Flu News Europe
Joint ECDC–WHO/Europe weekly influenza update

Summary

Week 50/2018 (10–16 December 2018)

- Although most countries reported local, regional or widespread geographic spread, intensity of influenza activity remained at baseline or low levels in the great majority of countries throughout the European Region.
- Among the individuals sampled after presenting with ILI or ARI to sentinel primary healthcare sites, 18% tested positive for influenza viruses.
- The majority of influenza virus detections was type A among both inpatients and outpatients.
- For week 50/2018, data from the 20 Member States and areas reporting to the EuroMOMO project indicated all-cause mortality to be at expected levels for this time of year.

2018–2019 season overview

- Up to week 50/2018, influenza activity has been at baseline or low levels in most countries of the European Region, with only 3 reporting medium intensity for at least 1 week.
- The northern hemisphere Vaccine Composition Meeting for 2019–2020 has been planned for 18–20 February 2019 in Beijing, China. For more information see here.

Primary care data

Syndromic surveillance data

For week 50/2018, of those Member States in which thresholds for influenza-like illness (ILI) activity are defined, 2 countries in southern (Greece, Italy) and 2 in western Europe (Netherlands, Poland) reported activity above baseline levels.

Of those Member States and areas in which thresholds for acute respiratory infection (ARI) activity are defined, 1 country in eastern (Armenia), 1 in northern (Lithuania), 1 in southern (Bulgaria) and 2 in western (Belgium, Slovakia) Europe reported activity above baseline levels.

Influenza activity

Of 44 Member States and areas reporting on intensity, 21 reported baseline (across the region), 20 low (across the region) and 3 medium (Armenia, Georgia and Ukraine) intensity of influenza activity for week 50/2018 (Fig. 1).

Of 44 Member States and areas reporting on geographic spread, 6 reported no activity (in southern and western areas), 25 sporadic (across the region), 5 local (Estonia, France, Greece and Latvia Spain), 3 regional (Italy, Portugal and Ukraine) and 5 widespread geographic spread (Georgia, Iceland, Norway, Sweden and Turkey) (Fig. 2).

