



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

22 March 2018 – Week 12 report (up to week 11 data)

This report is published weekly on the [PHE website](#). For further information on the surveillance schemes mentioned in this report, please see the [PHE website](#) and the [related links](#) at the end of this document.

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Summary

During week 11 (ending 18 March 2018), influenza continues to circulate but decreases are noted across most indicators. Influenza A and B are co-circulating. The Department of Health has issued an [alert](#) on the prescription of antiviral medicines by GPs.

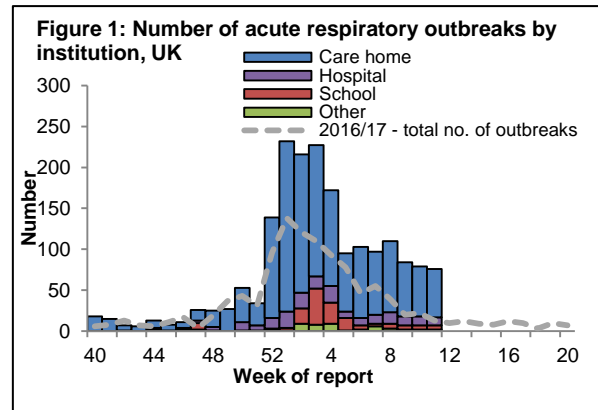
- [Community influenza surveillance](#)
 - Seventy-six new acute respiratory outbreaks have been reported in the past 7 days compared to 79 in the previous week. Fifty-nine outbreaks were from care homes, where 20 tested positive for influenza A(unknown subtype), 15 were positive for influenza B, one tested positive for influenza A(H3) and two tested positive for mixed infections of influenza A(unknown subtype) and B. Ten outbreaks were from hospitals where three tested positive for influenza A(unknown subtype), four tested positive for influenza B, one tested positive for influenza A(H1N1)pdm09 and another for a mixed infection of influenza B and coronavirus. Five outbreaks were from schools with no test results available. The remaining two outbreaks were reported from the Other settings category, where one tested positive for influenza A(unknown subtype).
- [Overall weekly influenza GP consultation rates across the UK](#)
 - In week 11, the overall weekly influenza-like illness (ILI) GP consultation rate was 18.6 per 100,000 in England, compared to 20.3 per 100,000 in week 10. This remains above the baseline threshold of 13.1 per 100,000 for this season. In the devolved administrations, ILI rates continued to decrease.
 - Through the Syndromic Surveillance systems, GP In Hours and Out of Hours consultations for influenza-like illnesses (ILI) decreased further. NHS 111 cold/flu calls continued to decrease but remain above seasonally expected levels. Emergency attendances for acute respiratory infections remained stable but above baseline levels during week 11.
- [Influenza-confirmed hospitalisations](#)
 - In week 11, there were 114 new admissions to ICU/HDU with confirmed influenza (eight influenza A(H1N1)pdm09, 10 influenza A(H3N2), 51 influenza A(unknown subtype) and 45 influenza B) reported across the UK (114/144 Trusts in England) through the USS mandatory ICU scheme with a rate of 0.27 per 100,000 for England, compared to 0.30 in the previous week. This is above the baseline threshold of 0.05 per 100,000 for the 2017/18 season.
 - In week 11, there were 323 hospitalised confirmed influenza cases (21 influenza A(H1N1)pdm09, 56 influenza A(H3N2), 112 influenza A(unknown subtype) and 134 influenza B) reported through the USS sentinel hospital network (all levels of care) (19 NHS Trusts across England), with a rate of 3.97 per 100,000 compared to 4.39 per 100,000 in the previous week. This is above the baseline threshold of 0.56 per 100,000 for the 2017/18 season.
 - There were three new influenza admissions (one influenza A(H1N1)pdm09, one influenza A(H3N2) and one influenza B) reported from the six Severe Respiratory Failure centres in the UK in week 11.
- [All-cause mortality data](#)
 - In week 11 2018, no statistically significant excess all-cause mortality by week of death was seen overall and by age group in England, through the EuroMOMO algorithm. In the devolved administrations, statistically significant excess all-cause mortality for all ages was observed in Northern Ireland but not in Scotland and Wales in week 11 2018.
- [Microbiological surveillance](#)
 - Twenty-six samples tested positive for influenza (one influenza A(H1N1)pdm09, 13 influenza A(H3) and 12 influenza B) through the UK GP sentinel schemes, with an overall positivity of 49.1% compared to 54.5% in week 10.
 - Four hundred and forty-five positive detections were recorded through the DataMart scheme (173 influenza A(H3), 80 influenza A(unknown subtype), 31 influenza A(H1N1)pdm09 and 161 influenza B) with a positivity of 22.2% in week 11 compared to 25.5% in week 10, which is above the baseline threshold of 8.6%.
- [Vaccination](#)
 - Up to week 04 2018, in 96.9% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2017/18 influenza vaccine in targeted groups was: 48.7% in under 65 years in a clinical risk group, 47.1% in pregnant women and 72.4% in 65+ year olds. In 96.8% of GP practices reporting weekly to Immform, the provisional proportion of children in England who had received the 2017/18 influenza vaccine in targeted groups was: 42.6% in 2 year olds and 44.0% in 3 year olds.
 - Provisional data from the fifth monthly collection of influenza vaccine uptake by frontline healthcare workers show 68.7% were vaccinated by 28 February 2018, compared to 63.4% vaccinated in the previous season by 28 February 2017.
 - Provisional data from the fourth monthly collection of influenza vaccine uptake for children of school years Reception, 1, 2, 3 and 4 age show the provisional proportion of children in England who received the 2017/18 influenza vaccine via school, pharmacy or GP practice by 31 January 2018 in targeted groups was as follows: 62.6% in children of school year Reception age (4-5 years); 60.9% in children of school Year 1 age (5-6 years); 60.3% in children of school Year 2 age (6-7 years); 57.5% in children of school Year 3 age (7-8 years) and 55.7% in children of school Year 4 age (8-9 years).
 - Provisional data from the fourth monthly collection of influenza vaccine uptake in GP patients up to 31 January 2018 is available. The report provides uptake at national, Local Team (LT), Area Team (AT), Clinical Commissioning Group (CCG) and at Local Authority (LA) levels.
 - [WHO](#) have published their recommendations for the composition of the 2018/19 northern hemisphere influenza vaccine.
- [International situation](#)
 - Globally, influenza activity remained high but appeared to have peaked in some countries in the temperate zone of the northern hemisphere. In the temperate zone of the southern hemisphere activity remained at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.

