



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

15 March 2018 – Week 11 report (up to week 10 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 10 (ending 11 March 2018), influenza continues to circulate, although activity has now peaked. Influenza A and B are co-circulating. The Department of Health has issued an [alert](#) on the prescription of antiviral medicines by GPs.

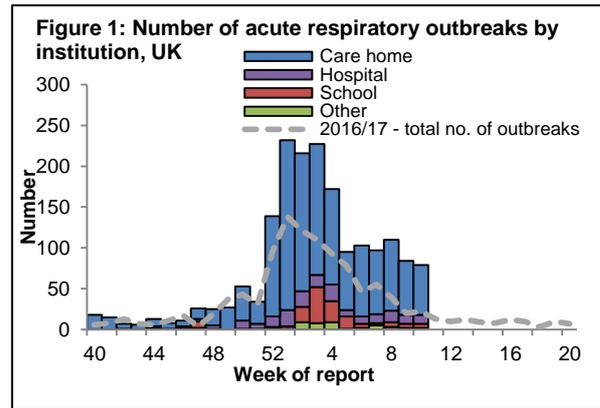
- [Community influenza surveillance](#)
 - Seventy-nine new acute respiratory outbreaks have been reported in the past 7 days compared to 84 in the previous week. Sixty-one outbreaks were from care homes, where 18 tested positive for influenza A(unknown subtype) and 16 were positive for influenza B. Eleven outbreaks were from hospitals where five tested positive for influenza A(unknown subtype) and four tested positive for influenza B. Four outbreaks were from schools where one tested positive for influenza A(unknown subtype). 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 10, the overall weekly influenza-like illness (ILI) GP consultation rate was 20.3 per 100,000 in England, compared to 18.3 per 100,000 in week 09. 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) remain above seasonally expected levels. A similar picture was noted for NHS 111 cold/flu calls. Emergency attendances for acute respiratory infections remained above baseline levels but stable during week 10.
- [Influenza-confirmed hospitalisations](#)
 - In week 10, there were 114 new admissions to ICU/HDU with confirmed influenza (10 influenza A(H1N1)pdm09, 12 influenza A(H3N2), 42 influenza A(unknown subtype) and 50 influenza B) reported across the UK (114/144 Trusts in England) through the USISS mandatory ICU scheme with a rate of 0.26 per 100,000 for England, compared to 0.33 in the previous week. This is above the baseline threshold of 0.05 per 100,000 for the 2017/18 season.
 - In week 10, there were 281 hospitalised confirmed influenza cases (23 influenza A(H1N1)pdm09, 81 influenza A(H3N2), 68 influenza A(unknown subtype) and 109 influenza B) reported through the USISS sentinel hospital network (all levels of care) (16 NHS Trusts across England), with a rate of 4.86 per 100,000 compared to 5.08 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(unknown subtype) and two influenza B) reported from the six Severe Respiratory Failure centres in the UK in week 10.
- [All-cause mortality data](#)
 - In week 10 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 10 2018.
- [Microbiological surveillance](#)
 - Twenty-nine 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% in week 10 compared to 48.7% in week 09.
 - Six hundred and nineteen positive detections were recorded through the DataMart scheme (231 influenza A(H3), 98 influenza A(unknown subtype), 26 influenza A(H1N1)pdm09 and 264 influenza B) with a positivity of 25.9% in week 10 compared to 26.9% in week 09, 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 fourth monthly collection of influenza vaccine uptake by frontline healthcare workers show 67.6% were vaccinated by 31 January 2018, compared to 63.0% vaccinated in the previous season by 31 January 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 in the temperate zone of the northern hemisphere while in the temperate zone of the southern hemisphere activity was at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.

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

- Acute respiratory disease outbreaks

- Seventy-nine new acute respiratory outbreaks have been reported in the past 7 days compared to 84 in the previous week. Sixty-one outbreaks were from care homes, where 18 tested positive for influenza A(unknown subtype) and 16 were positive for influenza B. Eleven outbreaks were from hospitals where five tested positive for influenza A(unknown subtype) and four tested positive for influenza B. Four outbreaks were from schools where one tested positive for influenza A(unknown subtype). 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 respcidsc@phe.gov.uk



