

## Summary

### Week 51/2018 (17–23 December 2018)

- Only 28 countries reported for week 51/2018, compared to 44 for week 50/2018. Nonetheless, despite the low level of reporting, influenza activity was observed as continuing to increase in the European Region. Among the individuals sampled after presenting with ILI or ARI to sentinel primary healthcare sites, 21.8% tested positive for influenza viruses.
- The majority of influenza virus detections were type A in both inpatients and outpatients.
- For week 51/2018, data from the 8 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 51/2018, influenza activity has been at baseline or low levels in most countries of the European Region.
- The northern hemisphere Vaccine Composition Meeting for 2019–2020 has been planned for 18–20 February 2019 in Beijing, China. For more information see <https://www.who.int/influenza/vaccines/virus/recommendations/consultation201902/en/>

## Primary care data

### Syndromic surveillance data

For week 51/2018, of those Member States in which thresholds for influenza-like illness (ILI) activity are defined, 2 countries in the Region (Israel and Luxembourg) reported activity above baseline levels.

Of those Member States and areas in which thresholds for acute respiratory infection (ARI) activity are defined, 3 countries in the Region (Armenia, Belgium and Slovakia) reported activity above baseline levels.

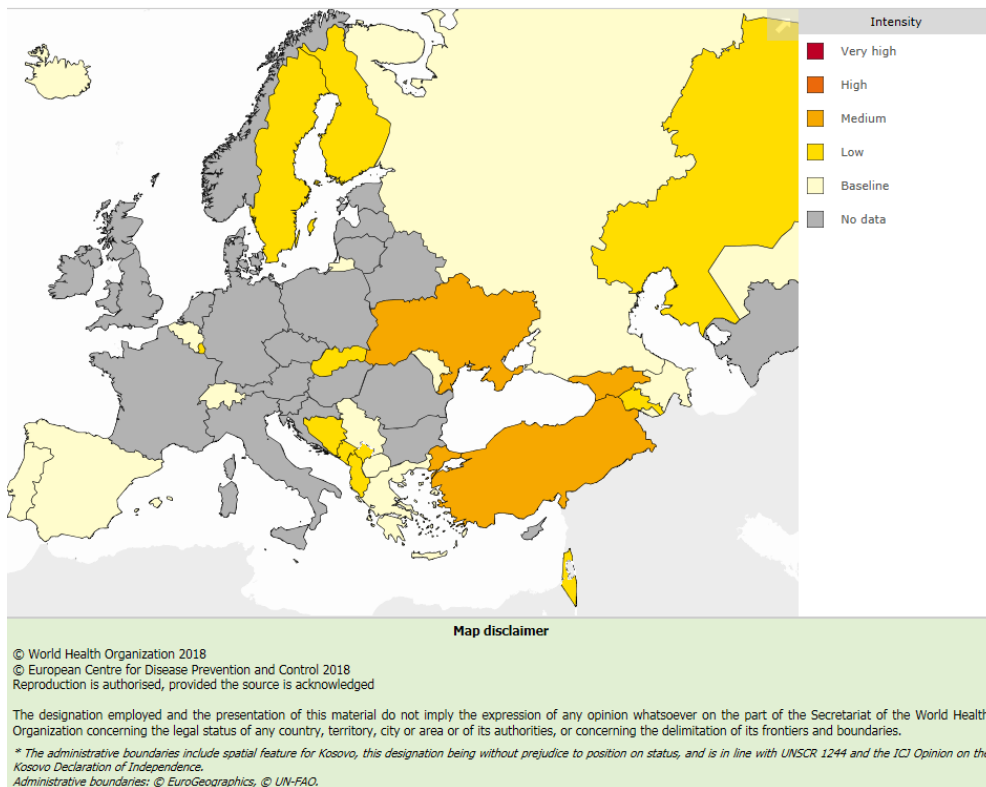
### Influenza activity

Of 28 Member States and areas reporting on intensity, 13 reported baseline (across the region), 12 reported low (across the region) and 3 medium (Georgia, Turkey and Ukraine) intensity of influenza activity for week 51/2018 (Fig. 1).

