



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

03 May 2018 – Week 18 report (up to week 17 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 17 (ending 29 April 2018), influenza continues to circulate with all indicators below baseline threshold levels. The Department of Health has issued an [alert](#) on the prescription of antiviral medicines by GPs.

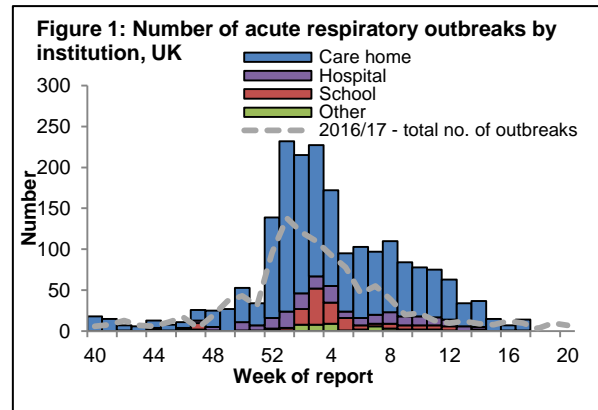
- [Community influenza surveillance](#)
 - Fourteen new acute respiratory outbreaks have been reported in the past 7 days compared to seven in the previous week. 13 outbreaks were from care homes, where three tested positive for influenza A(unknown subtype) and two for influenza B. The remaining outbreak was from the Other settings category with no test results available.
- [Overall weekly influenza GP consultation rates across the UK](#)
 - In week 17, the overall weekly influenza-like illness (ILI) GP consultation rate was 3.4 per 100,000 in England, compared to 4.0 per 100,000 in week 16. This is below the baseline threshold of 13.1 per 100,000 for this season. In the devolved administrations, ILI rates continued to decrease or remain similar to the previous week and are below baseline levels.
 - Through the Syndromic Surveillance systems, GP In Hours and Out of Hours consultations for influenza like illness and NHS 111 calls for cold/flu continued to decrease and are similar to baseline levels.
- [Influenza-confirmed hospitalisations](#)
 - In week 17, there were six new admissions to ICU/HDU with confirmed influenza (three influenza A(unknown subtype) and three influenza B) reported across the UK (117/144 Trusts in England) through the USISS mandatory ICU scheme with a rate of 0.01 per 100,000 for England, compared to 0.07 in the previous week. This is now below the baseline threshold of 0.05 per 100,000 for the 2017/18 season.
 - In week 17, there were 22 hospitalised confirmed influenza cases (two influenza A(H1N1)pdm09, seven influenza A(H3N2), nine influenza A(unknown subtype) and four influenza B) reported through the USISS sentinel hospital network (all levels of care) (17 NHS Trusts across England), with a rate of 0.29 per 100,000 compared to 0.70 per 100,000 in the previous week. This is now below the baseline threshold of 0.56 per 100,000 for the 2017/18 season.
 - There were no new influenza admissions reported from the six Severe Respiratory Failure centres in the UK in week 17.
- [All-cause mortality data](#)
 - In week 12 2018, no statistically significant excess all-cause mortality by week of death was seen overall and by age group in England and Wales, through the EuroMOMO algorithm. In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in Scotland and Northern Ireland in week 17 2018.
- [Microbiological surveillance](#)
 - One sample tested positive for influenza (one influenza A(H3)) through the UK GP sentinel schemes, with an overall positivity of 20.0% in week 17 compared to the same in week 16.
 - Twenty-nine detections were recorded through the DataMart scheme (12 influenza A(H3), seven influenza A(unknown subtype), one influenza A(H1N1)pdm09 and nine influenza B) with a positivity of 3.0% in week 17 compared to 5.6% in week 16, which is below 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 returned to inter-seasonal levels in most of the countries in the temperate zone of the northern hemisphere except for Eastern Europe. In the temperate zone of the southern hemisphere, influenza activity remained below the seasonal thresholds. Worldwide, seasonal influenza subtypes A and B accounted for approximately the same proportion of influenza detections.

Fourteen new acute respiratory outbreaks were reported in the past 7 days.

- Acute respiratory disease outbreaks

- Fourteen new acute respiratory outbreaks have been reported in the past 7 days compared to seven in the previous week. 13 outbreaks were from care homes, where three tested positive for influenza A(unknown subtype) and two for influenza B. The remaining outbreak was from the Other settings category with no test results available.

