



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 08 (ending 25 February 2018), influenza continues to circulate widely, 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.

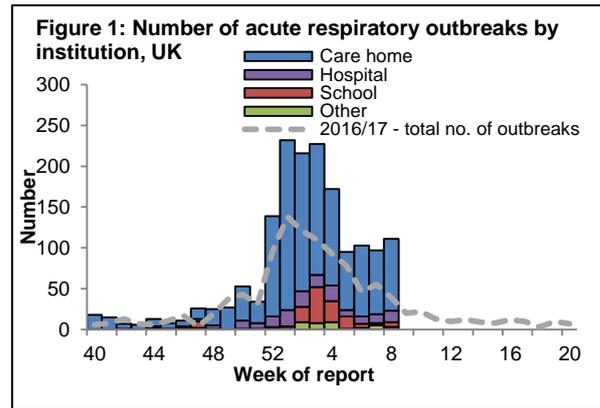
- [Community influenza surveillance](#)
 - One hundred and eleven new acute respiratory outbreaks have been reported in the past 7 days compared to 98 in the previous week. Eighty-eight outbreaks were from care homes, where 22 tested positive for influenza A(unknown subtype), 16 were positive for influenza B, two was positive for influenza A(H3), one was positive for a mixed infection of influenza A(unknown subtyped) and influenza B. Fourteen outbreaks were from hospitals where five tested positive for influenza A(unknown subtype), four were positive for influenza B and another for a mixed infection of influenza A(H1N1)pdm09 and influenza B. Six outbreaks were from schools with no test results available. The remaining three outbreaks were reported from the Other settings category, where one tested positive for influenza B.
- [Overall weekly influenza GP consultation rates across the UK](#)
 - In week 08, the overall weekly influenza-like illness (ILI) GP consultation rate was 29.1 per 100,000 in England, compared to the same rate in week 07. This remains above the medium intensity threshold of 24.2 per 100,000 for this season. In the devolved administrations, ILI rates continued to decrease steadily.
 - Through the Syndromic Surveillance systems, GP consultations for influenza-like illnesses (ILI) remain above seasonally expected levels. GP Out of Hours ILI consultations and emergency attendances for acute respiratory infections decreased during week 08.
- [Influenza-confirmed hospitalisations](#)
 - In week 08, there were 149 new admissions to ICU/HDU with confirmed influenza (10 influenza A(H1N1)pdm09, 10 influenza A(H3N2), 60 influenza A(unknown subtype) and 69 influenza B) reported across the UK (131/144 Trusts in England) through the USS mandatory ICU scheme with a rate of 0.31 per 100,000 for England, compared to 0.35 in the previous week. This is above the baseline threshold of 0.05 per 100,000 for the 2017/18 season.
 - In week 08, there were 588 hospitalised confirmed influenza cases (24 influenza A(H1N1)pdm09, 121 influenza A(H3N2), 147 influenza A(unknown subtype) and 296 influenza B) reported through the USS sentinel hospital network (all levels of care) (19 NHS Trusts across England), with a rate of 7.10 per 100,000 compared to 7.35 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 seven new influenza admissions (one influenza A(H1N1)pdm09, two influenza A(unknown subtype) and four influenza B) reported from the six Severe Respiratory Failure centres in the UK in week 08.
- [All-cause mortality data](#)
 - In week 08 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 08 2018.
- [Microbiological surveillance](#)
 - Thirty samples tested positive for influenza (five influenza A(H1N1)pdm09, eight influenza A(H3) and 17 influenza B) through the UK GP sentinel schemes, with an overall positivity of 52.6% in week 08, compared to 52.3% in week 07.
 - Seven hundred and eighty-one positive detections were recorded through the DataMart scheme (258 influenza A(H3), 118 influenza A(unknown subtype), 35 influenza A(H1N1)pdm09 and 370 influenza B) with a positivity of 28.4% in week 08 compared to 29.5% in week 07, 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 accounted still for the majority of influenza detections but influenza B (mostly from the Yamagata lineage) increased in recent weeks.

One hundred and eleven new acute respiratory outbreaks were reported in the past 7 days.

- Acute respiratory disease outbreaks

- One hundred and eleven new acute respiratory outbreaks have been reported in the past 7 days compared to 98 in the previous week. Eighty-eight outbreaks were from care homes, where 22 tested positive for influenza A(unknown subtype), 16 were positive for influenza B, two was positive for influenza A(H3), one was positive for a mixed infection of influenza A(unknown subtyped) and influenza B. Fourteen outbreaks were from hospitals where five tested positive for influenza A(unknown subtype), four were positive for influenza B and another for a mixed infection of influenza A(H1N1)pdm09 and influenza B. Six outbreaks were from schools with no test results available. The remaining three outbreaks were reported from the Other settings category, where one tested positive for influenza B.