Seventy-six new acute respiratory outbreaks were reported in the past 7 days.

- Acute respiratory disease outbreaks

- Seventy-six new acute respiratory outbreaks have been reported in the past 7 days compared to 79 in the previous week. Fifty-nine outbreaks were from care homes, where 20 tested positive for influenza A(unknown subtype), 15 were positive for influenza B, one tested positive for influenza A(H3) and two tested positive for mixed infections of influenza A(unknown subtype) and B. Ten outbreaks were from hospitals where three tested positive for influenza A(unknown subtype), four tested positive for influenza B, one tested positive for influenza A(H1N1)pdm09 and another for a mixed infection of influenza B and coronavirus. Five outbreaks were from schools with no test results available. The remaining two outbreaks were reported from the Other settings category, where one tested positive for influenza A(unknown subtype).

-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and respscids@phe.gov.uk



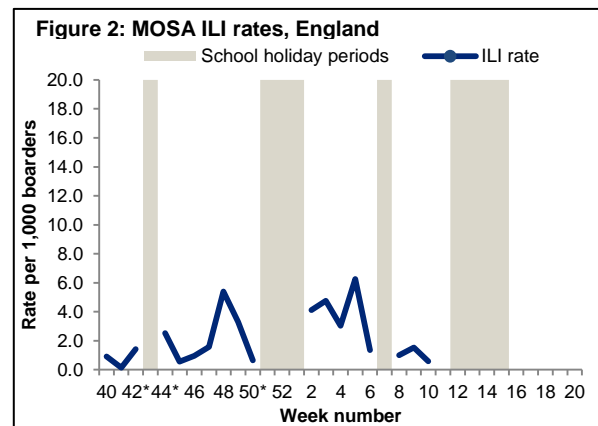
- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

- Boarding schools in England within the MOSA network are recruited each season to report various respiratory related illnesses including influenza like illnesses (ILI). For the 2017/18 season, 21 MOSA schools have agreed to participate in the scheme, including a total of 7,575 boarders.

- The overall ILI rate (all boarders) for week 10 was 0.6 per 1,000 boarders compared to 1.5 per 1,000 boarders in week 09.

-Since week 40, 43 outbreaks have been reported from 13 MOSA schools, with a total of 237 ILI cases identified. Out of the 43 outbreaks, seven tested positive for influenza B, one outbreak was positive for influenza A(H3) and four outbreaks were negative for influenza and other respiratory viruses.

- If you are a MOSA school and would like to participate in this scheme, please email mosa@phe.gov.uk for more information.



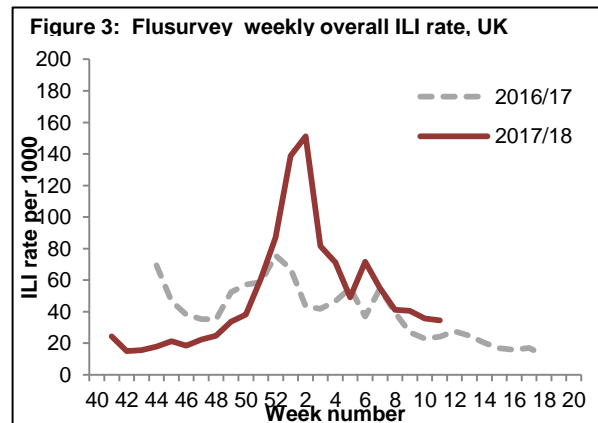
*represents weeks where not all schools will be reporting due to varying school holiday periods.

- FluSurvey

- Internet-based surveillance of influenza-like illness in the general population is undertaken through the FluSurvey. A project run jointly by PHE and the London School of Hygiene and Tropical Medicine.

- The overall ILI rate (all age groups) for week 11 was 34.5 per 1,000 (96/2,786 people reported at least 1 ILI) (Figure 3) compared to 35.7 per 1,000 in week 10.

- If you would like to become a participant of the FluSurvey project please do so by visiting the <https://flusurvey.org.uk/en/accounts/register/> website for more information.



In week 11, the overall weekly influenza-like illness (ILI) GP consultation rate continued to decrease but remains above the baseline threshold in England. In the devolved administrations, ILI rates continued to decrease.

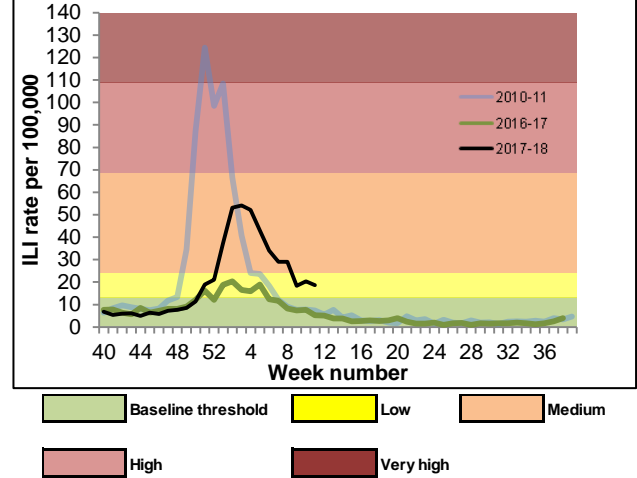
- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance was at 18.6 per 100,000 in week 11 compared to 20.3 per 100,000 in week 10. This remains above the baseline threshold (13.1 per 100,000) (Figure 4*). By age group, the highest rates were seen in 45-64 year olds (24.8 per 100,000) and 64-74 year olds (17.8 per 100,000).

*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity (based on 10 seasons excluding 2009/10) in a standardised approach across Europe. For MEM intensity threshold values, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#clinical-surveillance-through-primary-care>

Figure 4: RCGP ILI consultation rates, England



UK

- In week 11, overall weekly ILI consultation rates across the countries of the UK were similar or decreased further compared to the previous week (Table 1).
- By age group, the highest rates were seen in the 45-64 year olds in Northern Ireland and Wales and Scotland (25.1 per 100,000 and 34.6 per 100,000 respectively) and in the 15-44 year olds in Scotland (36.5 per 100,000).