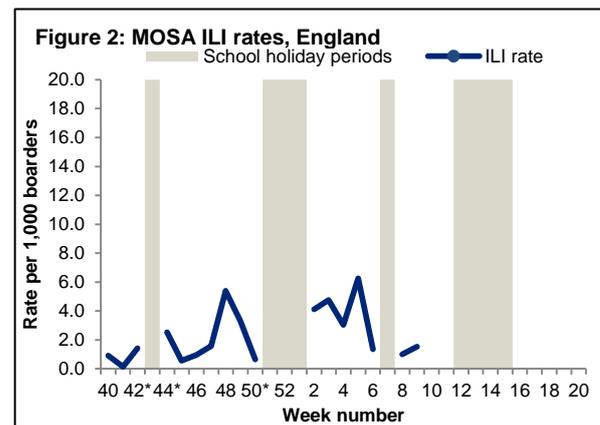
- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

- 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 09 was 1.5 per 1,000 boarders compared to 1.0 per 1,000 boarders in week 08.

-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.



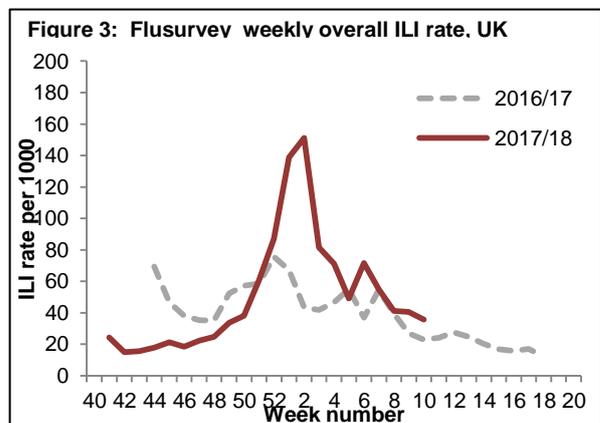
*represents weeks where not all schools will be reporting due to varying school holiday periods.

- 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 10 was 35.7 per 1,000 (101/2,826 people reported at least 1 ILI) (Figure 3) compared to 40.5 per 1,000 in week 09.

- 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 10, 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.

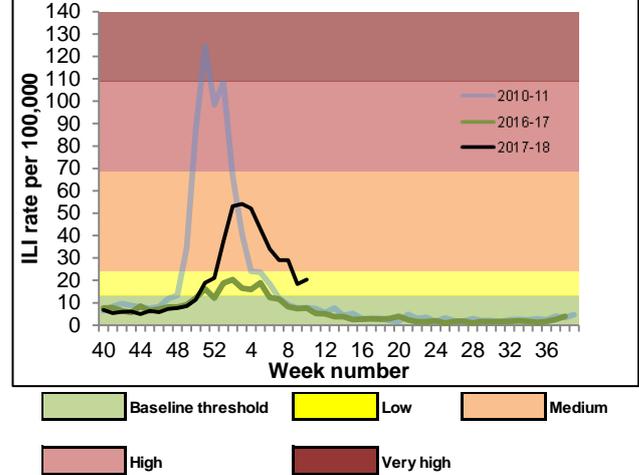
- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance was at 20.3 per 100,000 in week 10 compared to 18.3 per 100,000 in week 09. 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 (27.6 per 100,000) and 75+ year olds (20.8 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 10, 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, Wales and Scotland (22.7 per 100,000; 34.1 per 100,000 and 32.1 per 100,000 respectively).

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
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
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	25.4
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
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

*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 15.3 per 100,000 in week 10 (Figure 5).

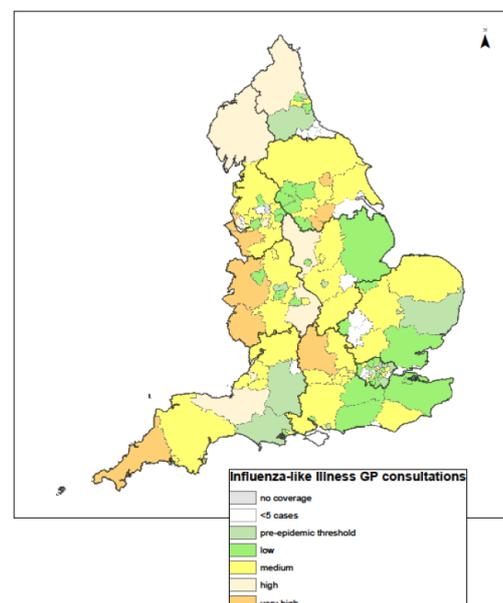
During week 10, GP In Hours and Out of Hours consultations for influenza-like illnesses (ILI) remain above seasonally expected levels. A similar picture was noted for NHS 111 cold/flu calls. Emergency attendances for acute respiratory infections remained above baseline levels but stable during week 10.