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



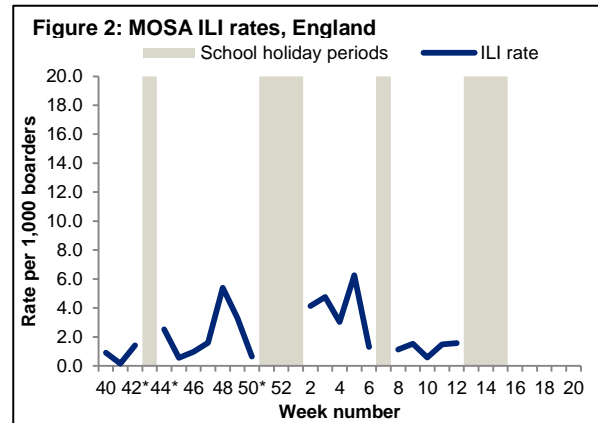
- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

- 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 16 was 0.0 per 1,000 boarders compared to 1.6 per 1,000 boarders in week 12.

-Since week 40, 47 outbreaks have been reported from 14 MOSA schools, with a total of 251 ILI cases identified. Out of the 47 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.



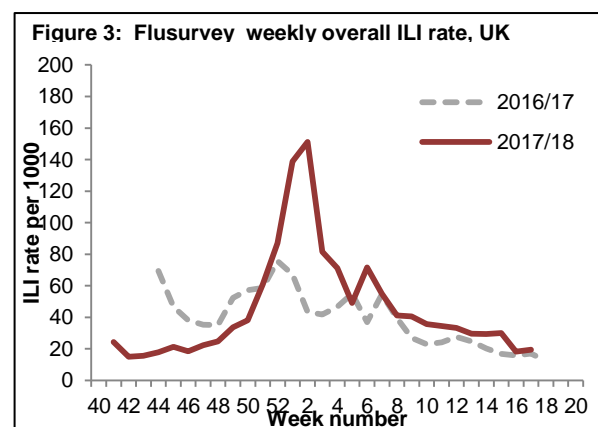
*represents weeks where not all schools will be reporting due to varying school holiday periods.

- 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 17 was 19.5 per 1,000 (51/2,612 people reported at least 1 ILI) (Figure 3) compared to 18.2 per 1,000 in week 16.

- 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.



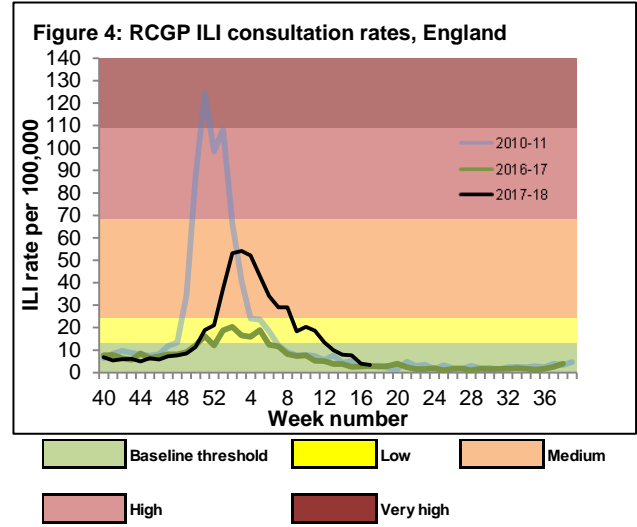
In week 17, the overall weekly influenza-like illness (ILI) GP consultation rate remained low and below the baseline threshold in England. In the devolved administrations, ILI rates continued to decrease and are below baseline levels.

- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance was at 3.4 per 100,000 in week 17 compared to 4.0 per 100,000 in week 16. This is below the baseline threshold (13.1 per 100,000) (Figure 4*). By age group, the highest rates were seen in 75+ year olds (6.0 per 100,000) and 1-4 year olds (3.8 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>



UK

- In week 17, overall weekly ILI consultation rates across the countries of the UK decreased or remained similar compared to the previous week and are all below their respective baseline thresholds (Table 1).
- By age group, the highest rates were seen in the 65-74 year olds in Northern Ireland (4.5 per 100,000), 45-64 year olds in Wales (3.2 per 100,000) and in the 75+ year olds in Scotland (29.1 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	12	13	14	15	16	17
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	13.5	9.9	8.0	7.6	4.0	3.4
Wales	5.7	6.5	6.6	6.4	5.0	6.4	6.2	6.4	5.9	6.4	8.7	13.2	16.7	36.3	62.0	74.5	52.8	52.3	44.2	42.5	33.3	25.8	24.6	17.3	11.3	5.9	8.8	5.9	3.2	2.3
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	18.7	9.4	9.5	9.4	8.3	10.3
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	13.0	11.7	6.0	6.5	5.3	3.3

*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 2.3 per 100,000 in week 17 (Figure 5).