Table 1: GP ILI consultations in the UK for all ages with MEM thresholds applied*

GP ILI consultation rates (all ages)	Week number																							
	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11
England (RCGP)	6.8	5.4	5.9	6.1	5.0	6.4	5.9	7.3	7.6	8.5	11.4	18.9	21.0	37.3	53.1	54.1	52.1	43.0	34.0	29.1	29.1	18.3	20.3	18.6
Wales	5.7	6.5	6.6	5.4	5.0	5.4	6.2	6.4	5.9	6.4	8.7	13.2	16.7	36.4	62.1	74.7	52.9	52.4	44.3	42.6	33.4	25.9	24.7	19.8
Scotland	10.0	15.3	8.3	10.8	12.4	11.7	10.3	9.1	9.4	18.4	32.5	40.3	44.9	107.2	113.9	102.1	82.3	45.5	30.3	39.4	35.1	28.5	24.9	26.4
Northern Ireland	3.4	3.9	3.7	3.3	4.0	3.6	4.5	5.3	4.0	8.2	10.1	20.7	22.7	52.6	65.2	52.1	44.2	29.0	30.6	25.2	23.6	16.7	18.3	18.3

*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity (based on 10 seasons excluding 2009/10), in a standardised approach across Europe. For MEM threshold values for each country, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#clinical-surveillance-through-primary-care>

GP In Hours Syndromic Surveillance System (England)

-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system is at 12.4 per 100,000 in week 11 (Figure 5).

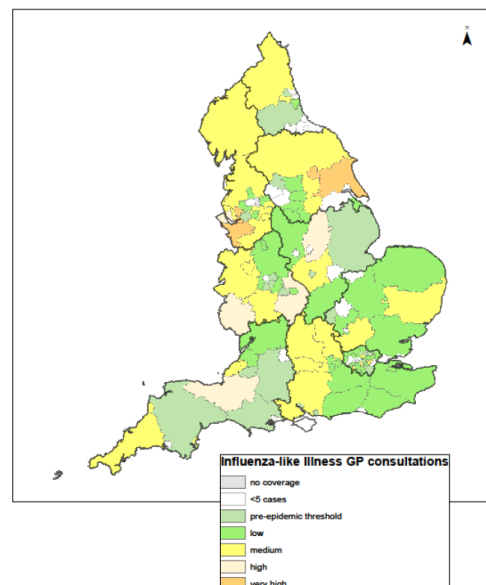
During week 11, GP In Hours and Out of Hours consultations for influenza-like illnesses (ILI) decreased further. NHS 111 cold/flu calls continued to decrease but remain above seasonally expected levels. Emergency attendances for acute respiratory infections remained stable but above baseline levels during week 11.

Figure 5 represents a map of GP ILI consultation rates in week 11 across England by upper tier Local Authorities (utLA), with influenza-like illness surveillance MEM thresholds applied.

ILI consultation rates presented for each utLA on the map should be interpreted in context of regional and national ILI activity; as MEM thresholds are calculated (based on previous influenza seasons from 2012/13 onwards) separately for each of the nine PHE centres and utLA rates are then compared to Centre-level thresholds only, therefore utLAs with higher background rates than the Centre may appear to have higher ILI activity.

-For further information, please see the syndromic surveillance [webpage](#).

Figure 5: Map of GP ILI consultation rates in week 11

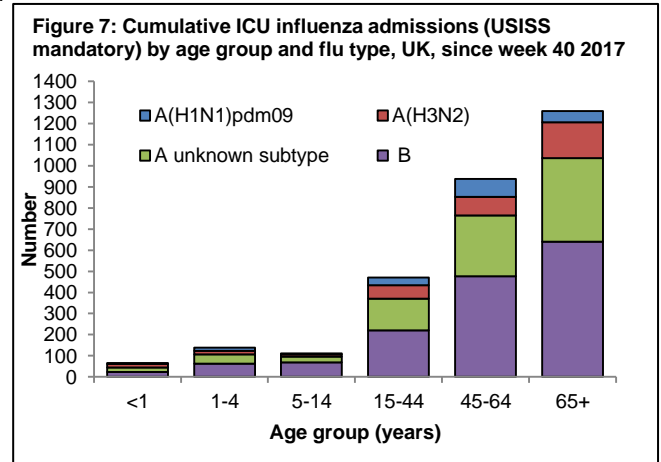
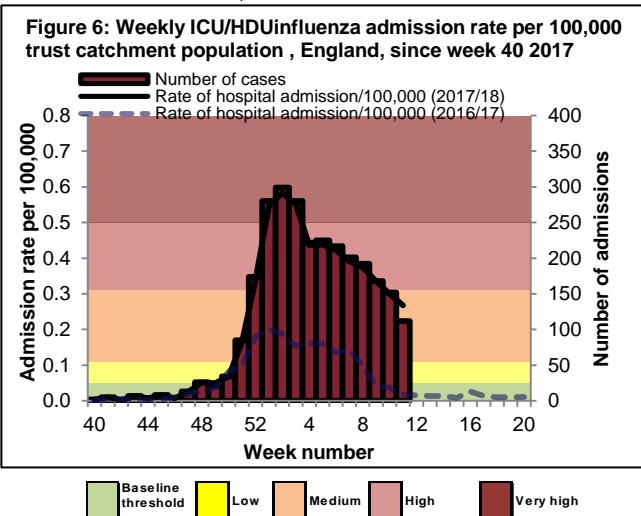


In week 11 2018, there were 114 new admissions to ICU/HDU with confirmed influenza (eight influenza A(H1N1)pdm09, 10 influenza A(H3N2), 51 influenza A(unknown subtype) and 45 influenza B) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (114 Trusts in England). There were 323 hospitalised confirmed influenza cases (21 influenza A(H1N1)pdm09, 56 influenza A(H3N2), 112 influenza A(unknown subtype) and 134 influenza B) were reported through the USISS sentinel hospital network across England (19 Trusts).

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 11)

- In week 11, there were 114 new admissions to ICU/HDU with confirmed influenza (eight influenza A(H1N1)pdm09, 10 influenza A(H3N2), 51 influenza A(unknown subtype) and 45 influenza B) reported across the UK (114/144 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.27 per 100,000 compared to 0.30 per 100,000 in the previous week for England data (Figures 6 and 7), this is above the medium impact threshold of 0.11 per 100,000. A total of nine deaths were reported to have occurred in week 11 in the UK.

A total of 2,983 new admissions (200 influenza A(H1N1)pdm09, 365 influenza A(H3N2), 927 (influenza A(unknown subtype) and 1,491 influenza B) and 340 confirmed deaths have been reported in the UK since week 40 2017.