Figure 5 represents a map of GP ILI consultation rates in week 10 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](#).

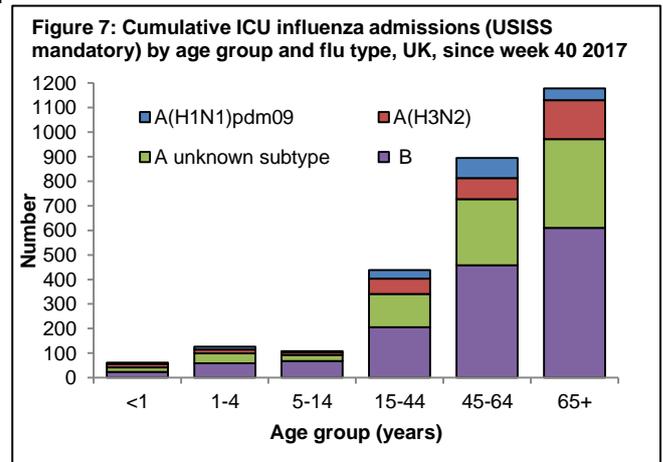
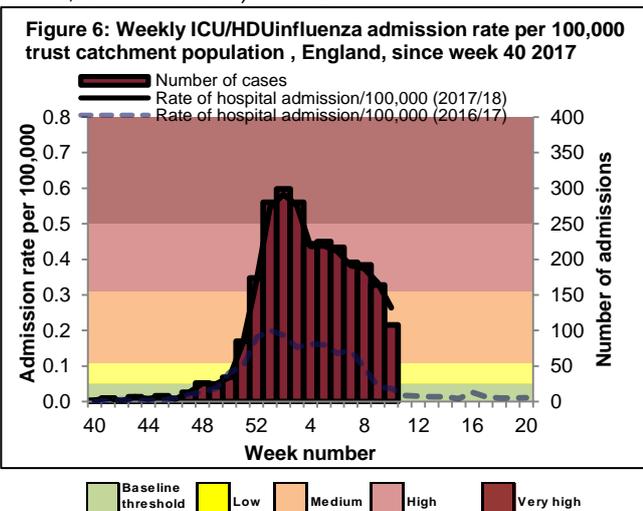
Figure 5: Map of GP ILI consultation rates in week 10



In week 10 2018 there were 114 new admissions to ICU/HDU with confirmed influenza (10 influenza A(H1N1)pdm09, 12 influenza A(H3N2), 42 influenza A(unknown subtype) and 50 influenza B) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (114 Trusts in England). There were 281 hospitalised confirmed influenza cases (23 influenza A(H1N1)pdm09, 81 influenza A(H3N2), 68 influenza A(unknown subtype) and 109 influenza B) were reported through the USISS sentinel hospital network across England (16 Trusts).

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 10)
- In week 10, there were 114 new admissions to ICU/HDU with confirmed influenza (10 influenza A(H1N1)pdm09, 12 influenza A(H3N2), 42 influenza A(unknown subtype) and 50 influenza B) reported across the UK (114/144 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.26 per 100,000 compared to 0.33 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 13 deaths were reported to have occurred in week 10 in the UK.

A total of 2,808 new admissions (187 influenza A(H1N1)pdm09, 348 influenza A(H3N2), 848 (influenza A(unknown subtype) and 1,425 influenza B) and 327 confirmed deaths have been reported in the UK since week 40 2017.