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



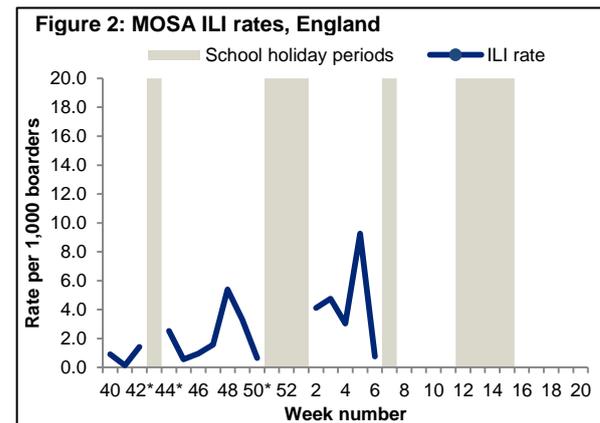
- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

- 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 06 was 0.8 per 1,000 boarders compared to 9.3 per 1,000 boarders in week 05.

-Since week 40, 35 outbreaks have been reported from 12 MOSA schools, with a total of 215 ILI cases identified. Out of the 35 outbreaks, six tested positive for influenza B and two 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.



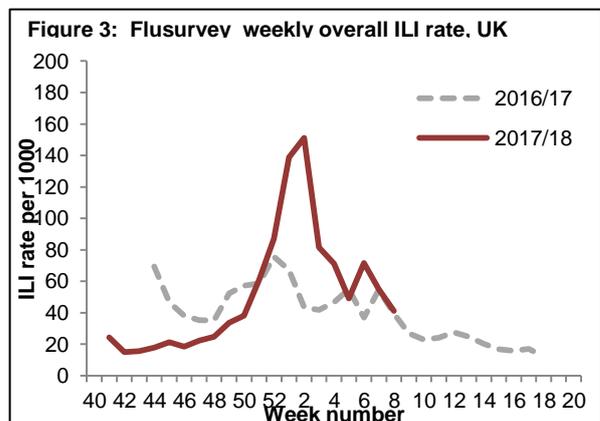
*represents weeks where not all schools will be reporting due to varying school holiday periods.

- 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 08 was 41.1 per 1,000 (124/3,019 people reported at least 1 ILI) (Figure 3) compared to 54.9 per 1,000 in week 07.

- 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 07, 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 steadily.

- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance is at 29.1 per 100,000 in week 08 compared to the same rate (29.1 per 100,000) in week 09. This is above the baseline threshold (13.1 per 100,000) and above the medium activity threshold (Figure 4*). By age group, the highest rates were seen in 45-64 year olds (39.5 per 100,000) and 15-44 year olds (30.5 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 08, overall weekly ILI consultation rates across the countries of the UK continue to decrease or remain similar 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 (34.7 per 100,000; 56.3 per 100,000 and 55.9 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
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
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	31.8
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
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

**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 21.1 per 100,000 in week 08 (Figure 5).

During week 08, GP consultations for influenza-like illnesses (ILI) remain above seasonally expected levels. GP Out of Hours ILI consultations and emergency attendances for acute respiratory infections decreased during week 08.

Figure 5 represents a map of GP ILI consultation rates in week 08 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.