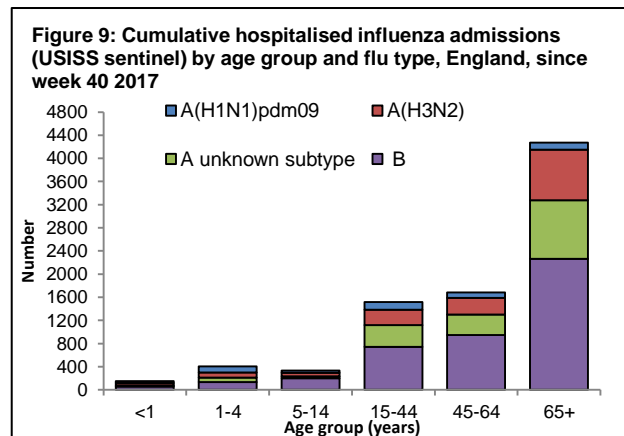
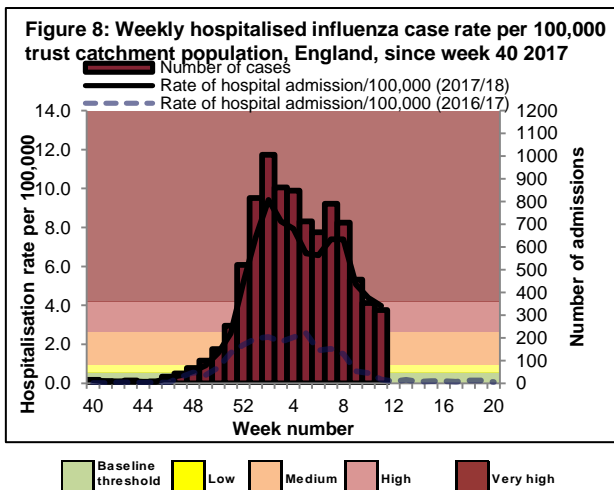


*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#disease-severity-and-mortality-data>

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 11)

- In week 11, there were 323 hospitalised confirmed influenza cases (21 influenza A(H1N1)pdm09, 56 influenza A(H3N2), 112 influenza A(unknown subtype) and 134 influenza B) reported from 19 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 3.97 per 100,000 compared to 4.39 per 100,000 in the previous week (Figures 6 and 7), this is above the high impact threshold of 2.65 per 100,000.

A total of 8,764 hospitalised confirmed influenza admissions (559 influenza A(H1N1)pdm09, 1,696 influenza A(H3N2), 1,995 influenza A(unknown subtype) and 4,514 influenza B) have been reported since week 40 2017 via the sentinel scheme.



*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#disease-severity-and-mortality-data>

- USISS Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 11)

- In week 11, there were three new influenza admissions (one influenza A(H1N1)pdm09, one influenza A(H3N2) and one influenza B) reported from the six Severe Respiratory Failure (SRF) centres in the UK. Since week 40, a total of 52 laboratory confirmed influenza admissions (10 influenza A(H1N1)pdm09, five influenza A(H3N2), 13 influenza A(unknown subtype) and 24 influenza B) were reported from the SRFs for the season to date.

In week 11 2018, no statistically significant excess all-cause mortality by week of death was observed overall and by age group in England, through the EuroMOMO algorithm. In the devolved administrations, statistically significant excess all-cause mortality for all ages was observed in Northern Ireland but not in Scotland and Wales in week 11 2018.

- All-cause death registrations, England and Wales

- In week 10 2018, an estimated 12,997 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is an increase compared to the 10,854 estimated death registrations in week 09 2018.

- Excess all-cause mortality by age group, England, Wales, Scotland and Northern Ireland

- In week 11 2018 in England, no statistically significant excess mortality by week of death above the upper 2 z-score threshold was seen overall, by age group and subnationally (all ages), after correcting ONS disaggregate data for reporting delay with the standardised [EuroMOMO](#) algorithm. This data is provisional due to the time delay in registration; numbers may vary from week to week.

- In the devolved administrations, statistically significant excess all-cause mortality for all ages was observed in Northern Ireland but not in Scotland and Wales in week 11 2018 (Table 2).

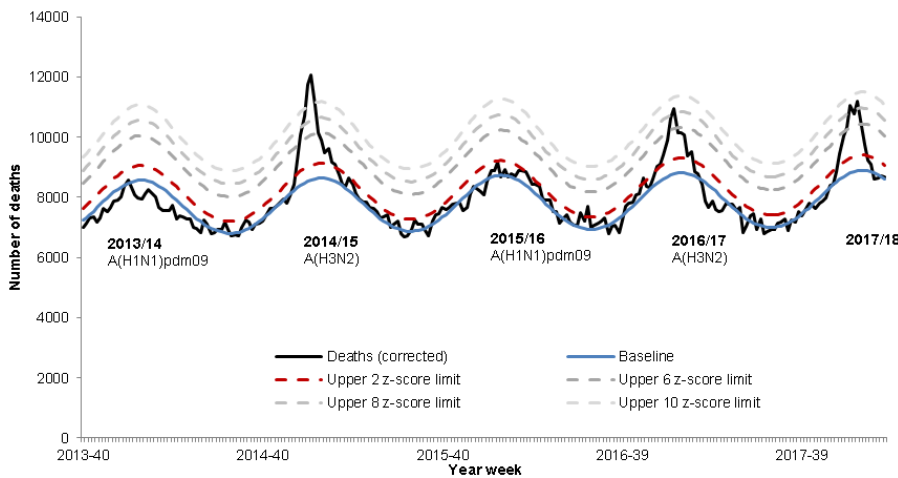
Table 2: Excess mortality by UK country, for all ages*

Country	Excess detected in week 11 2018?	Weeks with excess in 2017/18
England	×	50-05
Wales	×	52,02-03
Scotland	×	49-04,09
Northern Ireland	✓	51-05, 07,10-11

* Excess mortality is calculated as the observed minus the expected number of deaths in weeks above threshold

* NA refers to no excess seen

Figure 10: Weekly observed and expected number of all-cause deaths in 65+ year olds, with the dominant circulating influenza A subtype, England, 2013 to 2018

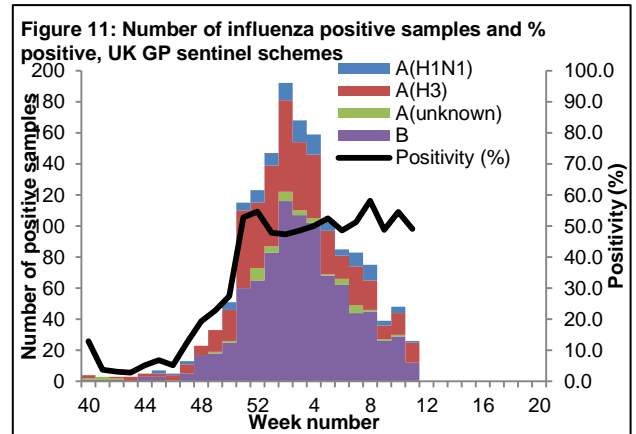


In week 11 2018, 26 samples tested positive for influenza (one influenza A(H1N1)pdm09, 13 influenza A(H3) and 12 influenza B) through the UK GP sentinel schemes, with an overall positivity of 49.1% compared to 54.5% in week 10. Four hundred and forty-five positive detections were recorded through the DataMart scheme (173 influenza A(H3), 80 influenza A(unknown subtype), 31 influenza A(H1N1)pdm09 and 161 influenza B) with a positivity of 22.2% in week 11 compared to 25.5% in week 10, which is above the baseline threshold of 8.6%.

