Influenza Update N° 180

1 March 2013

Summary

- Influenza activity in North America continued to decrease overall, though activity remained high in some areas. The proportion of influenza B increased slightly, but influenza A(H3N2) was still the most commonly detected virus subtype. The season has been more severe than average in the United States of America, with notably high number of pneumonia and influenza-related hospitalizations among adults aged 65 years and older.

- Influenza activity in Europe decreased in some northern and western countries but continued to increase in the eastern part of the region. While influenza A(H1N1)pdm09 was the most commonly detected virus overall, notable exceptions included Denmark, Ireland and the United Kingdom, which reporting much more influenza A(H3N2) and influenza B than the rest of Europe, and Bulgaria, Italy, and Spain which reported more influenza B than A. Excess mortality for the 14 countries reporting to the European Mortality Monitoring project has been higher than average for individuals over the age of 65 years but not as high as the previous two seasons.

- Influenza activity throughout the temperate region of Asia decreased except in Mongolia where it appears to have reached a peak.

- Only low levels of influenza activity were reported across the tropical regions of the world and activity in countries of the southern hemisphere remained at inter-seasonal levels.

- The WHO Consultation on the Composition of Influenza Virus Vaccines for the Northern Hemisphere 2013–2014 took place during the third week of February, and updates to the A(H3N2) and B/Yamagata lineage components were recommended. The full report can be found at: http://www.who.int/influenza/vaccines/virus/recommendations/2013_14_north/en/
Countries in the temperate zone of the northern hemisphere

North America

Overall influenza activity in North America continued to decrease during the second week of February since peaking in early January but still remained high in some areas of Canada and the United States of America (USA).

In Canada, the number of laboratory-confirmed cases decreased from the previous week and many regions reported localized or sporadic activity. The national influenza-like illness (ILI) consultation rate had continued to decrease from the peak during the last week of 2012 from 67.1% to 38.0% during the third week of February. The percentage of ILI patients who were influenza-positive decreased from 17.0% in the previous week to 15.2%. The number of outbreaks reported in hospitals, long-term care facilities, and schools, was 45, a continued decrease from the peak of more than 120 during the second week of January. 3,116 influenza-associated hospitalizations have been reported this season through the Aggregate Surveillance System (a subset of all influenza admissions in Canada) compared to a total of 1,777 reported for the entire previous season. More than half (57.2%) of the cases with available age data were aged ≥65 years and 13.4% were children aged 0-4 years. Since the beginning of the 2012-13 season, 217 deaths have also been reported, 83.0% (169/203) of which were aged ≥65 years. Among 597 influenza-associated pediatric admissions under the age of 16 years reported through the Immunization Monitoring Program Active (IMPACT) network since the beginning of the season, 43.3% (240/542) were under the age of 24 months.

Of the 926 influenza viruses detected in the third week of February in Canada, 86.8% were identified as influenza A and 13.2% were identified as influenza B. Of the influenza A viruses with subtype information, 78.2% were A(H3N2) and 21.8% A(H1N1)pdm09. Comparatively higher proportions of influenza B were reported in western provinces of Canada. Among pediatric hospitalizations reported since the start of the season, 92.8% (554/597) have been associated with influenza A and 7.2% (43/597) with influenza B. Since the start of the season, the National Microbiology Laboratory has antigenically characterized 569 influenza viruses (405 A(H3N2), 76 A(H1N1)pdm09, and 88 influenza B. Of these, all influenza A(H3N2) and A(H1N1)pdm09 viruses were antigenically similar to the vaccine viruses A/Victoria/361/2011 and A/California/07/09 respectively, and among 88 influenza B specimens, 73 and 15 were antigenically similar to B/Wisconsin/01/2010 and B/Brisbane/60/2008 respectively. In the 2012-13 season, none of the approximately 1,031 influenza viruses that have been tested against oseltamivir and zanamivir have shown resistance.