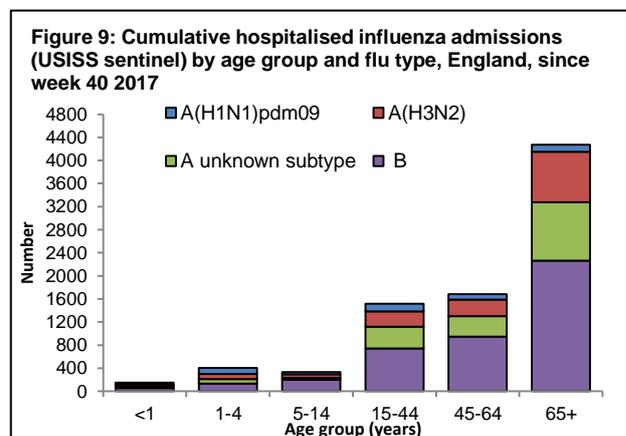
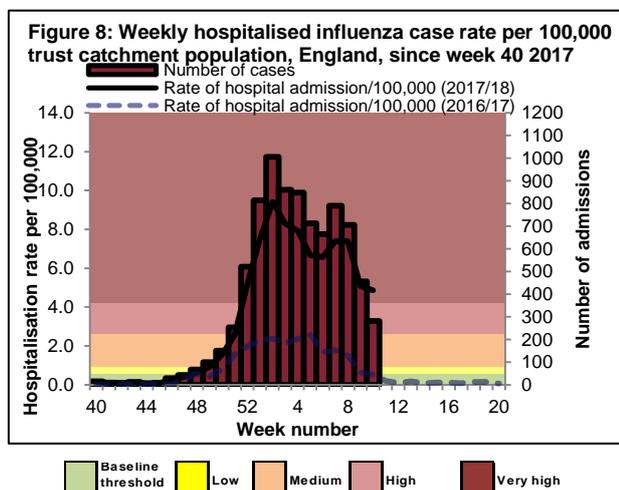


*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: <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 09)

- In week 10, there were 281 hospitalised confirmed influenza cases (23 influenza A(H1N1)pdm09, 81 influenza A(H3N2), 68 influenza A(unknown subtype) and 109 influenza B) reported from 16 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 4.86 per 100,000 compared to 5.08 per 100,000 in the previous week (Figures 6 and 7), this is above the very high impact threshold of 4.20 per 100,000.

A total of 8,366 hospitalised confirmed influenza admissions (528 influenza A(H1N1)pdm09, 1,608 influenza A(H3N2), 1,881 influenza A(unknown subtype) and 4,349 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 10)

- In week 10, there were three new influenza admissions (one influenza A(unknown subtype) and two influenza B) reported from the six Severe Respiratory Failure (SRF) centres in the UK. Since week 40, a total of 49 laboratory confirmed influenza admissions (eight influenza A(H1N1)pdm09, four influenza A(H3N2), 14 influenza A(unknown subtype) and 23 influenza B) were reported from the SRFs for the season to date.

In week 10 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 10 2018.

- All-cause death registrations, England and Wales

- In week 09 2018, an estimated 10,854 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a decrease compared to the 12,142 estimated death registrations in week 08 2018.

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

- In week 10 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 10 2018 (Table 2).

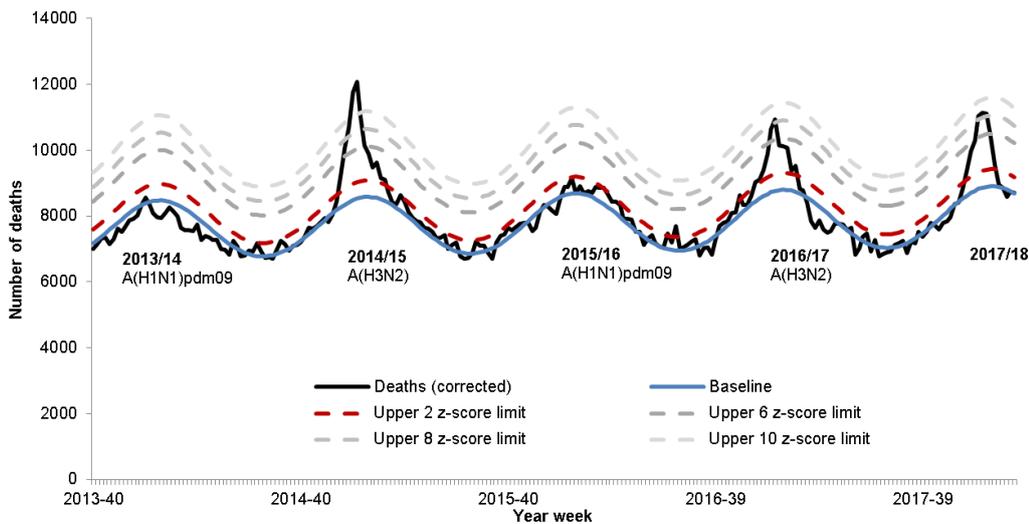
Table 2: Excess mortality by UK country, for all ages*