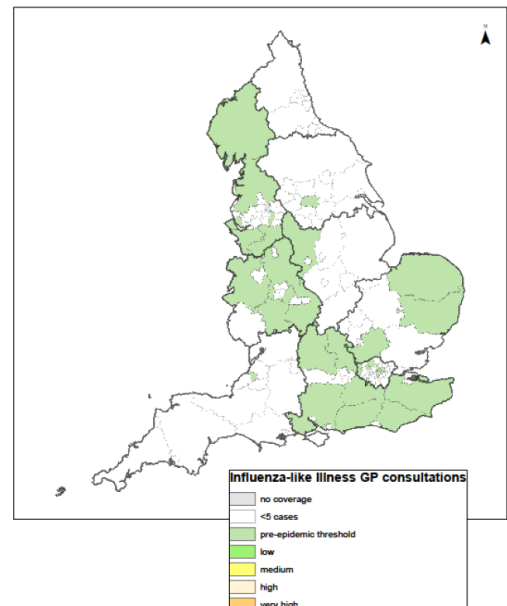
During week 17, GP In Hours and Out of Hours consultations for influenza like illness and NHS 111 calls for cold/flu continued to decrease and are similar to baseline levels.

Figure 5 represents a map of GP ILI consultation rates in week 17 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 17

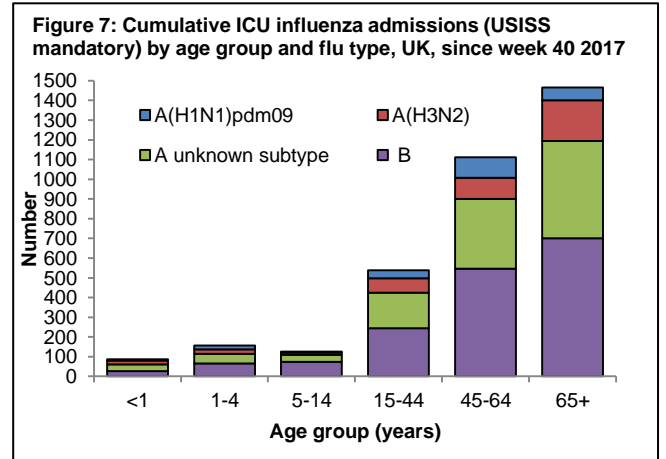
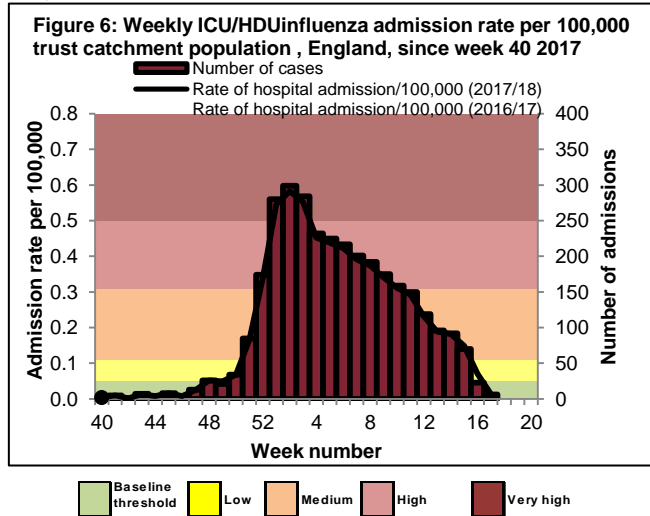


In week 17 2018, there were six new admissions to ICU/HDU with confirmed influenza (three influenza A(unknown subtype) and three influenza B) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (117 Trusts in England). There were 22 hospitalised confirmed influenza cases (two influenza A(H1N1)pdm09, seven influenza A(H3N2), nine influenza A(unknown subtype) and four influenza B) were reported through the USISS sentinel hospital network across England (17 Trusts).

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 17)

- In week 17, there were six new admissions to ICU/HDU with confirmed influenza (three influenza A(unknown subtype) and three influenza B) reported across the UK (117/144 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.01 per 100,000 compared to 0.01 per 100,000 in the previous week for England data (Figures 6 and 7), this is below the baseline impact threshold of 0.05 per 100,000. One death was reported to have occurred in week 17 in the UK.

A total of 3,486 new admissions (243 influenza A(H1N1)pdm09, 440 influenza A(H3N2), 1,148 (influenza A(unknown subtype) and 1,655 influenza B) and 384 confirmed deaths have been reported in the UK since week 40 2017.