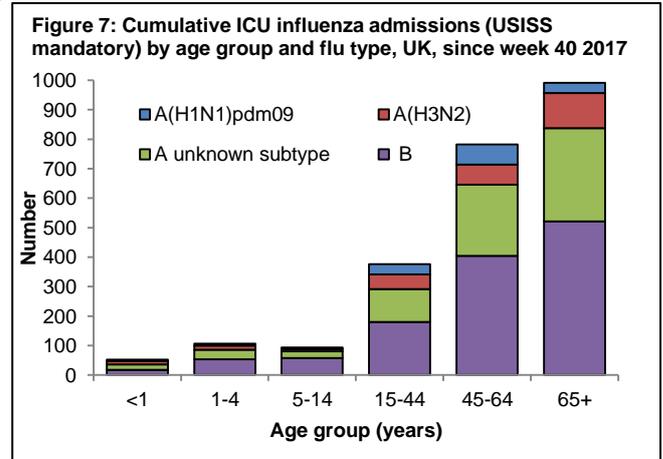
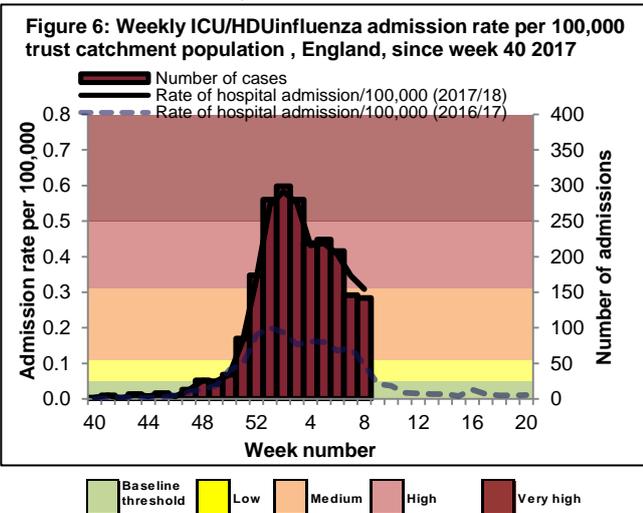
-For further information, please see the syndromic surveillance [webpage](#).

In week 08 2018 there were 149 new admissions to ICU/HDU with confirmed influenza (10 influenza A(H1N1)pdm09, 10 influenza A(H3N2), 60 influenza A(unknown subtype) and 69 influenza B) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (131 Trusts in England). There were 588 hospitalised confirmed influenza cases (24 influenza A(H1N1)pdm09, 121 influenza A(H3N2), 147 influenza A(unknown subtype) and 296 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 08)

- In week 08, there were 149 new admissions to ICU/HDU with confirmed influenza (10 influenza A(H1N1)pdm09, 10 influenza A(H3N2), 60 influenza A(unknown subtype) and 69 influenza B) reported across the UK (131/144 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.31 per 100,000 compared to 0.35 per 100,000 in the previous week for England data (Figures 6 and 7), this is at the high impact threshold of 0.31 per 100,000. A total of 10 deaths were reported to have occurred in week 08 in the UK.

A total of 2,401 new admissions (153 influenza A(H1N1)pdm09, 271 influenza A(H3N2), 743 influenza A(unknown subtype) and 1,234 influenza B) and 283 confirmed deaths have been reported in the UK since week 40 2017.

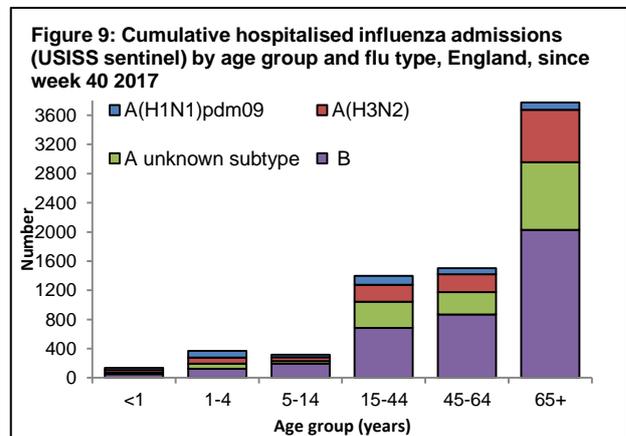
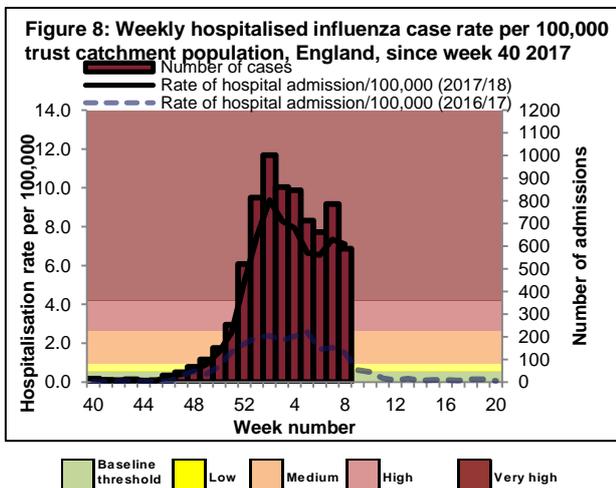


*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: <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 08)

- In week 08, there were 588 hospitalised confirmed influenza cases (24 influenza A(H1N1)pdm09, 121 influenza A(H3N2), 147 influenza A(unknown subtype) and 296 influenza B) reported from 19 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 7.10 per 100,000 compared to 7.35 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 7,497 hospitalised confirmed influenza admissions (463 influenza A(H1N1)pdm09, 1,361 influenza A(H3N2), 1,719 influenza A(unknown subtype) and 3,954 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 08)

- In week 08, there were seven new influenza admissions (one influenza A(H1N1)pdm09, two influenza A(unknown subtype) and four influenza B) reported from the six Severe Respiratory Failure (SRF) centres in the UK. Since week 40, a total of 44 laboratory confirmed influenza admissions (eight influenza A(H1N1)pdm09, three influenza A(H3N2), 13 influenza A(unknown subtype) and 20 influenza B) were reported from the SRFs for the season to date.