Fig. 1. Intensity in the European Region, week 50/2018

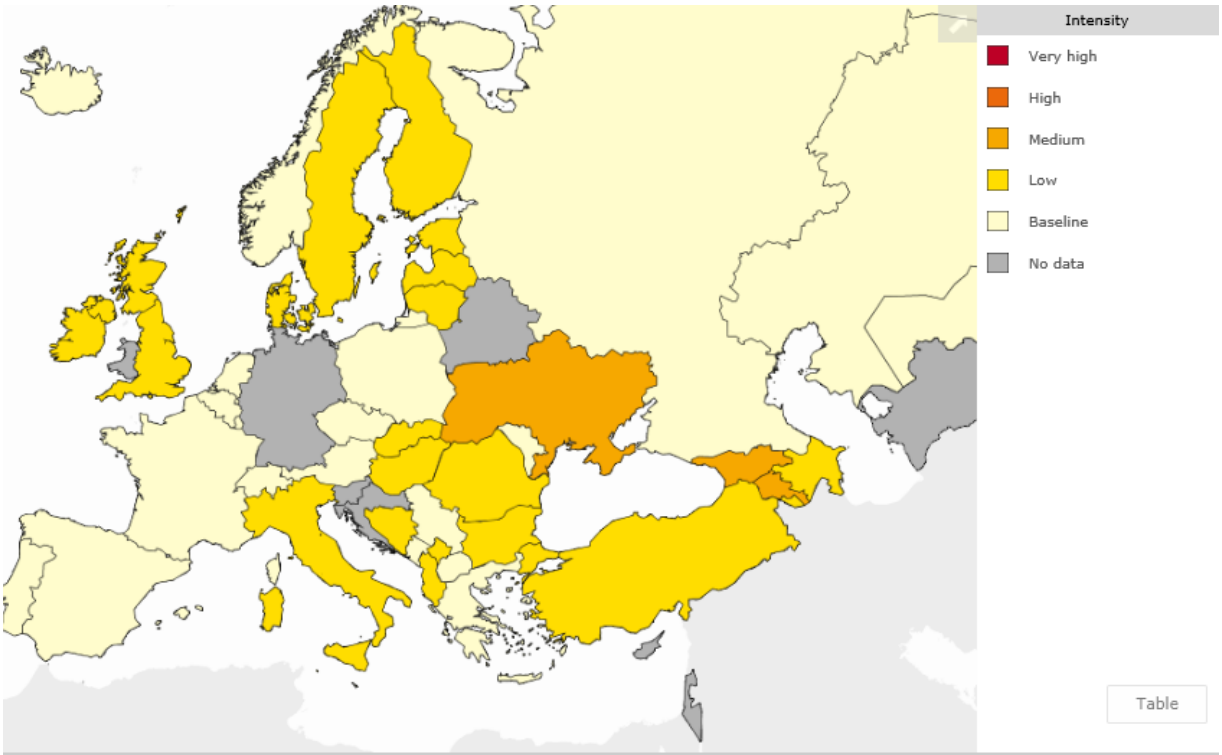
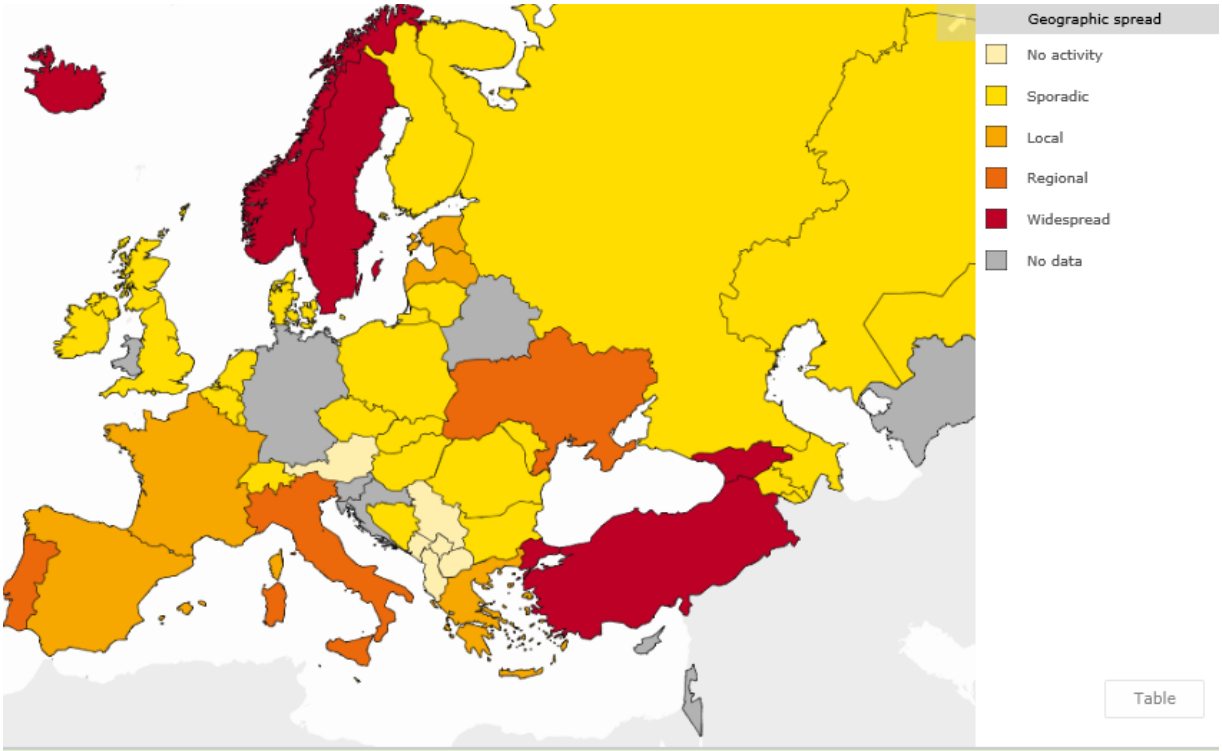


Fig. 2. Geographic spread in the European Region, week 50/2018



For interactive maps of influenza intensity and geographic spread, see the Flu News Europe website.