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

* 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

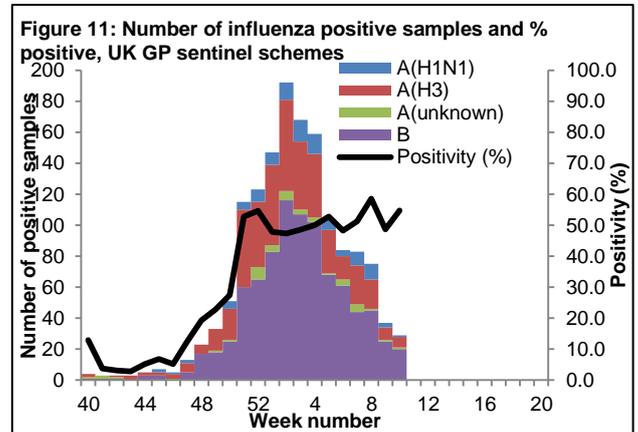


In week 10 2018, 29 samples tested positive for influenza (one influenza A(H1N1)pdm09, seven influenza A(H3), one influenza A(unknown subtype) and 20 influenza B) through the UK GP sentinel schemes, with an overall positivity of 54.7% compared to 48.7% in week 09. Six hundred and nineteen positive detections were recorded through the DataMart scheme (231 influenza A(H3), 98 influenza A(unknown subtype), 26 influenza A(H1N1)pdm09 and 264 influenza B) with a positivity of 25.9% in week 10 compared to 26.9% in week 09, 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).

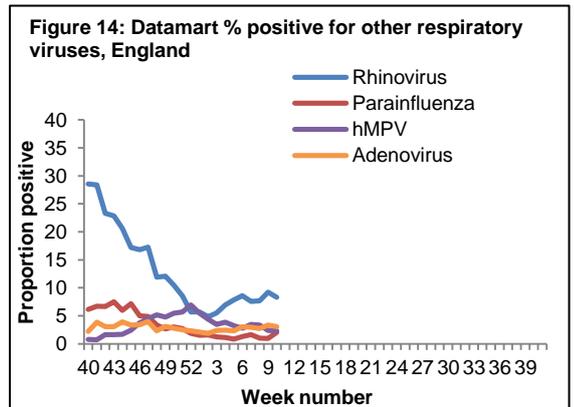
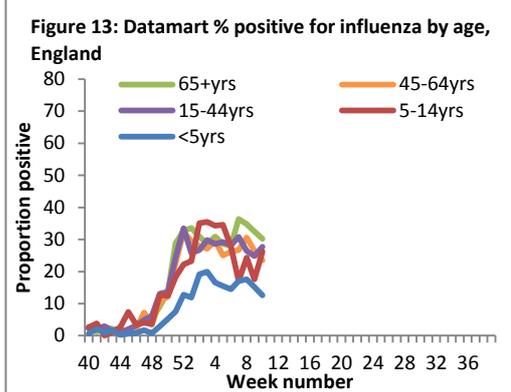
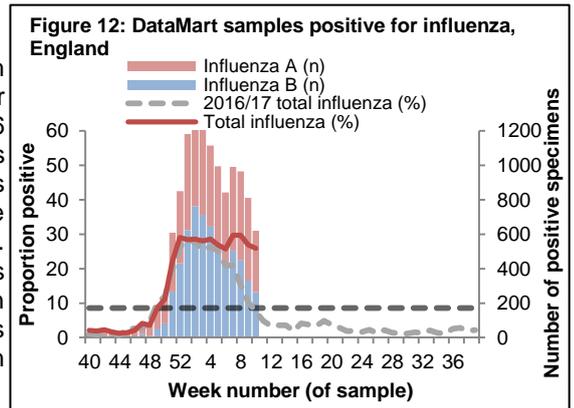
Since week 40, a total of 1,466 samples (449 influenza A(H3), 44 influenza (unknown subtype), 103 influenza A(H1N1)pdm09 and 870 influenza B) tested positive for influenza through this scheme.



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

- Respiratory DataMart System (England)