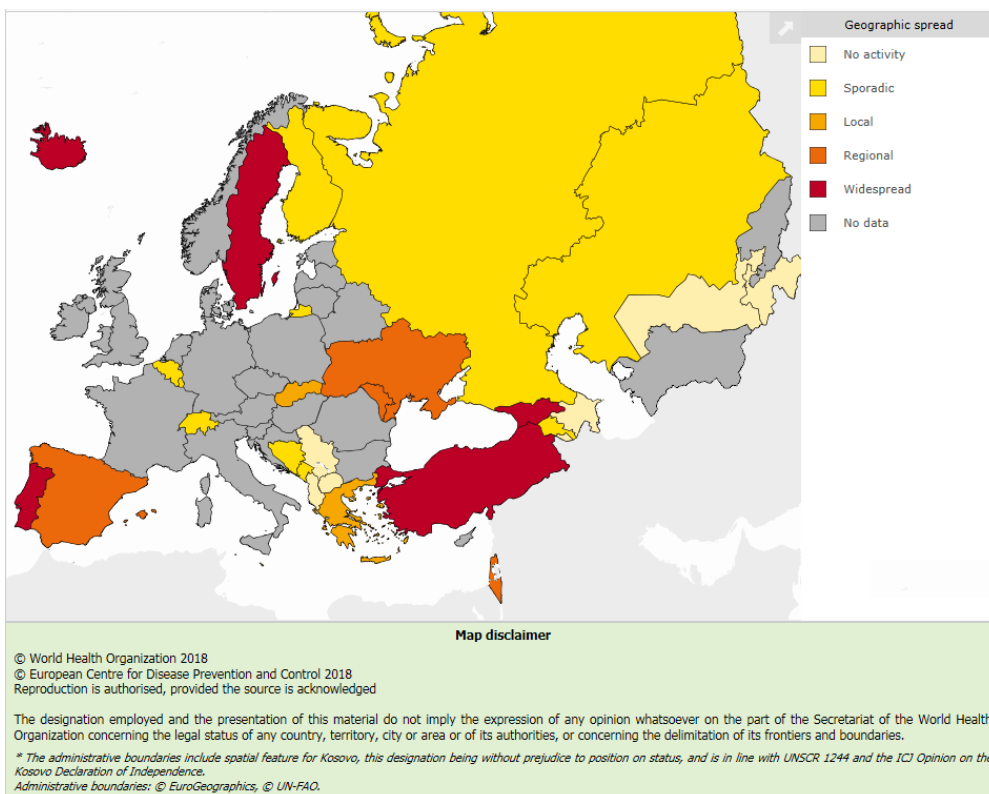
Of 28 Member States and areas reporting on geographic spread, 7 reported no activity (in eastern and southern areas), 10 reported sporadic spread (across the region), 2 reported

local spread (Greece and Slovakia), 4 regional (Israel, Republic of Moldova, Spain and Ukraine) and 5 widespread (Georgia, Iceland, Portugal, Sweden and Turkey) activity (Fig. 2).

**Fig. 1. Intensity in the European Region, week 51/2018**



**Fig. 2. Geographic spread in the European Region, week 51/2018**



For interactive maps of influenza intensity and geographic spread, see the [Flu News Europe website](#).