In week 08 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 and Wales but not in Scotland and Wales in week 08 2018.

- All-cause death registrations, England and Wales

- In week 07 2018, an estimated 12,246 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a decrease compared to the 12,495 estimated death registrations in week 06 2018.

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

- In week 08 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 08 2018 (Table 2).

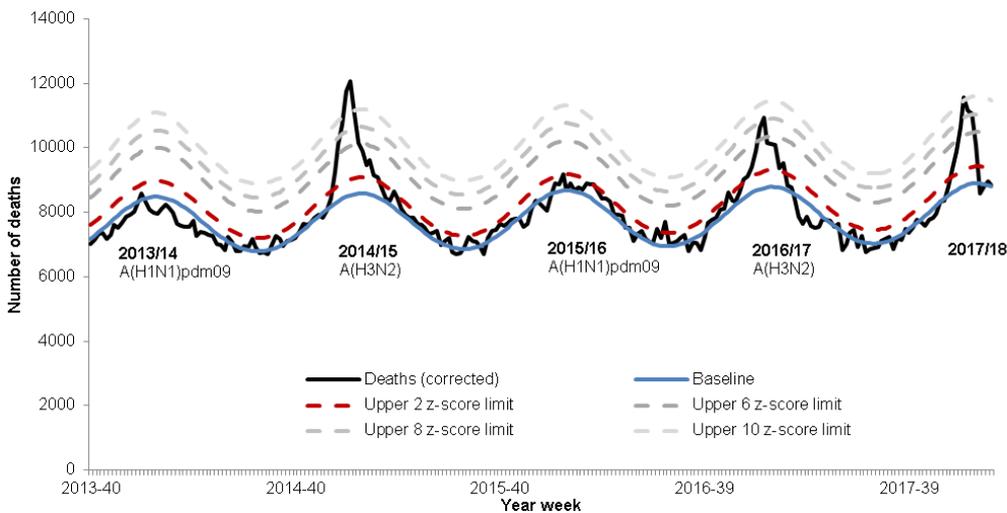
Table 2: Excess mortality by UK country, for all ages*

Country	Excess detected in week 08 2018?	Weeks with excess in 2017/18
England	×	50-04,06-07
Wales	×	52-03
Scotland	×	49-04
Northern Ireland	✓	51-08

* 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

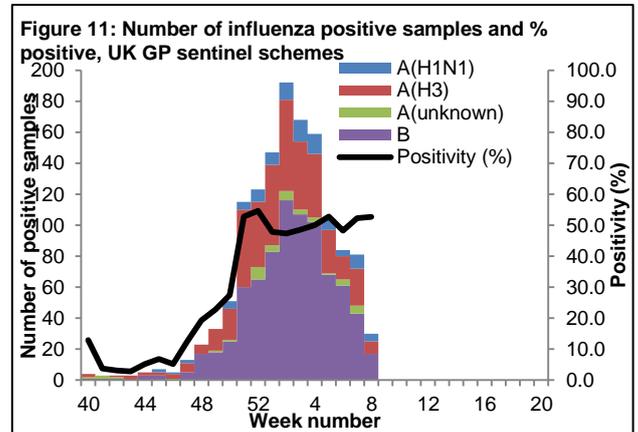


In week 08 2018, 30 samples tested positive for influenza (five influenza A(H1N1)pdm09, eight influenza A(H3) and 17 influenza B) through the UK GP sentinel schemes, with an overall positivity of 52.6% compared to 52.6% in week 07. Seven hundred and eighty-one positive detections were recorded through the DataMart scheme (258 influenza A(H3), 118 influenza A(unknown subtype), 35 influenza A(H1N1)pdm09 and 370 influenza B) with a positivity of 28.4% in week 08 compared to 29.5% in week 07, which is above the baseline threshold of 8.6%.