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

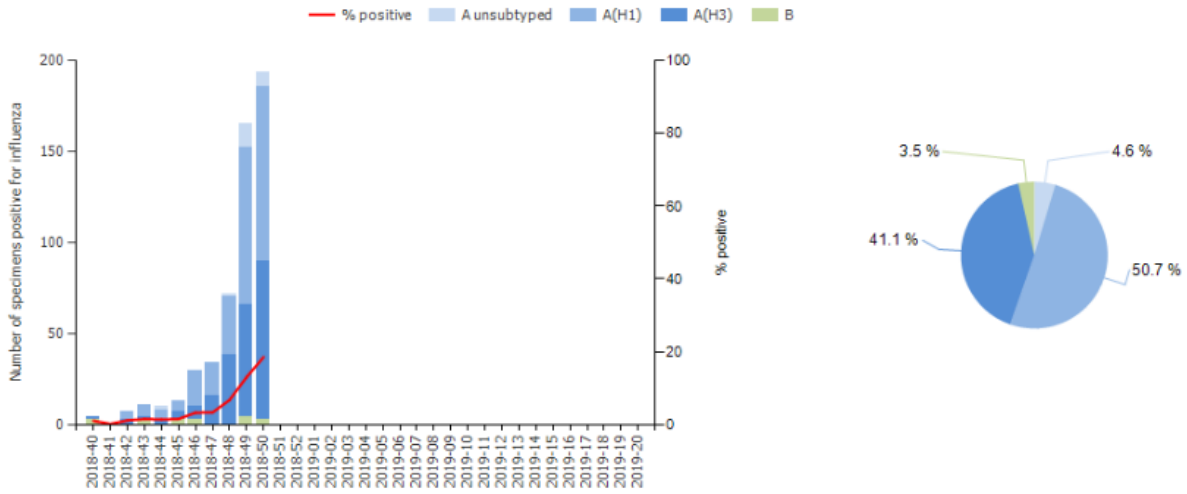
For week 50/2018, 193 (18%) of 1 059 sentinel specimens tested positive for an influenza virus; 190 (98.4%) were type A and 3 (1.6%) type B. Of 182 subtyped A viruses, 52.2% were A(H1N1)pdm09 and 47.8% A(H3N2) (Fig. 3 and Table 1).

Of 27 Member States or areas across the region that each tested at least 10 sentinel specimens in week 50/2018, 16 reported a rate of influenza virus detections above 10% and 7 of those above 30%.

For the season so far, more influenza type A (n=521, 96.5%) than type B (n=19, 3.5%) viruses have been detected. Of 496 type A viruses subtyped, 274 (55.2%) were A(H1N1)pdm09 and 222 (44.8%) were A(H3N2). Of 5 influenza type B viruses ascribed to a lineage, 4 were B/Yamagata and 1 was B/Victoria (14 type B viruses were reported without a lineage) (Fig. 3 and Table 1).

Details of the distribution of viruses detected in non-sentinel-source specimens can be found in the Virus characteristics section.

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



[a] Pie chart shows cumulative data for this period.

Table 1. Influenza virus detections in sentinel-source specimens by type and subtype, week 50/2018 and cumulatively.

	Current Week		Season 2018–2019	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**190**	**98.4**	**521**	**96.5**
A(H1N1)pdm09	95	52.2	274	55.2
A(H3N2)	87	47.8	222	44.8
A not subtyped	8	-	25	-
Influenza B	**3**	**1.6**	**19**	**3.5**
B/Victoria lineage	0	-	1	20.0
B/Yamagata lineage	0	-	4	80.0
Unknown lineage	3	-	14	-
Total detections (total tested)	**193 (1 059)**	**18.2**	**540 (8 768)**	**6.2**

[a]For influenza type percentage calculations, the denominator is total detections; for subtype and lineage, it is total influenza A subtyped and total influenza B lineage determined, respectively; for total detections, it is total tested.