- Sentinel swabbing schemes in England (RCGP) and the Devolved Administrations

-In week 10, 29 samples tested positive for influenza (one influenza A(H1N1)pdm09, seven influenza A(H3), one influenza A(unknown subtype) and 20 influenza B) through the UK GP sentinel schemes, with an overall positivity of 54.7% compared to 48.7% in week 09 (Figure 11).

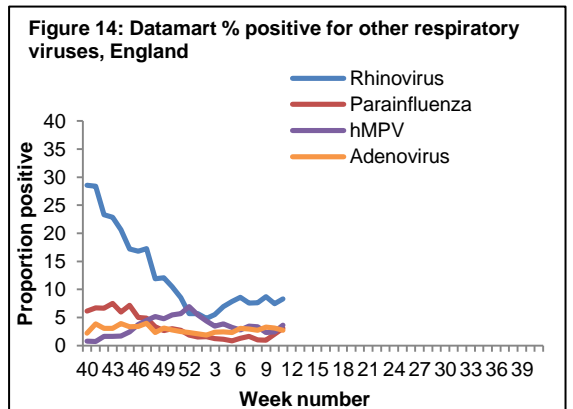
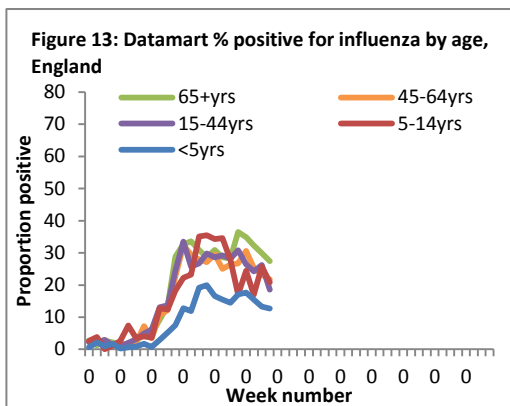
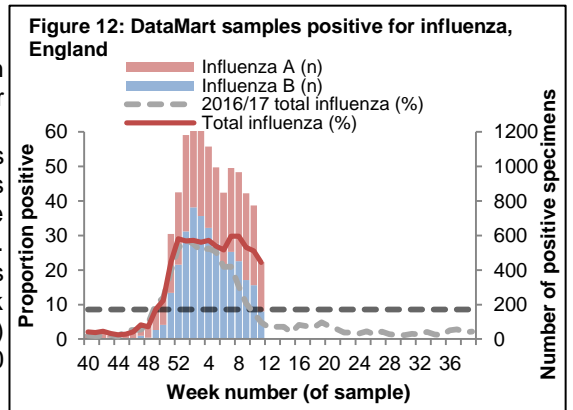
Since week 40, a total of 1,466 samples (449 influenza A(H3), 44 influenza (unknown subtype), 103 influenza A(H1N1)pdm09 and 870 influenza B) tested positive for influenza through this scheme.



NB. Positivity (%) omitted when fewer than 10 specimens were tested

- Respiratory DataMart System (England)

In week 11 2018, out of the 2,004 respiratory specimens reported through the Respiratory DataMart System, 445 samples (22.2%) were positive for influenza (173 influenza A(H3), 80 influenza A(unknown subtype), 31 influenza A(H1N1)pdm09 and 161 influenza B) (Figure 12), which is above the MEM baseline threshold for this season of 8.6%. This compares to 25.5% in week 10. The highest positivity for influenza by age group was seen in the 65+ year olds at 27.4% in week 11 (Figure 13). The overall positivity for RSV was low at 1.6% in week 11. Rhinovirus positivity increased slightly at 8.3% in week 11 compared to 7.4% in week 10. Adenovirus, parainfluenza and human metapneumovirus (hMPV) positivity remained low at 2.7%, 3.1% and 3.7% respectively in week 10 (Figure 14).



*The Moving Epidemic Method has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity in a standardised approach across Europe. The threshold to indicate a likelihood of influenza community circulation for Datamart % positive as calculated through the Moving Epidemic Method is 8.6% in 2017/18.

- Virus characterisation

PHE characterises the properties of influenza viruses through one or more tests, including [genome sequencing](#) (genetic analysis) and [haemagglutination inhibition \(HI\)](#) assays (antigenic analysis). These data are used to compare how similar the currently circulating influenza viruses are to the strains included in seasonal influenza vaccines, and to monitor for changes in circulating influenza viruses. The interpretation of genetic and antigenic data sources is complex due to a number of factors, for example, not all viruses can be cultivated in sufficient quantity for antigenic characterisation, so that viruses with sequence information may not be able to be antigenically characterised as well. Occasionally, this can lead to a biased view of the properties of circulating viruses, as the viruses which can be recovered and analysed antigenically, may not be fully representative of majority variants, and genetic characterisation data does not always predict the antigenic characterisation.

The PHE Respiratory Virus Unit (RVU) has characterised 1,471 influenza viruses detected since week 37 (Table 3). Seven hundred and ninety one influenza B viruses have been analysed; 784 were characterised as belonging to the B/Yamagata/16/88-lineage and 7 belonging to the B/Victoria/2/1987-lineage. All characterised B/Yamagata/16/88-lineage viruses to date are antigenically similar to B/Phuket/3073/2013, the influenza B/Yamagata-lineage component of the 2017/18 Northern Hemisphere quadrivalent vaccine. Three of the B/Victoria/2/87-lineage viruses are antigenically similar to B/Brisbane/60/2008, the influenza B/Victoria-lineage component of 2017/18 Northern Hemisphere trivalent and quadrivalent vaccines. Four influenza B viruses have been characterised where sequencing of the haemagglutinin (HA) gene shows they belong within genetic clade 1A of the B/Victoria lineage, in a subgroup characterised by deletion of two amino acids in the HA. These double deletion subgroup viruses are antigenically distinct from the 2017/18 N.hemisphere B/Victoria lineage vaccine component, with similar viruses having been identified in a minority of influenza B/Victoria lineage viruses in the 2016/17 season in the US and Norway, and since detected in low proportions in other countries, including in Europe.