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

-In week 08, 30 samples tested positive for influenza (five influenza A(H1N1)pdm09, eight influenza A(H3) and 17 influenza B) through the UK GP sentinel schemes, with an overall positivity of 52.6% compared to 52.6% in week 07 through the UK GP sentinel swabbing schemes (Figure 11).

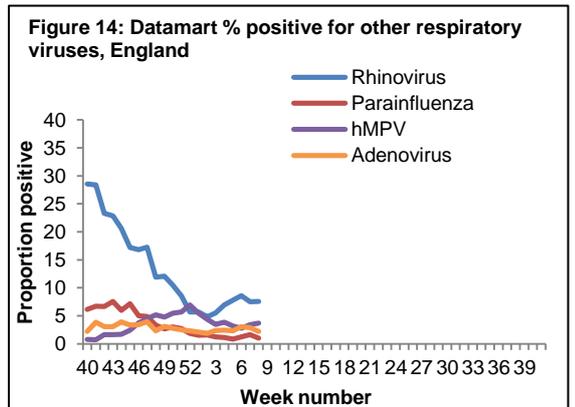
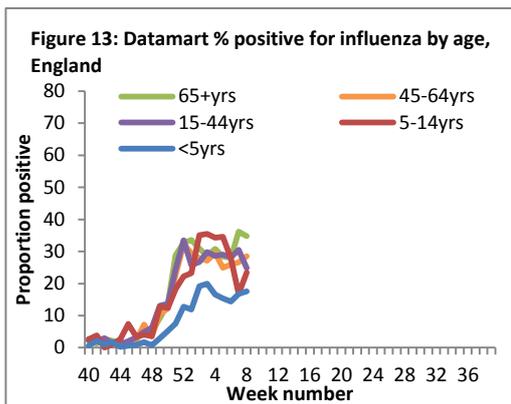
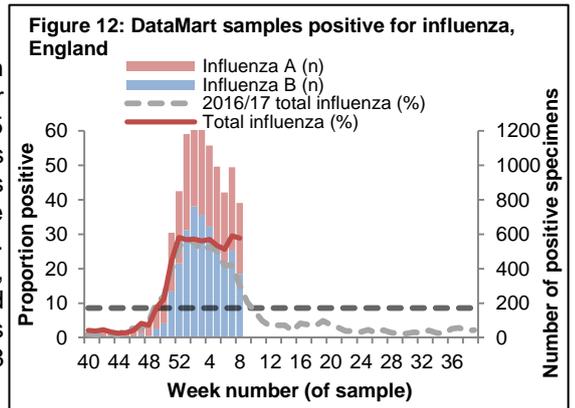
Since week 40, a total of 1,353 samples (422 influenza A(H3), 41 influenza (unknown subtype), 94 influenza A(H1N1)pdm09 and 796 influenza B) tested positive for influenza through this scheme.



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

- Respiratory DataMart System (England)

In week 08 2018, out of the 2,708 respiratory specimens reported through the Respiratory DataMart System, 758 samples (28.4%) were positive for influenza (258 influenza A(H3), 118 influenza A(unknown subtype), 35 influenza A(H1N1)pdm09 and 370 influenza B) (Figure 12), which is above the MEM baseline threshold for this season of 8.6%. This compares to 29.5% in week 07. The highest positivity for influenza by age group was seen in the 65+ year olds at 34.8% in week 08 (Figure 13). The overall positivity for RSV was low at 1.3% in week 08. Rhinovirus, parainfluenza and human metapneumovirus (hMPV) positivity remained low at 7.6%, 1.0% and 3.7% respectively in week 08. Adenovirus positivity remained similar to the previous week at 2.2% in week 08 (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 964 influenza viruses detected since week 37 (Table 3). Four hundred and seventy seven influenza B viruses have been analysed; 471 were characterised as belonging to the B/Yamagata/16/88-lineage and 6 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. Three 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 311 A(H3N2) influenza viruses detected since late summer, showed that the majority belong to genetic subclade 3C.2a, with 115 belonging to a cluster within this genetic subclade designated as 3C.2a1. Three 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 176 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	44	51	81	176
A(H3N2)	1	310	0	311
B/Yamagata-lineage	98	233	140	471
B/Victoria-lineage	5	1	0	6

- 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, 160 influenza A(H3N2) have been tested for oseltamivir susceptibility; 156 are susceptible but four are resistant. Of 146 A(H3N2) viruses with zanamivir susceptibility testing data, 144 are susceptible and two are resistant. One hundred and eighty-seven influenza A(H1N1)pdm09 virus have been tested for oseltamivir susceptibility and all but four were fully susceptible. Ninety-four of the 187 influenza A(H1N1)pdm09 virus were also tested for zanamivir susceptibility and were all fully susceptible. Three hundred and fifty influenza B viruses have been tested for oseltamivir and all but one were fully susceptible. Three hundred and thirty-eight out of the 350 influenza B viruses have also been tested for zanamivir susceptibility and all but one was fully susceptible.