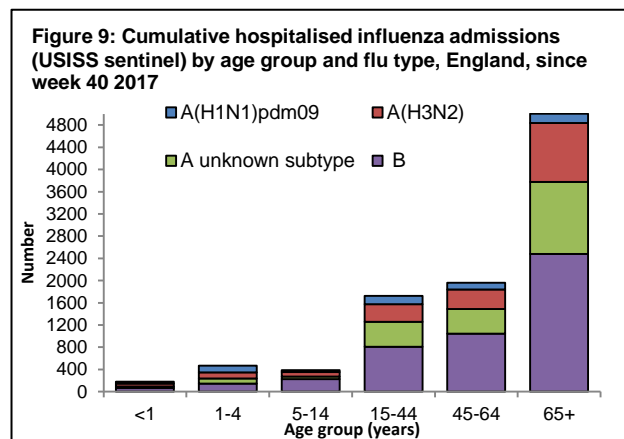
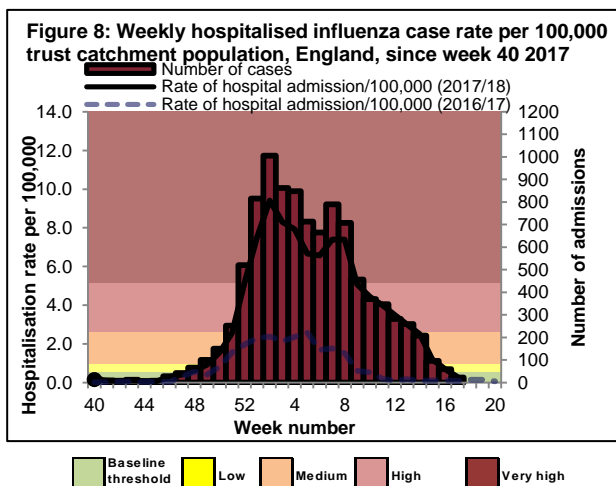


*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: <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 17)

- In week 17, there were 22 hospitalised confirmed influenza cases (two influenza A(H1N1)pdm09, seven influenza A(H3N2), nine influenza A(unknown subtype) and four influenza B) reported from 17 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 0.29 per 100,000 compared to 0.70 per 100,000 in the previous week (Figures 8 and 9), this is now below the baseline impact threshold of 0.56 per 100,000.

A total of 9,734 hospitalised confirmed influenza admissions (642 influenza A(H1N1)pdm09, 1,966 influenza A(H3N2), 2,356 influenza A(unknown subtype) and 4,770 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 17)

- In week 17, there were no new influenza admissions reported from the six Severe Respiratory Failure (SRF) centres in the UK. Since week 40, a total of 59 laboratory confirmed influenza admissions (13 influenza A(H1N1)pdm09, six influenza A(H3N2), 14 influenza A(unknown subtype) and 26 influenza B) were reported from the SRFs for the season to date.

In week 12 2018, no statistically significant excess all-cause mortality by week of death was observed overall and by age group in England and Wales, through the EuroMOMO algorithm. In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in Scotland and Northern Ireland in week 17 2018.

- All-cause death registrations, England and Wales

- In week 16 2018, an estimated 11,223 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a decrease compared to the 12,301 estimated death registrations in week 15 2018.

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

- In week 12 2018 in England and Wales, 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, no statistically significant excess all-cause mortality for all ages was observed in Scotland and Northern Ireland in week 17 2018 (Table 2).

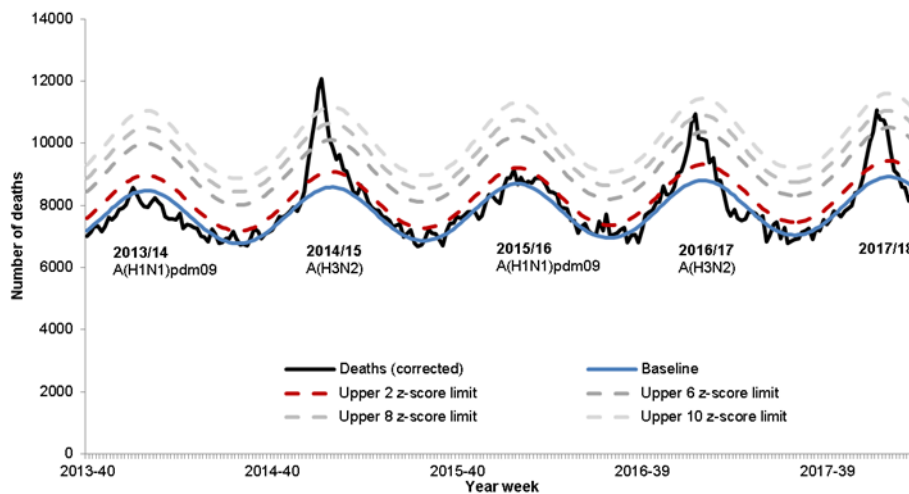
Table 2: Excess mortality by UK country, for all ages*