Genetic characterisation of 467 A(H3N2) influenza viruses detected since late summer, showed that the majority belong to genetic subclade 3C.2a, with 138 belonging to a cluster within this genetic subclade designated as 3C.2a1. Eight viruses belonging to the genetic subclade 3C.3a were detected. The Northern Hemisphere 2017/18 influenza A(H3N2) vaccine strain A/HongKong/4801/2014 belongs in genetic subclade 3C.2a.

Of 213 A(H1N1)pdm09 influenza viruses characterised, those that have been genetically characterised all belong in the genetic subgroup 6B.1, which was the predominant genetic subgroup in the 2016/17 season and to date during the current season. Viruses antigenically analysed are similar to the A/Michigan/45/2015 Northern Hemisphere 2017/18 (H1N1)pdm09 vaccine strain.

Table 3: Viruses characterised by PHE Reference Laboratory, 2017/18

Virus	No. viruses characterised			
	Genetic and antigenic	Genetic only	Antigenic only	Total
A(H1N1)pdm09	63	70	80	213
A(H3N2)	1	466	0	467
B/Yamagata-lineage	171	385	228	784
B/Victoria-lineage	7	0	0	7

- Antiviral susceptibility

Influenza positive samples are screened for mutations in the virus neuraminidase gene known to confer oseltamivir and/or zanamivir resistance. Additionally, testing of influenza A (H1N1)pdm09, A(H3N2), and influenza B virus isolates for neuraminidase inhibitor susceptibility (oseltamivir and zanamivir) is performed at PHE-RVU using a functional assay. The data summarized below combine the results of both testing methods. The samples tested are routinely obtained for surveillance purposes, but diagnostic testing of patients suspected to be infected with neuraminidase inhibitor-resistant virus is also performed.

During the current 2017/18 season since week 40 2017, 164 influenza A(H3N2) have been tested for oseltamivir susceptibility; 159 are susceptible but five are resistant. Of 148 A(H3N2) viruses with zanamivir susceptibility testing data, 145 are susceptible and three are resistant. After de-duplication, 178 influenza A(H1N1)pdm09 virus have been tested for oseltamivir susceptibility and all but three were fully susceptible. Ninety-six of the 178 influenza A(H1N1)pdm09 virus were also tested for zanamivir susceptibility and were all fully susceptible. Three hundred and ninety-seven influenza B viruses have been tested for oseltamivir and all but one were fully susceptible. Three hundred and eighty-three out of the 397 influenza B viruses have also been tested for zanamivir susceptibility and all but one was fully susceptible.

- Antimicrobial susceptibility

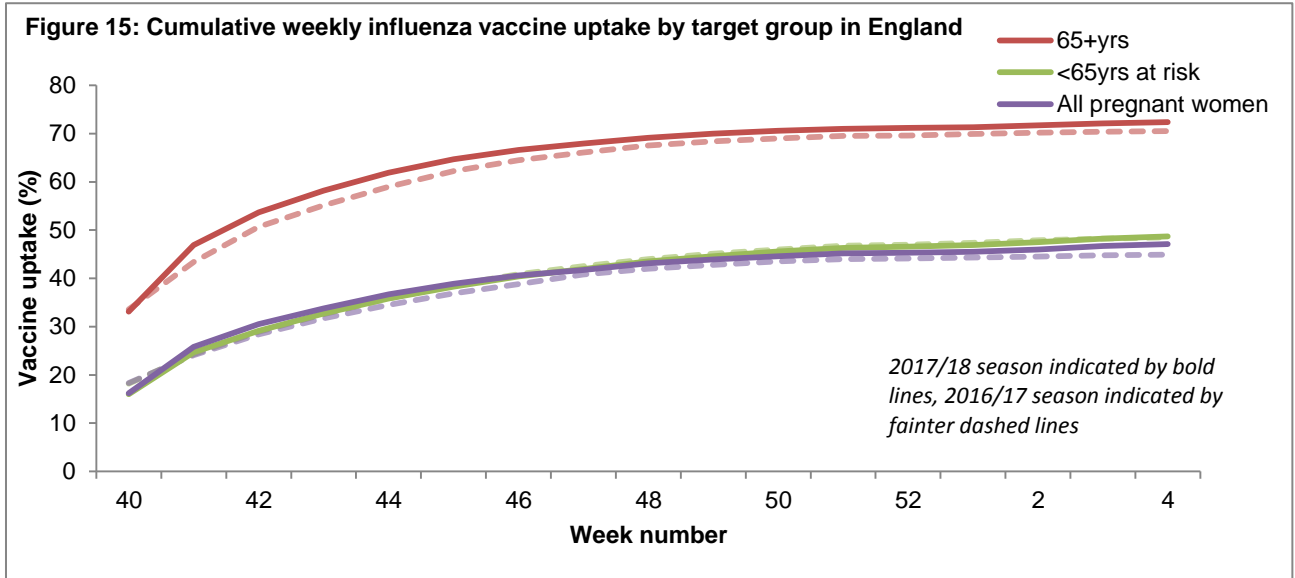
-Table 4 shows in the 12 weeks up to 18 March 2018, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired pneumonia (CAP) and the choice of antibiotics reflects the British Thoracic Society empirical guidelines for management of CAP in adults.

