza viruses; six were A(H1N1)pdm09 A/California/7/2009 (H1N1)-like, 52 A(H3N2) A/Victoria/361/2011-like, 15 B/Wisconsin/1/2010-like (Yamagata lineage) and eight B/Brisbane/60/2008-like (Victoria lineage). None of the 28 A(H1N1)pdm09, 37 A(H3N2) and 16 B viruses tested in that period were resistant to the neuraminidase inhibitors, oseltamivir and zanamavir.

Number of specimens positive for influenza by subtype in the northern European transmission zone

![Graph showing influenza activity in northern Europe](image)

Data source: FluNet (www.who.int/flunet), Global Influenza Surveillance and Response System (GISRS)

Data generated on 05/01/2013

**Northern Africa and the eastern Mediterranean region**

Increasing influenza activity has been noted in North Africa and the Middle East. Bahrain and Jordan reported increasing circulation of influenza A(H1N1)pdm09, and Iran, Oman and Qatar have detected influenza A(H1N1)pdm09 and influenza B. Pakistan detected increasing levels of A(H3N2) and influenza B, while all three virus sub-types were in circulation in Algeria.
Influenza activity remained at low levels throughout the temperate region of Asia, however, ILI activity has increased for the fifth consecutive week in northern China. The proportion of outpatient visits at sentinel surveillance sites that were due to ILI increased to 3.9% compared to 3.2% in the previous report. China has officially announced the start of the influenza season in northern China. Four outbreaks were reported in the previous week, in Shanxi and Hubei Provinces, and there were no deaths attributed to acute respiratory infections. Influenza A accounted for 98% (188/192) of influenza viruses detected; 2% (4/192) were influenza B. Of the influenza A that were sub-typed, 81% were A(H3N2) and 19% were A(H1N1)pdm09. Among influenza viruses antigenically characterized by the Chinese National Influenza Center since October, 2012, 198 (100%) influenza A(H3N2) viruses are related to A/Victoria/361/2011(H3N2)-like; 69 (95.8%) influenza B/Victoria viruses are related to B/Brisbane/60/2008-like; 6 (100%) influenza B/Yamagata viruses are related to B/Wisconsin/01/2010-like. None of the influenza samples tested were resistant to the neuraminidase inhibitors, oseltamivir and zanamivir.

In Mongolia, influenza activity increased, due to influenza A(H3N2). Although ILI activity increased on the whole, there were marked inter-regional differences, with Selenge and Dornod provinces reporting the highest rates. While most ILI in recent weeks was associated with other respiratory viruses such as respiratory syncytial virus, rhinovirus and human coronaviruses, the increase in influenza positive samples in the last week accounted for approximately half of the ILI samples tested.

Influenza activity remained low in both Japan and the Republic of Korea, however, there is some evidence of increasing activity, with detections of influenza A(H3N2) in Japan, and A(H3N2) and A(H1N1)pdm09 in the Republic of Korea.
Number of specimens positive for influenza by subtype in the eastern Asia transmission zone

![Graph showing number of specimens positive for influenza by subtype in the eastern Asia transmission zone]

Data source: FluNet (www.who.int/flunet), Global Influenza Surveillance and Response System (GISRS)
Data generated on 05/01/2013

Countries in the tropical zone

Tropical countries of the Americas

In both central America and the Caribbean, detections of influenza declined to low levels from their peaks in late summer. Influenza A(H3N2) and influenza B were the most widely detected sub-types, with the exception of Cuba, which reported A(H1N1)pdm09.

Influenza activity throughout the tropical zone of south America continued to decline with low numbers of virus detections being reported in all countries, except the Plurinational State of Bolivia, which reported increasing circulation of influenza A(H3N2). Influenza A(H3N2) and influenza B were the most widely reported sub-types throughout the region.

Sub-Saharan Africa

Most countries in Sub-Saharan Africa experienced decreasing detections of influenza virus. However, Ghana continued to report circulation of predominantly influenza A(H1N1)pdm09 while in the Democratic Republic of Congo, there is increasing influenza activity from mainly influenza A(H1N1)pdm09. Zambia and Madagascar are also reporting low-level detections of influenza B virus.
Number of specimens positive for influenza by subtype in the middle Africa transmission zone

Data source: FluNet ([www.who.int/flunet](http://www.who.int/flunet)), Global Influenza Surveillance and Response System (GISRS)
Data generated on 04/01/2013

**Tropical Asia**

Influenza activity in most countries of south east Asia has remained similar to previous weeks, with continuing low-level circulation in Cambodia, Lao PDR, Sri Lanka, Thailand and Viet Nam.

India continued to report declining influenza positive samples from its peak in mid-September of mainly A(H1N1)pdm09, and is now at inter-seasonal levels. Sri Lanka reported persistent circulation of all three influenza sub-types, while A(H3N2) and influenza B viruses were detected in Cambodia and Thailand. Similar to previous weeks, transmission of predominantly influenza B virus was reported in Viet Nam.

Influenza activity in Singapore and southern China, including Hong Kong SAR, remained below seasonal thresholds. In Singapore and southern China, half of the influenza virus positive samples were A(H3N2), and in Hong Kong SAR, 62% (28/45) were attributed to influenza A(H1N1)pdm09, and 4% influenza B. In southern China, influenza B detections increased.
Number of specimens positive for influenza by subtype in the south east Asia transmission zone

Data source: FluNet (www.who.int/flunet), Global Influenza Surveillance and Response System (GISRS)
Data generated on 05/01/2013

Countries in the temperate zone of the southern hemisphere

Influenza activity in all temperate countries of the southern hemisphere is now at inter-seasonal levels.

Number of specimens positive for influenza by subtype in the southern hemisphere

Data source: FluNet (www.who.int/flunet), Global Influenza Surveillance and Response System (GISRS)
Data generated on 05/01/2013

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://www.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:

Contact
fluupdate@who.int