In week 10 2018, out of the 2,393 respiratory specimens reported through the Respiratory DataMart System, 619 samples (25.9%) were positive for influenza (231 influenza A(H3), 98 influenza A(unknown subtype), 26 influenza A(H1N1)pdm09 and 264 influenza B) (Figure 12), which is above the MEM baseline threshold for this season of 8.6%. This compares to 26.9% in week 09. The highest positivity for influenza by age group was seen in the 65+ year olds at 30.2% in week 10 (Figure 13). The overall positivity for RSV was low at 1.0% in week 10. Rhinovirus positivity decreased slightly at 8.3% in week 10 compared to 9.2% in week 09. Adenovirus, parainfluenza and human metapneumovirus (hMPV) positivity remained low at 3.0%, 2.1% and 2.3% 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 1,264 influenza viruses detected since week 37 (Table 3). Six hundred and seventy four influenza B viruses have been analysed; 667 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 387 A(H3N2) influenza viruses detected since late summer, showed that the majority belong to genetic subclade 3C.2a, with 124 belonging to a cluster within this genetic subclade designated as 3C.2a1. Four 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 203 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	55	62	86	203
A(H3N2)	1	386	0	387
B/Yamagata-lineage	140	305	222	667
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, 162 influenza A(H3N2) have been tested for oseltamivir susceptibility; 157 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, 176 influenza A(H1N1)pdm09 virus have been tested for oseltamivir susceptibility and all but three were fully susceptible. Ninety-six of the 176 influenza A(H1N1)pdm09 virus were also tested for zanamivir susceptibility and were all fully susceptible. Three hundred and ninety-six influenza B viruses have been tested for oseltamivir and all but one were fully susceptible. Three hundred and eighty-three out of the 396 influenza B viruses have also been tested for zanamivir susceptibility and all but one was fully susceptible.

- Antimicrobial susceptibility

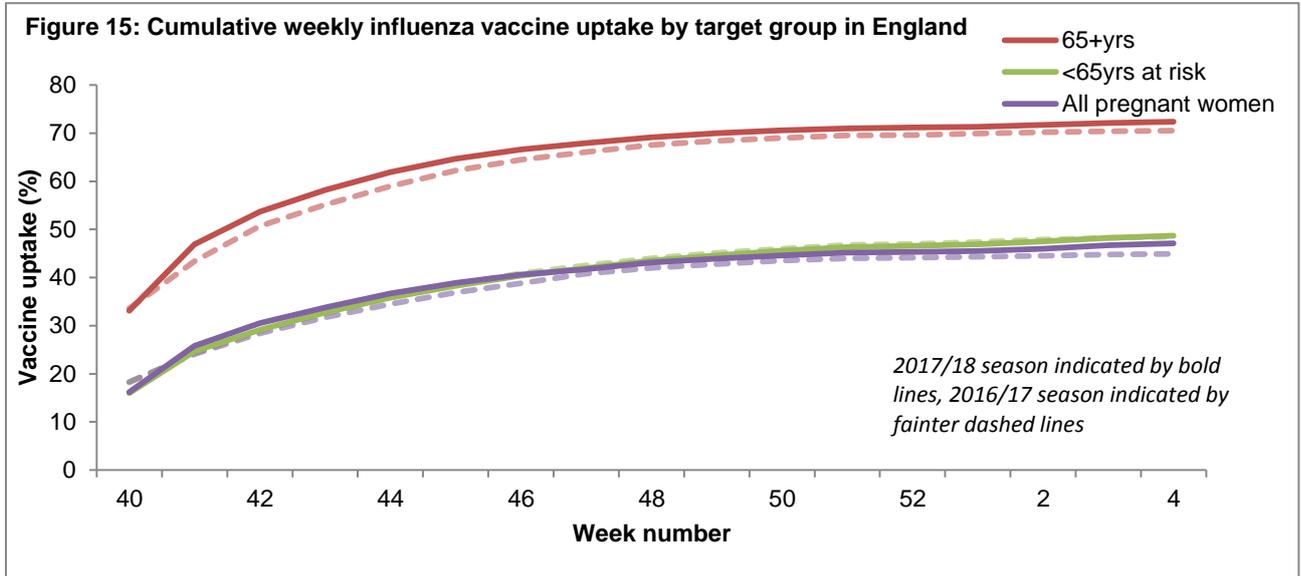
-Table 4 shows in the 12 weeks up to 11 March 2018, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired pneumonia (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 11 March 2018, E&W