Table 4: Antimicrobial susceptibility surveillance in lower respiratory tract isolates, 12 weeks up to 18 March 2018, E&W

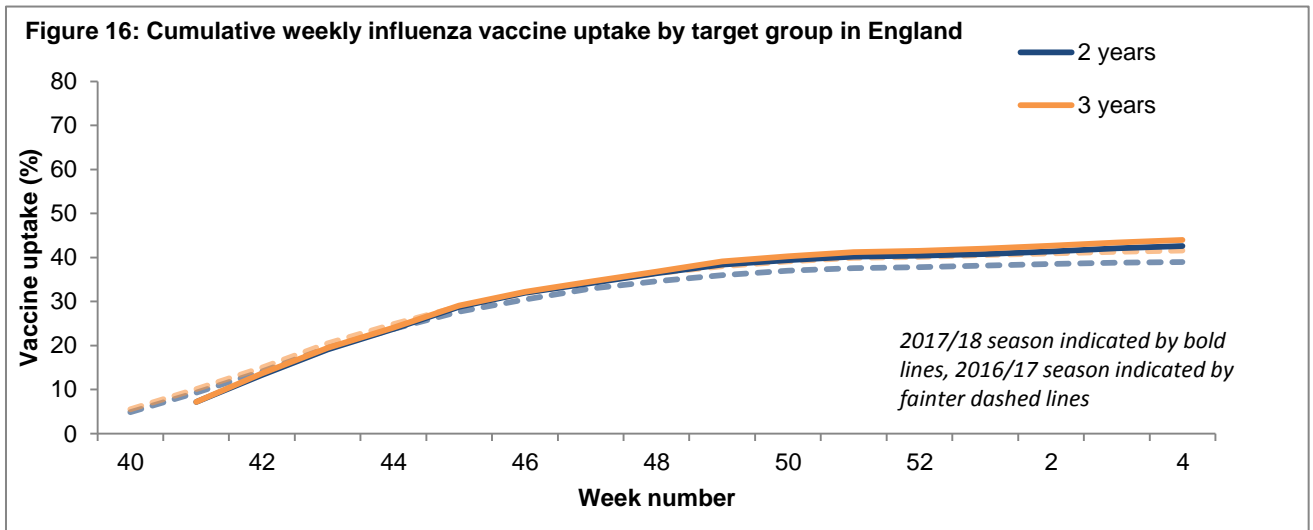
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	4681	90
	Macrolides	5157	83
	Tetracycline	5069	85
<i>H. influenzae</i>	Amoxicillin/ampicillin	21139	68
	Co-amoxiclav	22816	85
	Macrolides	7994	3
	Tetracycline	22803	99
<i>S. aureus</i>	Methicillin	8023	91
	Macrolides	8714	67
MRSA	Clindamycin	530	42
	Tetracycline	701	82
MSSA	Clindamycin	4751	77
	Tetracycline	6721	93

*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 04 2018 in 96.9% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2017/18 influenza vaccine in targeted groups was as follows (Figure 15):
 - 48.7% in under 65 years in a clinical risk group
 - 47.1% in pregnant women
 - 72.4% in 65+ year olds



- In 2017/18, all two- and three-year-olds continue to be eligible for flu vaccination, through their GPs. Up to week 04 2018 in 96.8% of GP practices reporting weekly to Immform, the provisional proportion of children in England who had received the 2017/18 influenza vaccine in targeted groups was as follows (Figure 16):
 - 42.6% in 2 year olds
 - 44.0% in 3 year olds



- Provisional data from the fifth monthly collection of influenza vaccine uptake by frontline healthcare workers show 68.7% were vaccinated by 28 February 2018 from 99.6% of all organisations, compared to 63.4% vaccinated in the previous season by 28 February 2017. The [report](#) provides uptake at national, NHS local team, “old” area teams and Trust-level.

- Provisional data from the fourth [monthly](#) collection of influenza vaccine uptake for children of school years Reception, 1, 2, 3 and 4 age (from a sample of 96.7% of all Local Authorities in England) show the provisional proportion of children in England who received the 2017/18 influenza vaccine via school, pharmacy or GP practice by 31 January 2017 in targeted groups was as follows:
 - 62.6% in children school year Reception age (4-5 years)
 - 60.9% in children school year 1 age (5-6 years)
 - 60.3% in children school year 2 age (6-7 years)
 - 57.5% in children school year 3 age (7-8 years)
 - 55.7% in children school year 4 age (8-9 years)
- Provisional data from the fourth [monthly](#) collection of influenza vaccine uptake in GP patients up to 31 January 2018 show that in 99.5% of all GP practices in England responding to the main GP survey, the proportion of people in England who received the 2017/18 influenza vaccine was as follows:
 - 48.9% in under 65 year olds in a clinical risk group
 - 47.2% in pregnant women
 - 72.6% in 65+ year olds
- Provisional data from the fourth [monthly](#) collection of influenza vaccine uptake in GP patients up to 31 January 2018 show that in 99.3% of all GP practices in England responding to the child GP survey, the proportion of people in England who received the 2017/18 influenza vaccine was as follows:
 - 42.8% in 2 year olds
 - 44.2% in 3 year olds

International Situation

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Influenza activity remained high but appeared to have peaked in some countries in the temperate zone of the northern hemisphere. In the temperate zone of the southern hemisphere activity remained at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.

- [Europe](#) updated on 16 March 2018 (Joint ECDC-WHO Europe Influenza weekly update)

In week 10/2018, overall influenza continues to circulate widely in the Region, apart from some eastern European countries that have only recently reported increased activity. Both influenza virus types A and B were co-circulating with a higher proportion of type B viruses and with B/Yamagata continuing to be the dominant lineage.

In week 10/2018, influenza activity was at variable levels across the region. Of 46 Member States and areas reporting on intensity, Luxembourg reported very high intensity, while the Czech Republic, Finland, Germany and Sweden reported high intensity; 24 Member States including the United Kingdom (Wales) reported medium intensity and 18 Member States including the United Kingdom (England, Northern Ireland and Scotland) low intensity.

For week 10/2018, 1, 240 (50.6%) of 2 449 sentinel specimens tested positive for influenza viruses; 41% were type A and 59% were type B. Of 362 subtyped A viruses, 73% were influenza A(H1N1)pdm09 and 27% A(H3N2). Of 406 type B viruses ascribed to a lineage, 97.5% were B/Yamagata and 2.5% B/Victoria.

In week 10, the overall numbers of reported laboratory confirmed ICU cases continued to decrease, 203 laboratory-confirmed influenza-infected cases were reported, with the majority reported by the United Kingdom (56%). A total of 186 cases were reported from other wards, with the majority reported from Ireland (44%).

Since week 40/2017, type A influenza viruses have been detected in 52.5% and type B in 47.5% of cases in ICUs. Of 1 357 subtyped influenza A viruses, 58% were A(H1N1)pdm09 and 42% A(H3N2). Of 4 165 cases with known age, 46% were 15–64 years old and 47% 65 years and older.

For week 10/2018, data from 17 countries or regions reporting to the [EuroMOMO](#) project were received and included in the pooled analyses of all-cause excess mortality. Excess mortality from all causes has been significantly elevated over recent months in the south-western part of the European region. However, mortality seems to be declining in some countries.