In the USA, influenza activity decreased in most areas since peaking in late December to early January but still remained high in the third week of February. Nationally, the proportion of ILI outpatient consultations has decreased to 2.8% from the peak of 6.1% in the last week of 2012. The proportion of clinical ILI specimens testing positive for influenza also declined to 16.8% from the peak of 37.6% at the end of 2012. In the third week of February, 22 states reported widespread geographic influenza activity, compared to 38 in the previous report. The proportion of all deaths attributed to pneumonia and influenza (P&I) reported through the 122 Cities Mortality Reporting System decreased to 8.6% in the third week of February, from the peak of 9.8% in the fourth week of January, which is still above the epidemic threshold of 7.5%. In the previous 10 years period, the highest reported peak of P&I mortality was 9.1% in the 2007-8 influenza season. In addition, 78 influenza-related paediatric deaths have been reported so far this season, compared to 34 for the entire season in 2011-12, 122 in 2010-11, and 282 during the winter season of the 2009-10 influenza pandemic.

A total of 9,531 laboratory-confirmed influenza-related hospitalizations have been reported since the beginning of the season (cumulative rate of 34.2/100,000 population). It is notably higher than the previous three seasons (8.6, 21.4, and 29.0/100,000 population for the 2011-12, 2010-11, 2009-10 seasons respectively). The rate for individuals hospitalized for influenza over age 65 years was markedly higher than for other age groups, reaching 154.3/100,000 compared to year-end cumulative totals of 25.3, 64.0, and 30.5/100,000 for the years 2009-10, 2010-11, and 2011-12 respectively. The rate for other age groups remained at expected levels from previous years. Of 58,307 influenza viruses tested since the beginning of the season, 78.6% were influenza A and 21.4% were influenza B. In contrast to Canada, where 96.5% of the all confirmed specimens were influenza A. Since the beginning of the 2012-13 influenza season, the Centers for Disease Control and Prevention has
antigenically characterized 1,185 influenza viruses. All 86 A(H1N1)pdm09 viruses tested were characterized as A/California/7/2009-like and 99.5% (740/744) of the A(H3N2) influenza viruses tested were A/Victoria/361/2011-like, both of which are components of the 2012-13 Northern Hemisphere trivalent influenza vaccine. Of the 255 influenza B viruses tested, 70.8% (241/355) were characterized as B/Wisconsin/1/2010-like of the Yamagata lineage, a component of this season’s trivalent influenza vaccine, and 29.2% (114/355) were of the Victoria lineage. Since the beginning of the season, none of the tested 1,193 influenza A(H3N2) and 419 influenza B viruses were resistant to the neuraminidase-inhibitors, oseltamivir and zanamivir. Two oseltamivir-resistant A(H1N1)pdm09 virus have been reported out of 274 tested in this season.

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

Europe

Influenza activity in Europe continued to increase in the eastern part of the region but started to decrease in some northern and western countries. The influenza season appears to have peaked for the continent but not in all countries, particularly in the east. The proportion of influenza-positive sentinel specimens decreased slightly from the previous report to 50% (1313/2634), down from a season-high 52% three weeks earlier (60% in the European Union countries). The weekly number of severe acute respiratory infection (SARI) hospitalizations, which are primarily reported by countries in the eastern part of the region, reached the highest level this season in the second week of February. While more countries during the third week of February, mainly in the western and northern parts of the region, indicated decreasing activity compared to the previous report, the majority of countries still reported medium intensity and widespread circulation. Belgium, Germany, Romania, the Russian Federation, and Switzerland reported high-intensity transmission while 4 (including Poland and the United Kingdom) reported low intensity, with the rest reporting medium. Some countries (such as Norway, Poland and the United Kingdom) seem to have experienced peaks in ILI activity earlier in the season compared to other countries whose peaks haven’t yet or are just now being seen and a number of countries are still reporting increasing trends in influenza like illness or acute respiratory infections.

Pooled numbers of all-cause deaths reported by 14 countries participating in the European Mortality Monitoring project showed excess mortality among people aged 65 and older which peaked at levels above average but well below levels seen in the previous three seasons. No similar pattern in excess mortality was observed in younger age groups so far this season. The highest increase and longest sustained excess mortality was seen in Denmark, where previous influenza activity shifted from A(H3N2) dominance to influenza B.
Influenza A, primarily A(H1N1)pdm09, continued to be the most commonly detected virus across the continent, however, there has been some regional variation. During the 2012-2013 influenza season 47,426 influenza viruses were detected and typed, of which 69% (32,556/47,426) were influenza A and 31% (14,870/47,426) were influenza B. These proportions have remained relatively consistent since the beginning of the season. Bulgaria, Italy, and Spain, however, reported more influenza B than A. Denmark, Ireland and the United Kingdom reported much more influenza A(H3N2) and influenza B than the rest of Europe. Of the 20,778 influenza A viruses subtyped across the continent, 73% (15,103/20,778) were A(H1N1)pdm09 and 27% (5,675/20,778) were A(H3N2). Since the start of the 2012-13 season, the majority of viruses characterized by 13 countries were antigenically similar to the viruses included in the current Northern Hemisphere seasonal influenza vaccine.