Severity

A subset of Member States and areas monitors severe disease related to influenza virus infection by surveillance of 1) hospitalized laboratory-confirmed influenza cases in ICUs (12 Member States or areas), or other wards (8 Member States or areas), or 2) severe acute respiratory infections (SARI; 17 Member States or areas).

1.1) Hospitalized laboratory-confirmed influenza cases – ICUs

Among laboratory-confirmed influenza cases sampled in ICUs in week 50/2018 (n = 58), influenza type A viruses (n=53, 91.4%) were detected more frequently than influenza type B viruses (n=5, 8.6%).

Since week 40/2018, more influenza type A (n=226, 93.0%) than type B (n=17, 7.0%) viruses were detected. Of 107 subtyped influenza A viruses, 94 (87.9%) were A(H1N1)pdm09 and 13 (12.1%) A(H3N2). No influenza B viruses were ascribed to a lineage. Of 73 cases with known age, 50.7% were 15–64 years old and 42.5% were 65 years and older.

1.2) Hospitalized laboratory-confirmed influenza cases – other wards

Among laboratory-confirmed influenza cases reported in wards other than ICUs in week 50/2018 (n = 42), influenza type A viruses (n=41, 97.6%) were detected more frequently than influenza type B viruses (n=1, 2.4%).

Since week 40/2018, more influenza type A (n=222, 92.5%) than type B (n=18, 7.5%) viruses were detected. Of 58 subtyped influenza A viruses, 46 (79.3%) were A(H1N1)pdm09 and 12 (20.7%) A(H3N2). No influenza B viruses were ascribed to a lineage. Of 240 cases with known age, 48.8% were 15–64 years old and 22.5% were 65 years and older.

2. SARI surveillance

For week 50/2018, 1 145 SARI cases were reported by 13 Member States or areas. Of 227 specimens tested for influenza viruses, 51 (22.5%) were positive. Only influenza type A viruses were detected.

Of 10 298 SARI cases reported since week 40/2018, 10 288 had a recorded age and, of these, 68.3% were 0–4 years old and 16.2% were 15–64 years old. All SARI cases testing positive for influenza since week 40/2018 (n=137) were infected with type A viruses. Of the 132 influenza type A viruses subtyped, 105 (79.5%) were A(H1N1)pdm09 and 27 (20.5%) A(H3N2).

Mortality monitoring

For week 50/2018, the EuroMOMO project received data from 20 Member States or areas that were included in pooled analyses. Overall, the pooled estimates of all-cause mortality showed expected levels for this time of year in the participating countries.

Virus characteristics

Details of the distribution of viruses detected in sentinel-source specimens can be found in the Primary care data section.

Viruses detected in non-sentinel source specimens

For week 50/2018, 1 289 specimens from non-sentinel sources (such as hospitals, schools, primary care facilities not involved in sentinel surveillance, or nursing homes and other

institutions) tested positive for an influenza virus; 1 245 (96.6%) were type A and 44 (3.4%) type B. Of 228 subtyped A viruses, 69.5% were A(H1N1)pdm09 and 30.5% were A(H3N2).

For the season so far, a substantially greater number of influenza type A (n=4 137, 94.1%) than type B viruses (n=261, 5.9%) has been detected. Of 1 442 subtyped A viruses, 67.5% were A(H1N1)pdm09 and 32.5% A(H3N2). Of 8 influenza type B viruses ascribed to a lineage, 6 were B/Yamagata and 2 were B/Victoria; 253 type B viruses were reported without a lineage (Table 2).