Country	Excess detected in week 17 2018?	Weeks with excess in 2017/18
England	NA	50-04
Wales	NA	52,02-03
Scotland	x	49-04,09
Northern Ireland	x	49,51-05,07

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

* NA refers to data not available for this week

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 week 12 2018

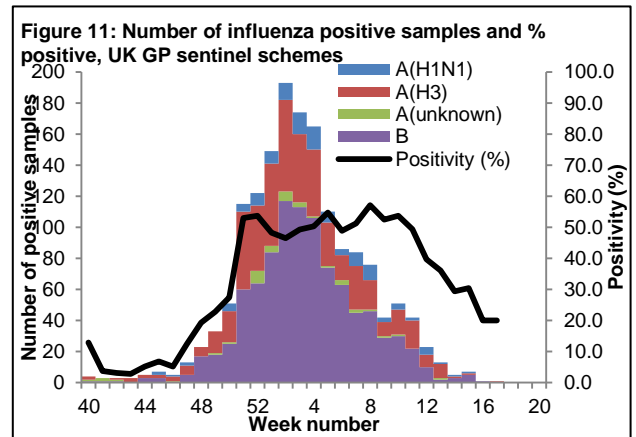


In week 17 2018, one sample tested positive for influenza (one influenza A(H3)) through the UK GP sentinel schemes, with an overall positivity of 20.0% compared to the same in week 16. Sixty-eight positive detections were recorded through the DataMart scheme (38 influenza A(H3), 13 influenza A(unknown subtype), four influenza A(H1N1)pdm09 and 13 influenza B) with a positivity of 5.7% in week 16 compared to 10.6% in week 15, which is below the baseline threshold of 8.6%.

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

-In week 17, one sample tested positive for influenza (one influenza A(H3)) through the UK GP sentinel schemes, with an overall positivity of 20.0% compared to 20.0% in week 16 (Figure 11).

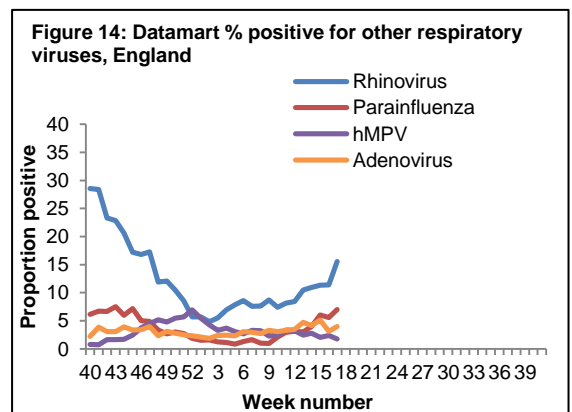
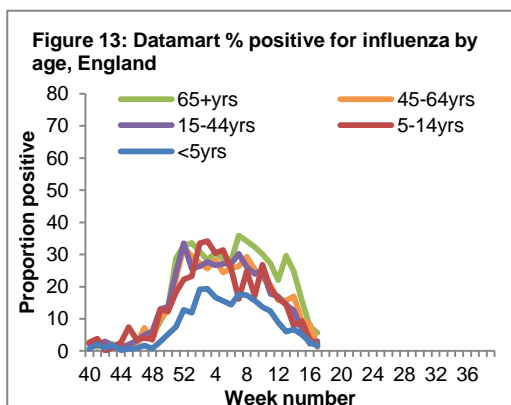
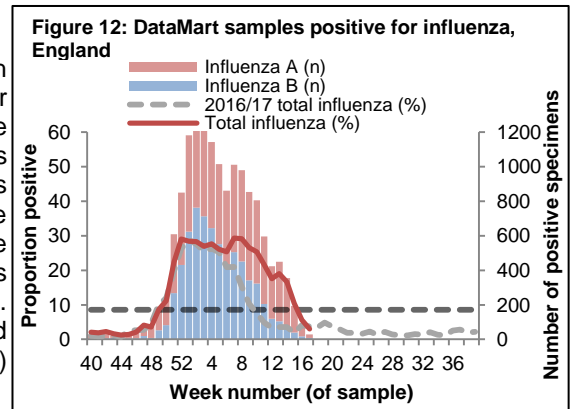
Since week 40, a total of 1,609 samples (504 influenza A(H3), 39 influenza (unknown subtype), 118 influenza A(H1N1)pdm09 and 948 influenza B) tested positive for influenza through this scheme.