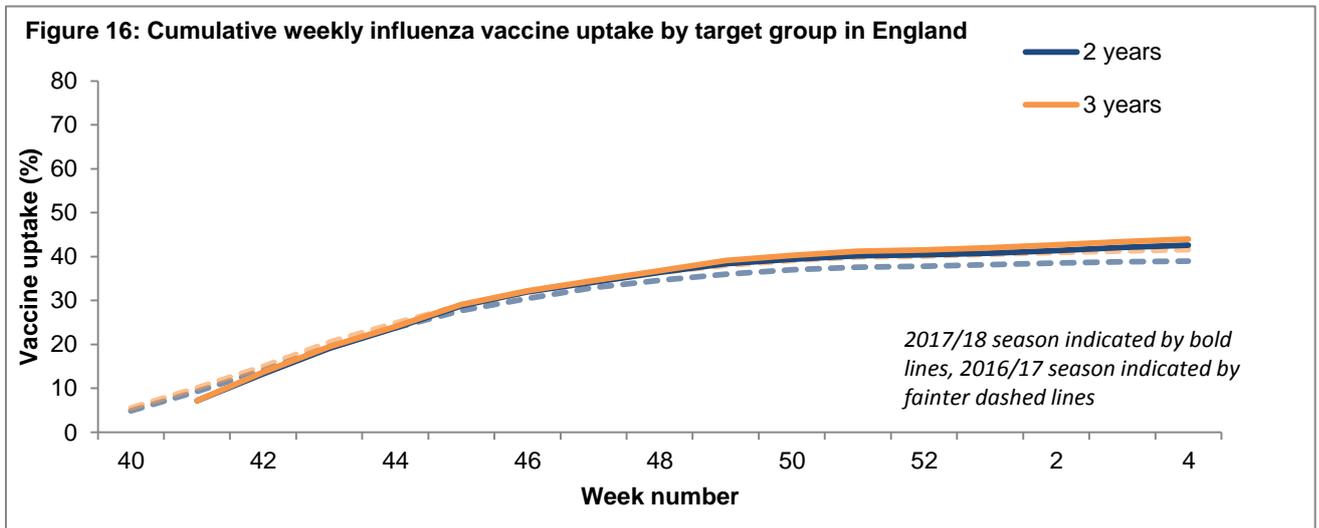
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	4733	90
	Macrolides	5206	83
	Tetracycline	5101	85
<i>H. influenzae</i>	Amoxicillin/ampicillin	20981	68
	Co-amoxiclav	22625	85
	Macrolides	8146	3
	Tetracycline	22629	99
<i>S. aureus</i>	Methicillin	7935	91
	Macrolides	8652	67
MRSA	Clindamycin	526	43
	Tetracycline	696	82
MSSA	Clindamycin	4656	77
	Tetracycline	6631	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 fourth monthly collection of influenza vaccine uptake by frontline healthcare workers show 67.6% were vaccinated by 31 January 2018 from 99.2% of all organisations, compared to 63.0% vaccinated in the previous season by 31 January 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 in the temperate zone of the northern hemisphere while in the temperate zone of the southern hemisphere activity was at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.

- [Europe](#) updated on 09 March 2018 (Joint ECDC-WHO Europe Influenza weekly update)

In week 09/2018, overall influenza activity was widespread in the majority of reporting countries, intensity in most countries was reported as low or medium. Both influenza virus types A and B were co-circulating with a higher proportion of type B viruses. Different proportions of circulating influenza virus types and A subtypes were observed between countries.

In week 09/2018, influenza activity was at variable levels across the region. Of 45 Member States and areas reporting on intensity, Luxembourg reported very high intensity, while Albania, the Czech Republic, Finland, Germany, Slovakia, Sweden and Ukraine reported high intensity; 26 Member States including the United Kingdom (Wales) reported medium intensity and 14 Member States including the United Kingdom (England, Northern Ireland and Scotland) low intensity.

For week 09/2018, 1, 405 (49%) of 2 885 sentinel specimens tested positive for influenza viruses; 39% were type A and 61% were type B. Of 386 subtyped A viruses, 69% were influenza A(H1N1)pdm09 and 31% A(H3N2). Of 478 type B viruses ascribed to a lineage, 98% were B/Yamagata and 2% B/Victoria.

In week 09, the overall numbers of reported laboratory confirmed ICU cases continued to decrease, 205 laboratory-confirmed influenza-infected cases were reported, with the majority reported by the United Kingdom (58%). A total of 504 cases were reported from other wards, with the majority reported from Denmark (59%) and Ireland (18%).

Since week 40/2017, type A influenza viruses have been detected in 53% and type B in 47% of cases in ICUs. Of 1 240 subtyped influenza A viruses, 58% were A(H1N1)pdm09 and 42% A(H3N2). Of 3 798 cases with known age, 47% were 15–64 years old and 47% 65 years and older.

For week 09/2018, 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.

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 09 March 2018 (Centre for Disease Control report)

During week 09, 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 9, 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 86.3 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.

The proportion of outpatient visits for influenza-like illness (ILI) was 3.7%, which is above the national baseline of 2.2%.

- [Canada](#) updated on 09 March 2018 (Public Health Agency report)

Overall, influenza activity in Canada peaked in week 07 however activity remains high and is slowly decreased in many parts of the country.

