



## Summary

### Week 48/2016 (28 November-4 December 2016)

- Influenza activity remained low, but has started to increase in some countries.
- The proportion of virus detections among sentinel surveillance specimens increased to 19% and indicates increasing regional activity.
- The majority of influenza viruses detected for this week were subtype A(H3N2).
- Laboratory-confirmed influenza cases from hospital settings are increasing in some countries.

#### **Season overview**

- In week 46/2016, influenza virus detections increased to 10% among sentinel surveillance specimens. This is the earliest week in a season that the positivity rate has reached 10% since the emergence of A(H1N1)pdm09 viruses in the 2009-2010 influenza season; during the last six seasons this occurred between weeks 48 and 51.
- Since week 40/2016, influenza A viruses have predominated; the great majority (98%) of subtyped influenza A viruses from sentinel sites have been H3N2.

## **Primary care data**

### Influenza activity

Influenza activity increased further in some countries in week 48/2016. Of 26 countries across the Region that tested at least 10 sentinel specimens, 15 reported influenza virus positivity rates above 10%. Influenza virus detections have been reported across the region by countries in eastern, northern, southern and western Europe, as well as in the Caucasus and central Asia.

While the percentage of influenza virus detections has increased among sentinel specimens, overall influenza activity is at low levels with 37 countries reporting low intensity and seven countries reporting medium intensity (Fig. 1). Notably, Georgia and Kyrgyzstan reported medium intensity and high proportions of sentinel samples positive for influenza (70% and 86%, respectively). Of the 36 countries reporting any geographic spread of influenza, the majority are still reporting sporadic activity (n=23) while some report widespread (the Netherlands and Croatia), regional (n=6) and local activity (n=5) (Fig. 2).

### Map of qualitative indicators in the European Region



#### Fig. 1. Intensity in the European Region, week 48/2016





For interactive maps of influenza intensity and geographic spread, please see the Flu News Europe <u>website</u>.

### Viruses detected in sentinel-source specimens (ILI and ARI)

In week 48/2016, 261 of 1378 (19%) sentinel specimens tested positive for influenza virus (

Table 1). Of these, 91% were type A and 9% were type B. The great majority (97%) of subtyped influenza A viruses were H3N2. The lineage of 21 of 23 influenza B viruses was determined, of which 48% were B/Victoria lineage and 52% were B/Yamagata lineage. Among countries that tested at least 10 sentinel specimens, Belarus, Croatia, France, Georgia, Ireland, Israel, Italy, Kyrgyzstan, the Netherlands, Norway, Portugal, Republic of Moldova, Spain, Sweden and Switzerland reported percentages of influenza virus detections above 10%. Notably, Kyrgyzstan reported 83 of 96 (86%) sentinel specimens testing positive for influenza virus and accounted for 32% of sentinel detections throughout the Region.

Similar distributions of types and subtypes have been observed since week 40/2016: of all typed viruses, 90% were type A, with 98% of those subtyped being H3N2 viruses (Fig. 3;

Table 1). Of the influenza B viruses which have been ascribed a lineage, 60% were of the B/Victoria lineage and 40% were of the B/Yamagata lineage.

# Fig. 3. Influenza virus detections in sentinel-source specimens by type and subtype, by week and cumulatively



Table 1. Influenza virus detections in sentinel-source specimens by type andsubtype, week 48/2016 and cumulatively

	Number of detections	
Virus type and subtype	Current Week	Season 2016-2017
Influenza A	238	692
A(H1N1)pdm09	6	11
A(H3N2)	198	605
A not subtyped	34	76
Influenza B	23	73
B/Victoria lineage	10	25
B/Yamagata lineage	11	17
Unknown lineage	2	31
Total detections (total tested)	261 (1378)	765 (8483)

## Severity

For week 48/2016, several countries reported laboratory-confirmed influenza cases based on hospital surveillance, with the majority of influenza cases being reported by Armenia and Kyrgyzstan.

For week 48/2016, of those countries, territories and regions that conduct surveillance based on sentinel severe acute respiratory infections (SARI), 172 influenza virus-positive SARI cases were reported. Of these, 76% were reported from Kyrgyzstan (n=63), Armenia (n=46) and Ukraine (n=21). Of all influenza cases reported, 152 (88%) were infected by type A viruses with 136 being H3N2 and 16 not subtyped. The 20 influenza B viruses were not ascribed to a lineage. A(H3N2) viruses were detected in all Armenian SARI cases.

For week 48/2016, of those countries, territories and regions that conduct surveillance based on hospitalized laboratory-confirmed influenza cases in intensive care units (ICU) or other wards, 5 cases in total (2 A, 2 A(H3N2), 1 B) were reported in ICU by France and Spain, and 12 cases in total (11 A, 1 A(H3N2)) were reported in other wards by Ireland and Spain.

Since week 40/2016, Ireland, Spain and the United Kingdom have reported 67 cases in other wards; 47 infected with type A and 5 with type B influenza virus. In total, France, Finland, Spain and Sweden have reported 25 cases from ICU; 21 infected with type A and three with type B influenza virus.