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

- Respiratory DataMart System (England)

In week 17 2018, out of the 956 respiratory specimens reported through the Respiratory DataMart System, 29 samples (3.0%) were positive for influenza (12 influenza A(H3), seven influenza A(unknown subtype), one influenza A(H1N1)pdm09 and nine influenza B) (Figure 12), which is above the MEM baseline threshold for this season of 8.6%. This compares to 5.6% in week 16. The highest positivity for influenza by age group was seen in the 65+ year olds at 5.6% in week 17 (Figure 13). The overall positivity for RSV was low at 1.4% in week 17. Rhinovirus positivity increased slightly from 11.4% in week 16 to 15.5% in week 17. Adenovirus and parainfluenza positivity increased slightly at 4.0% and 7.0% respectively in week 17. Human metapneumovirus (hMPV) positivity remained low at 1.8% in week 17 (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 1786 influenza viruses detected since week 37 (Table 3). Nine hundred and nineteen influenza B viruses have been analysed; 912 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 is 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 604 A(H3N2) influenza viruses detected since late summer, showed that the majority belong to genetic subclade 3C.2a, with 149 belonging to a cluster within this genetic subclade designated as 3C.2a1. Twenty one 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 263 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	89	80	94	263
A(H3N2)	24	580	0	604
B/Yamagata-lineage	200	430	282	912
B/Victoria-lineage	6	1	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, 176 influenza A(H3N2) have been tested for oseltamivir susceptibility; 171 are susceptible but five are resistant. Of 155 A(H3N2) viruses with zanamivir susceptibility testing data, 152 are susceptible and three are resistant. After de-duplication, 226 influenza A(H1N1)pdm09 virus have been tested for oseltamivir susceptibility and all but six were fully susceptible. One hundred and thirty-three of the 226 influenza A(H1N1)pdm09 virus were also tested for zanamivir susceptibility and were all fully susceptible. Four hundred and seventy-six influenza B viruses have been tested for oseltamivir and all but one were fully susceptible. Four hundred and sixty-one out of the 476 influenza B viruses have also been tested for zanamivir susceptibility and all but one was fully susceptible.

- Antimicrobial susceptibility

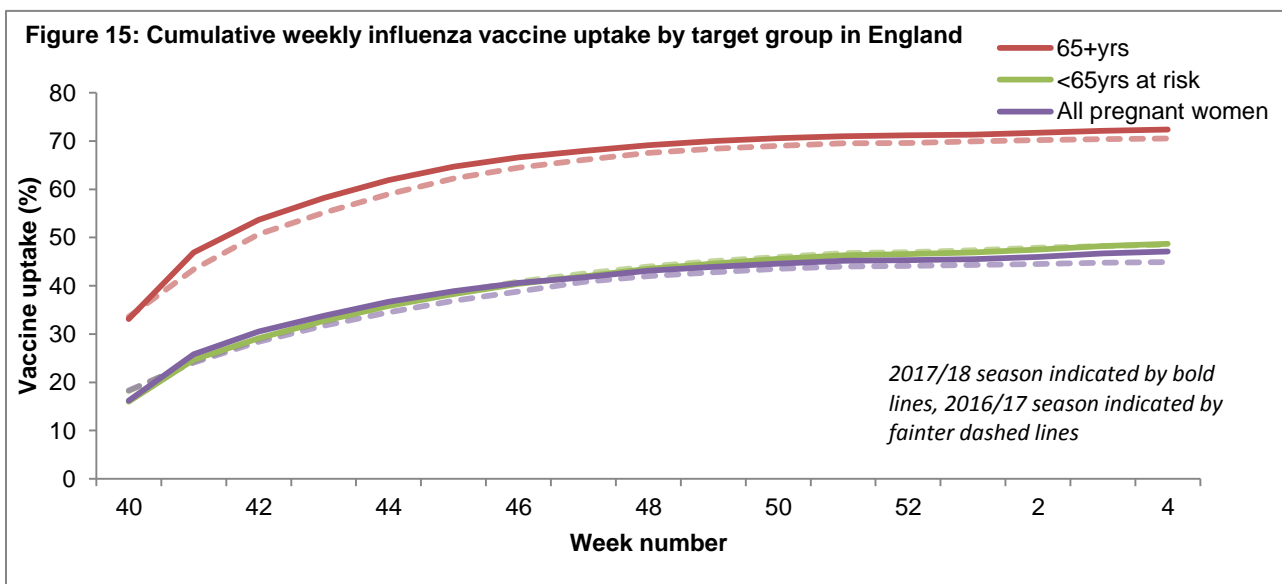
-Table 4 shows in the 12 weeks up to 29 April 2018, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired pneumonia (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 29 April 2018, E&W