Most influenza viruses since the start of the 2012-2013 season, only 1 virus carrying the neuraminidase H275Y amino acid substitution, causing resistance to oseltamivir, was detected in the Netherlands. All other viruses tested have been susceptible to the neuraminidase inhibitors.

**Number of specimens positive for influenza by subtype in the European Region**

Data source: FluNet (www.who.int/flunet). Global Influenza Surveillance and Response System (GISRS) Data generated on 27/02/2013

**Northern Africa**

Across the northern Africa region the number of positive influenza specimens reported has continued to decrease with minor fluctuations over the past few weeks. However, some individual countries have shown increases such as Algeria and Tunisia, which have both been reporting co-circulation of influenza A(H1N1)pdm09 and influenza B.
Influenza activity decreased in much of the temperate region of Asia. In northern China, the Republic of Korea, and Japan ILI activity and the percentage of ILI specimens testing positive for influenza declined for three or more weeks. Activity in Mongolia has remained persistently high and has not yet appeared to decrease.

Although influenza A(H3N2) has been the most commonly detected virus in most of northern Asia in this season, accounting for nearly all of the viruses detected in Japan, influenza A(H1N1)pdm09 has increased in recent weeks in northern China. In the second week of February, all of the 47 influenza viruses detected were influenza A. Of those, 63.8% (30/47) were A(H1N1)pdm09 and 36.2% (17/47) were A(H3N2). Among influenza viruses antigenically characterized by the Chinese National Influenza Center since the beginning of the 2012-13 season, 99.2% (119/120) of influenza A(H1N1)pdm09 and 100% (495) of A(H3N2) were related to A/California/7/2009-like and A/Victoria/361/2011(H3N2)-like respectively. For influenza B viruses, 98.4% (124) of influenza B/Victoria viruses and 100% (20) of influenza B/Yamagata viruses were related to B/Brisbane/60/2008-like and B/Wisconsin/01/2010-like respectively. None of the influenza specimens tested were resistant to the neuraminidase inhibitors, oseltamivir and zanamivir.

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

Data generated on 27/02/2013
Countries in the tropical zone

Tropical countries of the Americas/Central America and the Caribbean

In both Central America and the Caribbean, influenza activity was similar or decreased compared to previous weeks and continued to decrease from their peaks in late summer. In general, most ILI and ARI cases were reported to be non-influenza illnesses, with RSV and rhinovirus as the most commonly reported infections. Very low numbers of influenza A(H1N1)pdm09, A(H3N2) and B were detected.

In Tropical South America, acute respiratory disease activity remained low. Brazil reported small numbers of influenza A(H3N2) and B.
Number of specimens positive for influenza by subtype in the Tropical South America Transmission Zone

Data source: FluNet (www.who.int/flunet). Global Influenza Surveillance and Response System (GISRS) Data generated on 27/02/2013

Central African tropical region

Most countries in the Central African tropical area experienced low detections of influenza, while in Cameroon and Madagascar, slight but continuous circulation of Influenza B was reported.

Number of specimens positive for influenza by subtype in the middle African transmission zone

Data source: FluNet (www.who.int/flunet). Global Influenza Surveillance and Response System (GISRS) Data generated on 27/02/2013
Influenza activity in most countries of South East Asia has remained similar to previous weeks, with slight decreasing and low-level circulation in Cambodia, India, Sri Lanka, and Thailand.

India reported relatively low numbers of A(H1N1)pdm09 and even fewer influenza B, while Sri Lanka continued to report co-circulation of all three types/subtypes in nearly equal proportions. Thailand also reported moderate numbers of A(H3N2) and influenza B. Numbers of viruses detected in South East Asia were very low.

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.

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 :

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