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

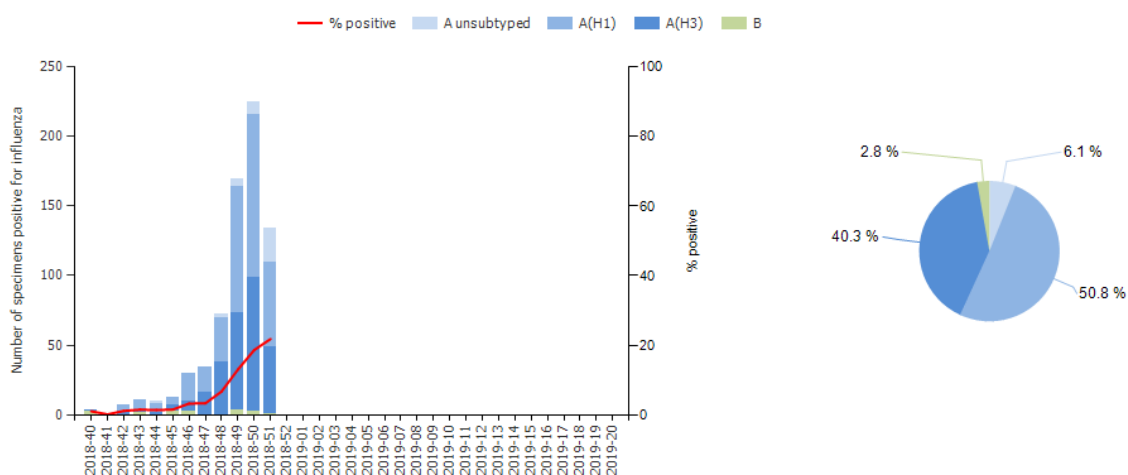
For week 51/2018, 134 (21.8%) of 614 sentinel specimens tested positive for an influenza virus; 133 (99.3%) were type A and 1 (0.7%) type B. Of 108 subtyped A viruses, 55.6% were A(H1N1)pdm09 and 44.4% A(H3N2) (Fig. 3 and Table 1).

Of 11 Member States or areas across the region that each tested at least 10 sentinel specimens in week 51/2018, 8 reported a rate of influenza virus detections above 10% (median 23.1%; range 16.0-50.0%) and 2 of these were above 30%.

For the season so far, more influenza type A (n=689, 97.2%) than type B (n=20, 2.8%) viruses have been detected. Of 646 type A viruses subtyped, 360 (55.7%) were A(H1N1)pdm09 and 286 (44.3%) were A(H3N2). Of 6 influenza type B viruses ascribed to a lineage, 5 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<sup>a</sup>**



<sup>a</sup> Pie chart shows cumulative data for this period.

**Table 1. Influenza virus detections in sentinel-source specimens by type and subtype, week 51/2018 and cumulatively.**

Virus type and subtype	Current Week		Season 2018–2019	
	Number	% <sup>a</sup>	Number	% <sup>a</sup>
<b>Influenza A</b>	<b>133</b>	<b>99.3</b>	<b>689</b>	<b>97.2</b>
A(H1N1)pdm09	60	55.6	360	55.7
A(H3N2)	48	44.4	286	44.3
A not subtyped	25	-	43	-
<b>Influenza B</b>	<b>1</b>	<b>0.7</b>	<b>20</b>	<b>2.8</b>
B/Victoria lineage	0	-	1	16.7
B/Yamagata lineage	0	-	5	83.3
Unknown lineage	1	-	14	-
<b>Total detections (total tested)</b>	<b>134 (614)</b>	<b>21.8</b>	<b>709 (9 570)</b>	<b>7.4</b>

<sup>a</sup>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 51/2018 (n = 3), all were infected with influenza type A viruses.

Since week 40/2018, more influenza type A (n=234, 93.2%) than type B (n=17, 6.8%) viruses were detected. Of 109 subtyped influenza A viruses, 96 (87.9%) were A(H1N1)pdm09 and 13 (11.9%) A(H3N2). No influenza B viruses were ascribed to a lineage. Of 82 cases with known age, 50% were 15–64 years old and 40.2% 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 51/2018 (n = 67), influenza type A viruses (n=66, 98.5%) were detected more frequently than influenza type B viruses (n=1, 1.5%).