An [early risk assessment](#) based on data from EU/EEA countries was published by ECDC on 20 December 2017. First detections indicated circulation of A(H3N2) and B/Yamagata viruses in the highest proportions. As the A(H3N2) subtype dominated last season, a high proportion of the population should be protected.

- [United States of America](#) updated on 16 March 2018 (Centre for Disease Control report)

During week 10, influenza activity decreased in the United States.

Overall, influenza A(H3) viruses have predominated this season. However, in recent weeks the proportion of influenza A viruses has declined, and during week 10, the numbers of influenza A and influenza B viruses reported were similar. The percentage of respiratory specimens testing positive for influenza in clinical laboratories decreased.

A cumulative rate of 89.9 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.

The proportion of outpatient visits for influenza-like illness (ILI) was 3.3%, which is above the national baseline of 2.2%.

- [Canada](#) updated on 16 March 2018 (Public Health Agency report)

Overall, during week 10, influenza activity in Canada remains elevated in many part of the country, although activity has decreased across all indicators compared to the previous week.

In week 10, detections of influenza B continue to be greater than those of influenza A.

In week 10, 1.8% of visits to healthcare professionals were due to influenza-like illness; a decrease from the previous week.

To date this season, 4,086 influenza-associated hospitalizations were reported by participating provinces and territories. Among the hospitalizations, 2,936 (72%) were associated with influenza A, and 2,750 cases (67%) were in adults 65 years of age or older. Additionally, 394 ICU admissions and 201 deaths have been reported to date.

A [Canadian study](#) reported a mid-season estimate of influenza vaccine effectiveness of 42% overall. The study confirmed an anticipated low vaccine effectiveness of 17% against the A(H3N2) strain and moderate vaccine effectiveness against influenza B of 55%, which is circulating at high levels in Canada this season.

- [Global influenza update](#) updated on 19 March 2018 (WHO website)

Influenza activity remained high but appeared to have peaked in some countries in the temperate zone of the northern hemisphere. In the temperate zone of the southern hemisphere activity remained at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.

In Canada, influenza activity remained elevated but appeared to have peaked in week 07/2018. Influenza B continued to be the most frequently detected virus. In the United States of America (USA), influenza like illness (ILI) and influenza activity decreased, however hospitalization rate due to influenza remained high, especially in adults aged 65 years and older. Influenza A(H3N2) and B viruses co-circulated.

In Europe, influenza activity remained high in the most of the European region. All seasonal influenza subtypes were present in the region, with influenza B as the predominant virus. In Eastern Europe, influenza activity continued to increase with influenza A (H1N1)pdm09, influenza A(H3N2) and influenza B-Yamagata co-circulating.

In Northern Africa, influenza activity decreased across the region. Detections of influenza A(H1N1)pdm09 and B viruses remained high in Egypt.

In Western Asia, influenza activity appeared to decrease across the region, with all seasonal influenza subtypes present in the region. In East Asia, influenza activity appeared to decrease across the region but remained elevated in China.

In Central Asia, influenza activity increased in recent weeks, with all seasonal influenza subtypes co-circulating.

In the Caribbean, influenza activity varied by country. All seasonal subtypes of influenza continue to be detected in the region.

In Western Africa, influenza activity remained low across the region.

In Southern Asia and South East Asia, low levels of influenza activity were reported.

The WHO GISRS laboratories tested more than 281,243 specimens between 05 February 2018 to 18 February 2018. 90,570 were positive for influenza viruses, of which 44,502 (49.1%) were typed as influenza A and 46,068 (50.9%) as influenza B. Of the sub-typed influenza A viruses, 7,773 (58.2%) were influenza A(H1N1)pdm09 and 5,574 (41.8%) were influenza A(H3N2). Of the characterized B viruses, 5,835 (94.4%) belonged to the B-Yamagata lineage and 346 (5.6%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 02 March 2018 (WHO website)

Influenza A(H5) viruses

Between [25 January 2018 and 02 March 2018](#), no new laboratory-confirmed human case of influenza A(H5) virus infection were reported to WHO.

Influenza A(H5) subtype viruses have the potential to cause disease in humans and thus far, no human cases, other than those with influenza A(H5N1) and A(H5N6) viruses, have been reported to WHO. According to reports received by the World Organisation for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in Africa, Europe and Asia.

Influenza A(H7N4)

On [25 January 2018 and 02 March 2018](#), one laboratory-confirmed human case of influenza A(H7N4) virus infection was reported to WHO from the Jiangsu province in China.

Influenza A(H7N9)

Between [25 January 2018 and 02 March 2018](#), one new laboratory-confirmed human case of influenza A(H7N9) virus infection was reported to WHO from China.

Since 2013, a total of 1,567 laboratory-confirmed cases of human infection with avian influenza A(H7N9) viruses, including at least 615 deaths, have been reported to WHO.

Influenza A(H9N2)

Between [25 January 2018 and 02 March 2018](#), three laboratory-confirmed human cases of A(H9N2) virus infection were reported to WHO from China.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 21 March 2018

Up to 21 March 2018, a total of four cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (two imported and two linked cases) have been confirmed in the UK. On-going surveillance has identified 1,161 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

On [4 March 2018](#), the National IRH focal point of Oman reported one additional case of Middle East respiratory syndrome coronavirus (MERS-CoV).

Between [9 December 2017 and 17 January 2018](#), the National IHR Focal Point of The Kingdom of Saudi Arabia reported 20 additional cases of Middle East Respiratory Syndrome (MERS), including nine deaths. In addition, one death from a previously reported case was reported to WHO.

Globally, since September 2012, WHO has been notified of 2,143 laboratory-confirmed cases of infection with MERS-CoV, including at least 750 related deaths. Further information on management and guidance of possible cases is available [online](#). The latest ECDC MERS-CoV risk assessment can be found [here](#), where it is highlighted that risk of widespread transmission of MERS-CoV remains low.

Acknowledgements

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Sources of flu data

- [Clinical surveillance through primary care in the UK](#)
- [Outbreak reporting](#)
- [FluSurvey](#)
- [MOSA](#)
- [Real time syndromic surveillance](#)
- MEM threshold [methodology paper](#) and [UK pilot paper](#)

Disease severity and mortality data

- [USISS](#) system
- [EuroMOMO](#) mortality project

Vaccination

- Seasonal influenza vaccine programme ([Department of Health Book](#))
- Childhood flu programme information for healthcare practitioners ([Public Health England](#))
- 2017/18 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))