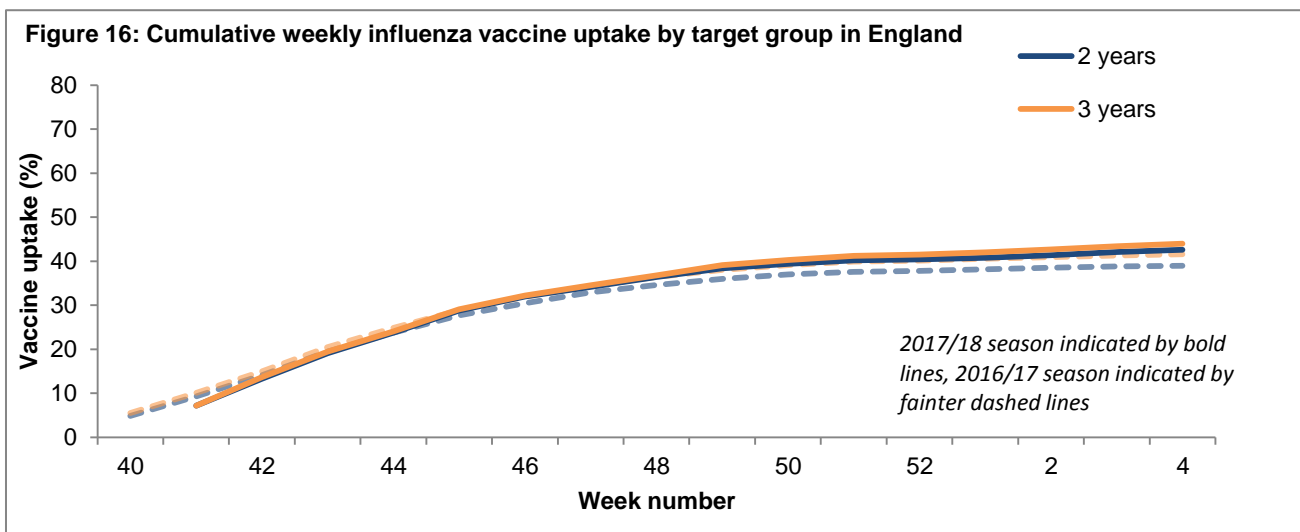
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	4267	90
	Macrolides	4731	84
	Tetracycline	4633	86
<i>H. influenzae</i>	Amoxicillin/ampicillin	19267	68
	Co-amoxiclav	20919	85
	Macrolides	6331	4
	Tetracycline	20714	99
<i>S. aureus</i>	Methicillin	7650	91
	Macrolides	8282	67
MRSA	Clindamycin	497	43
	Tetracycline	650	80
MSSA	Clindamycin	4547	76
	Tetracycline	6450	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 returned to inter-seasonal levels in most of the countries in the temperate zone of the northern hemisphere except for Eastern Europe. In the temperate zone of the southern hemisphere, influenza activity remained below the seasonal thresholds. Worldwide, seasonal influenza subtypes A and B accounted for approximately the same proportion of influenza detections.

- [Europe](#) updated on 27 April 2018 (Joint ECDC-WHO Europe Influenza weekly update)

In week 16/2018, overall influenza activity was at inter-season levels in all but one reporting country. 12% of the individuals sampled from primary healthcare settings testing positive (compared to 23% in the previous week). Both influenza virus types A and B were co-circulating with the majority being type A viruses.

In week 16/2018, of 41 Member States and areas reporting on intensity, 1 reported medium intensity and 40 reported low intensity.

For week 16/2018, 61 (12%) of 507 sentinel specimens tested positive for influenza viruses; 62% were type A and 38% were type B. Of 36 subtyped A viruses, 69% were influenza A(H1N1)pdm09 and 31% A(H3N2). Of 8 type B viruses ascribed to a lineage, all were B/Yamagata.

In week 15, the overall numbers of reported laboratory confirmed ICU cases continued to decrease, 37 laboratory-confirmed influenza-infected cases were reported, with the majority reported by the United Kingdom (68%). A total of 40 cases were reported from other wards, with the majority reported from Ireland (60%).