- Antimicrobial susceptibility

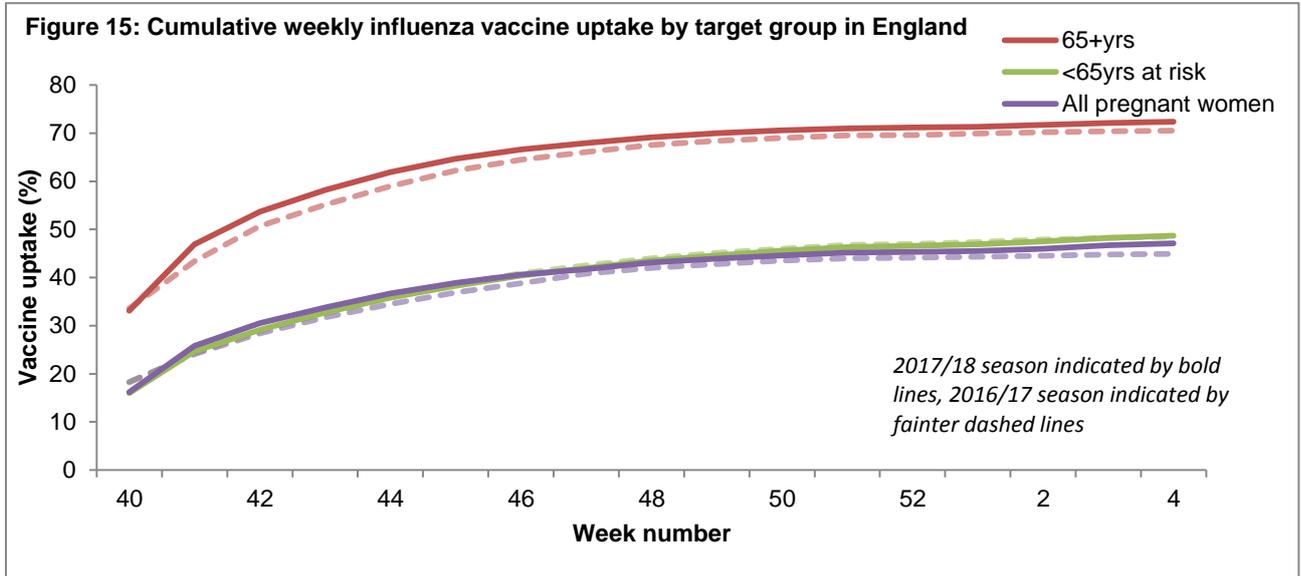
-Table 4 shows in the 12 weeks up to 25 February 2018, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired 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 25 February 2018, E&W

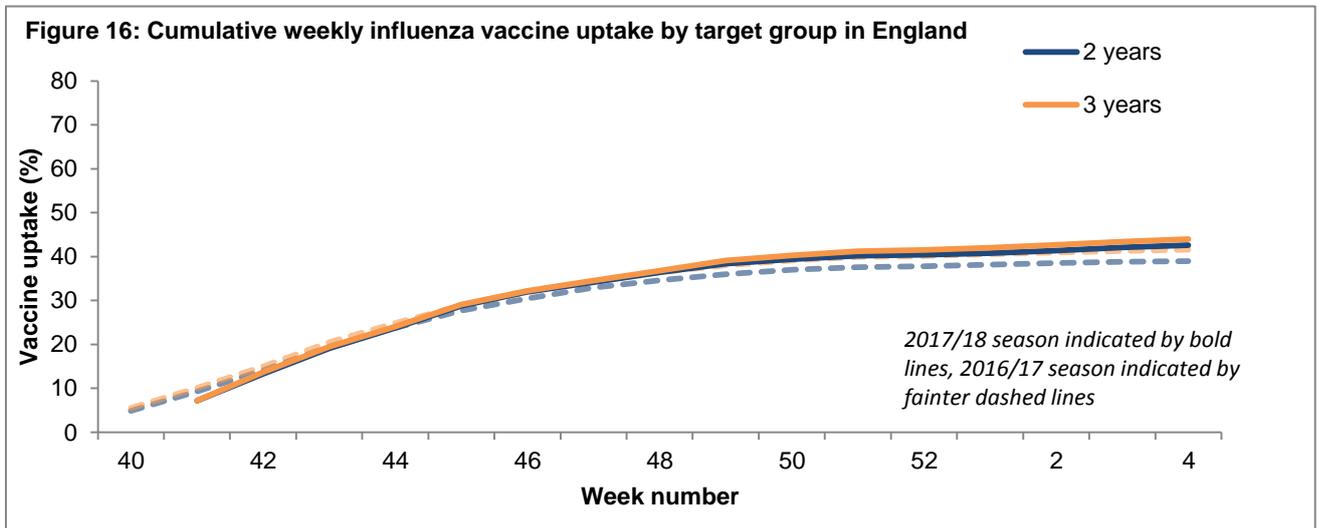
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	4672	90
	Macrolides	5128	83
	Tetracycline	5029	85
<i>H. influenzae</i>	Amoxicillin/ampicillin	20070	68
	Co-amoxiclav	21518	85
	Macrolides	8316	3
	Tetracycline	21597	98
<i>S. aureus</i>	Methicillin	7728	91
	Macrolides	8411	67
MRSA	Clindamycin	483	42
	Tetracycline	642	81
MSSA	Clindamycin	4537	77
	Tetracycline	6464	94