### **Mortality monitoring**

Pooled analysis of data from 18 EU/EEA countries or regions reporting to the <u>EuroMOMO</u> project indicated that all-cause mortality was within normal, expected levels during recent weeks.

### Viruses detected in non-sentinel-source specimens

For week 48/2016, 1 227 specimens from non-sentinel sources (such as hospitals, schools, non-sentinel primary care units, nursing homes and other care institutions) tested positive for influenza viruses (Table 2). Similar to the previous week, 97% were type A and 3% type B, with 98% of the subtyped influenza A viruses being A(H3N2).

Similar distributions of types and subtypes have been observed since week 40/2016 with A(H3N2) viruses being dominant throughout Europe (Table 2). The distribution of viruses is similar to that of sentinel surveillance data with 94% type A and 6% type B viruses. For the majority of viruses, no subtype or lineage was determined; however, 95% of the subtyped influenza A viruses were A(H3N2). Of 12 type B viruses ascribed to a lineage, 5 were B/Yamagata lineage and 7 were B/Victoria lineage.

	Number of detections	
Virus type and subtype	Current Week	Season 2016-2017
Influenza A	1189	3140
A(H1N1)pdm09	7	50
A(H3N2)	337	1002
A not subtyped	845	2088
Influenza B	38	183
B/Victoria lineage	0	7
B/Yamagata lineage	1	5
Unknown lineage	37	171
Total detections (total tested*)	1227 (13000)	3323(91037)

# Table 2. Influenza viruses detected in non-sentinel-source specimens, by virus(sub)type, week 48/2016 and cumulatively

\* Not all countries have a true non-sentinel testing denominator and these figures are likely to be an underestimate.

## **Virus characteristics**

### **Genetic characterization**

The new genetic reporting categories for the 2016-2017 season are available and reporting of genetic characterization data has been possible since week 46/2016. For specimens collected since week 40/2016, genetic characterization of 93 viruses has been reported (Table 3). Among A(H3N2) viruses equal proportions of clade 3C.2a, the vaccine component clade, and 3C.2a1 clade viruses (defined by N171K often with N121K amino acid substitution in haemagglutinin) viruses have been found. These two clades are antigenically similar.

Table 3. Viruses attributed to genetic groups, cumulative for weeks 40–48/2016

Phylogenetic group	Number of viruses
A(H1N1)pdm09 A/Michigan/45/2015 (clade 6B.1) <sup>b</sup>	3
A(H3N2) A/Hong Kong/4801/2014 (clade 3C.2a) <sup>a,b</sup>	44
A(H3N2) A/Bolzano/7/2016 (clade 3C.2a1)	44
A(H3N2) A/Perth/16/2009grA/Switzerland/9715293/2013 (clade 3C.3a)	1
B/Brisbane/60/2008 (Victoria lineage clade 1A) <sup>a,b</sup>	1
<sup>a</sup> Vaccine component for Northern Hemisphere 2016-2017 season	

<sup>b</sup> Vaccine component for Southern Hemisphere 2017 season

The ECDC summary report for <u>September 2016</u> provides detailed genetic and antigenic analyses of viruses collected between January and June 2016.

The recommended composition of trivalent influenza vaccines for the 2016-2017 season in the <u>northern hemisphere</u> is for inclusion of an A/California/7/2009 (H1N1)pdm09-like virus; an A/Hong Kong/4801/2014 (H3N2)-like virus; and a B/Brisbane/60/2008-like virus (B/Victoria lineage). For quadrivalent vaccines a B/Phuket/3073/2013-like virus (B/Yamagata lineage) virus is recommended. The recommended influenza A(H1N1)pdm09 component of the 2017 <u>southern hemisphere</u> influenza vaccine is an A/Michigan/48/2015 (H1N1)pdm09-like virus, the first update since A(H1N1)pdm09 viruses emerged in 2009.

### Antiviral susceptibility testing

Neuraminidase inhibitor susceptibility has been assessed for 74 viruses (69 A(H3N2), 4 A(H1N1)pdm09 and 1 type B) with collection dates from week 40/2016. None showed evidence of reduced inhibition.

This weekly update was prepared by an editorial team at the European Centre for Disease Prevention and Control (Cornelia Adlhoch, Eeva Broberg, René Snacken) and the WHO Regional Office for Europe (Caroline Brown, Piers Mook, Dmitriy Pereyaslov and Tamara Meerhoff, Temporary Advisor to WHO). It was reviewed by country experts (AnnaSara Carnahan, Public Health Agency, Sweden; Veronica Eder, National Public Health Center, Republic of Moldova), and by experts from the network (Adam Meijer, National Institute for Public Health and the Environment (RIVM), the Netherlands; Rod Daniels and John McCauley, WHO Collaborating Centre for Reference and Research on Influenza, Francis Crick Institute, United Kingdom; Tyra Grove Krause, Statens Serum Institut and EuroMOMO network, Denmark). Maps and commentary do not represent a statement on the legal or border status of the countries and territories shown.

All data are up to date on the day of publication. Past this date, however, published data should not be used for longitudinal comparisons, as countries retrospectively update their databases.

The WHO Regional Office for Europe is responsible for the accuracy of the Russian translation.

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