Since week 40/2017, type A influenza viruses have been detected in 52% and type B in 48% of cases in ICUs. Of 1 823 subtyped influenza A viruses, 58% were A(H1N1)pdm09 and 42% A(H3N2). Of 5 667 cases with known age, 45% were 15–64 years old and 48% were aged 65 years and older.

For week 16/2018, data from 21 countries or regions reporting to the [EuroMOMO](#) project were received and included in the pooled analyses of all-cause excess mortality. Mortality has been significantly elevated in many European countries over the past months, mainly affecting elderly people. However, mortality now appears to have returned to normal expected levels in all the participating 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 27 April 2018 (Centre for Disease Control report)

During week 16, influenza activity decreased in the United States.

Overall, influenza A(H3) viruses have predominated this season. Since early March, influenza B viruses have been more frequently reported than influenza A viruses. The percentage of respiratory specimens testing positive for influenza in clinical laboratories decreased.

A cumulative rate of 105.3 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.

The proportion of outpatient visits for influenza-like illness (ILI) was 1.7%, which is below the national baseline of 2.2%.

- [Canada](#) updated on 27 April 2018 (Public Health Agency report)

Overall, during week 16, influenza activity in Canada continued to decrease, but many parts of the country are still reporting localised activity.

In week 16, detections of influenza A were greater than those of influenza B.

In week 16, 1.7% of visits to healthcare professionals were due to influenza-like illness; a decrease from the previous week.

To date this season, 4,928 influenza-associated hospitalizations were reported by participating provinces and territories. Among the hospitalizations, 3,305 (67%) were associated with influenza A, and 3,232 cases (66%) were in adults 65 years of age or older.

Additionally, 496 ICU admissions and 271 deaths have been reported to date. Adults aged 65 years of age or older accounted for the greatest proportion of ICU cases (44%), followed by adults aged 20-64 (40%). Adults aged 65 years of age or older accounted the majority of deaths (85%).

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 30 April 2018 (WHO website)

Influenza activity returned to inter-seasonal levels in most of the countries in the temperate zone of the northern hemisphere except for Eastern Europe. In the temperate zone of the southern hemisphere, influenza activity remained below the seasonal thresholds. Worldwide, seasonal influenza subtypes A and B accounted for approximately the same proportion of influenza detections.

Overall, influenza activity decreased in North America. Influenza indicators continued to decrease in Canada and the United States of America (USA), with influenza A and B viruses detected in the former and influenza B viruses predominating in the latter.

Overall, influenza viruses continued to circulate widely in the European region, but most of the countries reported activities from low to medium intensity. Across the region both influenza A and B viruses circulated. Influenza A viruses predominated during this reporting period however over the course of the influenza season influenza B virus was most frequently detected, including among severe cases. In Eastern Europe, influenza activity decreased overall, but remained at high level in the Russian Federation with detections of influenza A and B viruses.

In Northern Africa, influenza activity decreased across most of the region, except for Egypt where detections remained high.

In Western Asia, influenza activity appeared to decrease across the region, with influenza A (H1N1)pdm09 predominating.

In Central Asia, influenza activity decreased across the region. In East Asia, influenza activity decreased across the region, with most countries reaching inter-seasonal levels.

In the Caribbean, influenza activity increased in general. In the tropical countries of South America, influenza activities varied by countries.

Across reporting countries in Middle and Western Africa, influenza activity remained low. In Eastern Africa, influenza activity also remained low across most reporting countries, however moderate activity was detected in the United Republic of Tanzania.

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

The WHO GISRS laboratories tested more than 137,071 specimens between 02 April 2018 to 15 April 2018. 21,639 were positive for influenza viruses, of which 12,034 (55.6%) were typed as influenza A and 9,605 (44.4%) as influenza B. Of the sub-typed influenza A viruses, 3,077 (58.2%) were influenza A(H1N1)pdm09 and 2,211 (41.8%) were influenza A(H3N2). Of the characterized B viruses, 917 (88.7%) belonged to the B-Yamagata lineage and 117 (11.3%) 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.

Influenza A (H1N2)

On [20 March 2018](#), the National International Health Regulations focal point for the Netherlands notified WHO about a human infected with a new reassortant A(H1N2) of seasonal influenza viruses that was detected in the routine sentinel influenza surveillance for influenza-like illness and other acute respiratory infections in the Netherlands.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 25 April 2018

Up to 02 May 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 1,191 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.

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](#))