*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 accounted still for the majority of influenza detections but influenza B (mostly from the Yamagata lineage) increased in recent weeks.

- [Europe](#) updated on 23 February 2018 (Joint ECDC-WHO Europe Influenza weekly update)

In week 07/2018, overall influenza activity was widespread in the majority of reporting countries, intensity in most countries was reported as medium or high. 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 07/2018, influenza activity was at variable levels across the region. Of 41 Member States and areas reporting on intensity, Albania and Luxembourg reported very high intensity, while the Czech Republic, Denmark, Finland, Germany, Hungary, Ireland, Slovakia, Sweden, Ukraine and Kosovo (in accordance with Security Council resolution 1244 (1999)) reported high intensity; 20 Member States and the UK (England, Scotland and Wales) reported medium intensity and 8 Member States and the UK (Northern Ireland) low intensity.

For week 07/2018, 1, 683 (51%) of 3 297 sentinel specimens tested positive for influenza viruses. Of these, 33.3% were type A and 66.7% were type B. Of 428 subtyped A viruses, 66.4% were influenza A(H1N1)pdm09 and 33.6% A(H3N2). Of 595 type B viruses ascribed to a lineage, 96.6% were B/Yamagata and 3.4% B/Victoria.

In week 07, the overall numbers of reported laboratory confirmed ICU cases continued to decrease, 206 laboratory-confirmed influenza-infected cases were reported, with the majority reported by the United Kingdom (73%). A total of 81 cases was reported from other wards, with the majority reported from Ireland (56%) and Spain (33%).

Since week 40/2017, type A influenza viruses were detected in 54% and type B in 46% of the cases in ICUs. Of 1 042 subtyped influenza A viruses, 60% were A(H1N1)pdm09 and 40% A(H3N2). Of 3 033 cases with known age, 48% were 15–64 years old and 46% 65 years and older.

For week 07/2018, data from 20 countries or regions reporting to the [EuroMOMO](#) project were received and included in the pooled analyses of all-cause excess mortality. European mortality among the elderly has increased significantly over the past weeks in the western part of the Region.

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 23 February 2018 (Centre for Disease Control report)

During week 07, influenza activity remained elevated in the United States.

The most frequently identified influenza virus subtype reported by public health laboratories during week 07 was influenza A(H3). The percentage of respiratory specimens testing positive for influenza in clinical laboratories remained elevated.

A cumulative rate of 74.5 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.

The proportion of outpatient visits for influenza-like illness (ILI) was 6.4%, which is above the national baseline of 2.2%.

- [Canada](#) updated on 23 February 2018 (Public Health Agency report)

Overall, influenza activity in Canada remains at peak levels. Activity is decreasing in some parts of the country but at the national level, the decline in activity has been slow.

In week 07, detections of influenza B were greater than those of influenza A.

In week 06, 4.5% of visits to healthcare professionals were due to influenza-like illness; an increase compared to the previous week, and above the 5-year average.

In week 07, 46 influenza-associated hospitalisations were reported by participating provinces and territories.

To date this season, 3,451 influenza-associated hospitalisations have been reported, 77% of which were associated with influenza A, and 2,357 cases (68%) were in adults 65 years of age or older. To date, 317 ICU admissions and 163 deaths have been reported.