Table 2. Influenza virus detections in non-sentinel source specimens by type and subtype, week 50/2018 and cumulatively

	Current Week		Season 2018–2019	
Virus type and subtype	**Number**	**%[a]**	**Number**	**%[a]**
Influenza A	**1 245**	**96.6**	**4 137**	**94.1**
A(H1N1)pdm09	198	69.5	974	67.5
A(H3N2)	87	30.5	468	32.5
A not subtyped	960	-	2 695	-
Influenza B	**44**	**3.4**	**261**	**5.9**
B/Victoria lineage	0	-	2	25.0
B/Yamagata lineage	0	-	6	75.0
Unknown lineage	44	-	253	-
Total detections (total tested)	**1 289 (4 398)**	**-**	**4 398 (18 318)**	**-**

[a] For type percentage calculations, the denominator is total detections; for subtype and lineage, it is total influenza A subtyped and total influenza B lineage determined, respectively; as not all countries have a true non-sentinel testing denominator, no percentage calculations for total tested are shown.

Genetic characterization

Since week 40/2018, genetic characterizations of 166 viruses were reported: 118 were A(H1)pdm09 viruses belonging to the A/Michigan/45/2015 (6B.1) clade; 45 were A(H3) viruses, with 35 belonging to the A/Alsace/1746/2018 (3C.2a1b) subgroup, 3 to the A/Switzerland/8060/2017 (3C.2a2) subgroup, 3 to the A/Cote d'Ivoire/544/2016 (3C.2a3) subgroup, 3 to the A/England/538/2018 (3C.3a) subgroup and 1 attributed to a subgroup not listed. 2 B/Yamagata lineage viruses were characterized as belonging to the B/Phuket/3073/2013 clade (clade 3) and 1 B/Victoria lineage virus was characterized as belonging to the B/Brisbane/60/2008 clade (clade 1A) (Table 3).

Table 3. Viruses attributed to genetic groups, cumulative for weeks 40–50/2018

Phylogenetic group	Number of viruses
A(H1)pdm09 group 6B.1 representative A/Michigan/45/2015[a]	118
A(H3) clade 3C.2a1b representative A/Alsace/1746/2018 subgroup	35
A(H3) clade 3C.2a2 representative A/Switzerland/8060/2017 subgroup[b]	3
A(H3) clade 3C.2a3 representative A/Cote d'Ivoire/544/2016 subgroup	3
A(H3) clade 3C.3a representative A/England/538/2018 subgroup	3
A(H3) attributed to recognized group in current guidance but not listed here	1
B(Vic)-lineage clade 1A representative B/Brisbane/60/2008	1
B(Yam)-lineage clade representative B/Phuket/3073/2013[c]	2

[a] Vaccine component for 2018–2019 northern hemisphere and 2019 southern hemisphere seasons.
[b] Vaccine component for 2019 southern hemisphere season.
[c] Vaccine component of quadrivalent vaccines for use in 2018–2019 northern hemisphere and 2019 southern hemisphere seasons.

The latest characterization data are summarized in the ECDC summary report for November.

For more information on virus characterizations for EU/EEA countries, see earlier WHO CC London Influenza virus characterisation reports.

The recommended composition of the trivalent influenza vaccine for the northern hemisphere 2018–2019 season included an A/Michigan/45/2015 (H1N1)pdm09-like virus, an A/Singapore/INFIMH-16-0019/2016 (H3N2)-like virus and a B/Colorado/06/2017-like virus (B/Victoria lineage). For quadrivalent vaccines, a B/Phuket/3073/2013-like virus (B/Yamagata lineage) was recommended. The full report can be found here.

On 27 September 2018, WHO announced the recommended vaccine composition for the southern hemisphere 2019 season. The recommendations matched the A(H1N1)pdm09 and B components for the 2018–2019 northern hemisphere season, but the A(H3N2) component was changed for egg-based vaccines. The full report can be found here. A comment by ECDC can be seen here.

Antiviral susceptibility testing

92 A(H1N1)pdm09, 27 A(H3N2), and 2 type B viruses with collection dates in weeks 40–50/2018 have been tested for susceptibility to neuraminidase inhibitors. None of the viruses showed evidence of reduced inhibition by neuraminidase inhibitors.

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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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