In week 09, detections of influenza B continue to be greater than those of influenza A.

In week 09, 3.2% of visits to healthcare professionals were due to influenza-like illness; similar to compared to the previous week, and above the 5-year average.

To date this season, 3,892 influenza-associated hospitalizations were reported by participating provinces and territories¹. Among the hospitalizations, 2,861 (74%) were associated with influenza A, and 2,629 cases (68%) were in adults 65 years of age or older.

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 05 March 2018 (WHO website)

Influenza activity remained high in the temperate zone of the northern hemisphere while in the temperate zone of the southern hemisphere activity was at inter-seasonal levels. Worldwide, influenza A and influenza B accounted for a similar proportion of influenza detections.

In Canada, influenza activity remained elevated with the percent of samples testing positive for influenza showing a decrease while influenza-like illness (ILI) activity continued to increase and was above the 5-year average for this time of the year. In the United States of America (USA), influenza activity remained high, but appeared to have decreased, with influenza A (H3N2) viruses most frequently detected.

In Europe, influenza activity remained high in most countries. All seasonal influenza subtypes co-circulated across the region, with influenza B as the predominant virus. ILI and influenza detections increased further in most countries in Eastern and Northern Europe, and appeared to have peaked in a few countries in Southwestern Europe.

In Northern Africa, influenza detections remained high in Egypt and decreased in Algeria and Morocco, with co-circulation of influenza A and B.

In Western Asia, influenza activity continued to be reported across the region.

In Central Asia, influenza A(H3N2) and B-Yamagata lineage detections increased across the region in recent weeks. In East Asia, influenza activity remained high across the region but appeared to have peaked in week 03.

In the Caribbean and Central American countries, influenza activity remained low and varied by country.

In Western Africa, influenza activity remained low across the region. In Middle Africa, there were no updates available for this reporting period. In Eastern Africa, influenza A(H1N1)pdm09 and influenza B detections continued to be reported in Madagascar.

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 04 February 2018 (WHO website)

Influenza A(H5) viruses

Between [08 December 2017 to 25 January 2018](#), one new laboratory-confirmed human case of influenza A(H5N6) virus infection was reported to WHO from China.

A total of 19 laboratory-confirmed cases of human infection with influenza A(H5N6) virus, including six deaths, have been reported to WHO from China since 2014.

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 [14 February 2018](#), the National Health and Family Planning Commission (NHFPC) of China notified the World Health Organization (WHO) of one case of human infection with avian influenza A(H7N4) virus. This is the first human case of avian influenza A(H7N4) infection to be reported worldwide.

Influenza A(H7N9)

Between [08 December 2017 to 25 January 2018](#), one new laboratory-confirmed human cases of influenza A(H7N9) virus infection was reported to WHO from China.

Since 2013, a total of 1,566 laboratory-confirmed cases of human infection with avian influenza A(H7N9) viruses, including at least 613 deaths, have been reported to WHO.

Influenza A(H1N1) variant viruses

On [16 January 2018](#), Switzerland informed WHO of a case of human infection with a swine influenza A(H1N1)v virus.

Influenza A(H3N2) variant viruses

Between [08 December 2017 to 25 January 2018](#), one human infection with an influenza A(H3N2)v virus was reported in the U.S. in the state of Iowa.

Since reporting of novel influenza A viruses became nationally notifiable in 2005, 434 human infections with influenza A(H3N2)v viruses have been reported to the U.S. CDC and 62 of these occurred in 2017.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 14 March 2018

Up to 14 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 1,158 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

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.

On [2 January 2018](#), the National IHR Focal Point of Malaysia reported one case of Middle East Respiratory Syndrome Coronavirus (MERS-CoV).

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.

This report was prepared by the Influenza section, Respiratory Diseases Department, Centre for Infectious Disease Surveillance and Control, Public Health England. We are grateful to all who provided data for this report including the RCGP Research and Surveillance Centre, the PHE Real-time Syndromic Surveillance team, the PHE Respiratory Virus Unit, the PHE Modelling and Statistics unit, the PHE Dept. of Healthcare Associated Infection & Antimicrobial Resistance, PHE regional microbiology laboratories, Office for National Statistics, the Department of Health, Health Protection Scotland, National Public Health Service (Wales), the Public Health Agency Northern Ireland, the Northern Ireland Statistics and Research Agency, QSurveillance[®] and EMIS and EMIS practices contributing to the QSurveillance[®] database.

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](#))