Since week 40/2018, more influenza type A (n=317, 94.1%) than type B (n=20, 5.9%) viruses were detected. Of 61 subtyped influenza A viruses, 46 (75.4%) were A(H1N1)pdm09 and 15 (24.6%) A(H3N2). No influenza B viruses were ascribed to a lineage. Of 337 cases with known age, 49.3% were 15–64 years old and 26.7% were 65 years and older.

## 2. SARI surveillance

For week 51/2018, 1 126 SARI cases were reported by 12 Member States or areas. Of 278 specimens tested for influenza viruses, 59 (21.2%) were positive. Only influenza type A viruses were detected.

Of 11 541 SARI cases reported since week 40/2018, 11 531 had a recorded age and, of these, 68.1% were 0–4 years old and 16.3% were 15–64 years old. For SARI cases testing positive for an influenza virus since week 40/2018 (n=225), type A viruses have been the most common (n=224, 99.6%). Of the 220 influenza type A viruses subtyped, 172 (78.2%) were A(H1N1)pdm09 and 48 (21.8%) A(H3N2).

## **Mortality monitoring**

For week 51/2018, the EuroMOMO project received data from 8 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 51/2018, 539 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; 535 (99.3%) were type A and 4 (0.7%) type B. Of 203 subtyped A viruses, 45.8% were A(H1N1)pdm09 and 54.2% were A(H3N2).

For the season so far, a substantially greater number of influenza type A (n=4 735, 94.6%) than type B viruses (n=270, 5.4%) has been detected. Of 1 689 subtyped A viruses, 65% were A(H1N1)pdm09 and 35% A(H3N2). Of 8 influenza type B viruses ascribed to a lineage, 6 were B/Yamagata and 2 were B/Victoria; 262 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 51/2018 and cumulatively**

Virus type and subtype	Current Week		Season 2018–2019	
	Number	% <sup>a</sup>	Number	% <sup>a</sup>
<b>Influenza A</b>	<b>535</b>	<b>99.3</b>	<b>4 735</b>	<b>94.6</b>
A(H1N1)pdm09	93	45.8	1 098	65.0
A(H3N2)	110	54.2	591	35.0
A not subtyped	332	-	3 046	-
<b>Influenza B</b>	<b>4</b>	<b>0.7</b>	<b>270</b>	<b>5.4</b>
B/Victoria lineage	0	-	2	25.0
B/Yamagata lineage	0	-	6	75.0
Unknown lineage	4	-	262	-
<b>Total detections (total tested)</b>	<b>539 (7456)</b>	<b>-</b>	<b>5 005 (161 808)</b>	<b>-</b>

<sup>a</sup> 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 176 viruses were reported: 124 were A(H1)pdm09 viruses belonging to the A/Michigan/45/2015 (6B.1) clade; 49 were A(H3) viruses, with 39 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) clade 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 40–51/2018**

Phylogenetic group	Number of viruses
A(H1)pdm09 group 6B.1 representative A/Michigan/45/2015 <sup>a</sup>	124
A(H3) clade 3C.2a1b representative A/Alsace/1746/2018 subgroup	39
A(H3) clade 3C.2a2 representative A/Switzerland/8060/2017 subgroup <sup>b</sup>	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 <sup>c</sup>	2

<sup>a</sup> Vaccine component for 2018–2019 northern hemisphere and 2019 southern hemisphere seasons.

<sup>b</sup> Vaccine component for 2019 southern hemisphere season.

<sup>c</sup> 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 40–51/2018 have been tested for susceptibility to neuraminidase inhibitors. One B virus showed evidence of reduced inhibition by neuraminidase inhibitors.

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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.

Suggested citation:

European Centre for Disease Prevention and Control/WHO Regional Office for Europe. Flu News Europe, Joint ECDC–WHO weekly influenza update, week 51/2018.

Tables and figures should be referenced:

European Centre for Disease Prevention and Control/WHO Regional Office for Europe. Flu News Europe, Joint ECDC–WHO weekly influenza update, week 51/2018.

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