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 February 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 accounted still for the majority of influenza detections but influenza B (mostly from the Yamagata lineage) increased in recent weeks.

In Canada, influenza activity remain elevated while influenza-like illness (ILI) activity continued to increase and was above the 5-year average for this time of the year. Influenza B detections increased in recent weeks reaching equal proportion as influenza A detections.

In the United States of America (USA), influenza activity remained high, with influenza A (H3N2) viruses most frequently detected followed by influenza B viruses. Hospitalization cumulative rate for influenza were reported at high levels, and above levels observed during the same period over the previous seven seasons. In both Canada and the USA, adults aged 65 years and older accounted for the majority of influenza cases and influenza-related hospitalizations. In Mexico, influenza activity decreased slightly, with influenza A(H3N2) virus predominantly detected.

In Europe, influenza activity remained high in most countries. All seasonal influenza subtypes co-circulated across the region, but influenza B virus predominated in most countries. ILI and influenza detections increased further in most countries in Eastern and Northern Europe, and appeared to have peaked in few countries in Southwestern Europe. Influenza B detections increased in Denmark, Estonia, Norway, and Sweden. Influenza illness indicators appeared to decrease in Ireland and the United Kingdom, but influenza-related hospitalizations remain high in England.

In Northern Africa, influenza detections remained high in Algeria, Egypt and Morocco, and continued to decrease in Tunisia. Influenza A(H1N1)pdm09 virus predominated in Algeria and Tunisia, and detections of influenza A(H1N1)pdm09 and influenza B were reported in Egypt and Morocco.

In Western Asia, influenza activity continued to be reported across the region. In some countries of the Arabian Peninsula, influenza activity appeared to have peaked, while increased influenza A(H1N1)pdm09 detections were reported in Iraq. In Israel, influenza activity remained high with influenza B viruses predominating. Detections of influenza B-Yamagata lineage and influenza A(H1N1)pdm09 were reported in Armenia.

In Central Asia, influenza A and B detections increased across the region in recent weeks.

In East Asia, influenza activity remained high across the region. ILI activity appeared to decrease in Northern and Southern China but influenza detections remained elevated, with influenza B-Yamagata lineage and influenza A(H1N1)pdm09 viruses predominating. ILI consultation rate remained high in Hong Kong SAR, China, with influenza B most frequently detected. Decreased detections of influenza A(H1N1)pdm09 were reported in the Democratic People's Republic of Korea. In Mongolia, respiratory illness indicators and influenza detections appeared to decrease while influenza B-Yamagata lineage virus predominately detected in recent weeks. In the Republic of Korea, ILI activity decreased although influenza A(H3N2) and B virus detections remained high.

In Southern Asia, influenza activity remained low in general. Detection of influenza A(H1N1)pdm09 and influenza A(H3N2) viruses continued to increase in Pakistan, while activity decreased in the Islamic Republic of Iran.

In South East Asia, low levels of influenza activity were reported in most countries. Increased detections of influenza A(H1N1)pdm09 and influenza B-Yamagata lineage viruses were reported in Singapore.

In Western Africa, little to no influenza activity was reported across the region. In Middle Africa, there were no updates available for this reporting period. In Eastern Africa, increased influenza A(H1N1)pdm09 detections were reported in Madagascar.

In the Caribbean and Central American countries, respiratory illness indicators and influenza activity remained low in general. Influenza activity increased in Puerto Rico, with influenza A(H3N2) and B viruses co-circulating. Increased detections of influenza B virus were reported in Suriname. Influenza activity decreased in Jamaica.

In the tropical countries of South America, influenza activities and respiratory illness indicators were generally low with a few exceptions. Influenza A(H3N2) detections slightly increased in Colombia. Influenza activity remained elevated in Ecuador, with influenza A(H1N1)pdm09 virus predominating.

In the temperate zone of the Southern Hemisphere, influenza activity remained overall at inter-seasonal levels.

The WHO GISRS laboratories tested more than 302,596 specimens between 22 January 2018 to 04 February 2018. 98,068 were positive for influenza viruses, of which 54,142 (55.2%) were typed as influenza A and 43,926 (44.8%) as influenza B. Of the sub-typed influenza A viruses, 10,290 (58%) were influenza A(H1N1)pdm09 and 7,441 (42%) were influenza A(H3N2). Of the characterized B viruses, 7,553 (92.5%) belonged to the B-Yamagata lineage and 615 (7.5%) 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 21 February 2018

Up to 28 February 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 1,147 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.

Acknowledgements

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Related links

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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](#)

- 2017/18 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))

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](#))