



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

25 April 2019 – Week 17 report (up to week 16 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.

| [Summary](#) | [Community surveillance](#) | [GP consultation rates](#) | [Hospitalisations](#) | [All-cause mortality](#) | [Microbiological surveillance](#) | [Vaccination](#) | [International](#) | [Acknowledgements](#) | [Related links](#) |

Summary – Week 16 (ending 21 April 2019)

- During week 16, influenza continued to circulate in the community with activity indicators decreasing and **Below Baseline**.
- The impact of flu on healthcare services is at **Below baseline** for hospitalisations and for ICU/HDU influenza admissions.
- Influenza A(H1N1)pdm09 and influenza A(H3N2) are co-circulating. The Department of Health & Social Care has issued an [alert](#) on the prescription of antiviral medicines by GPs

Community

- Twenty-three new acute respiratory outbreaks have been reported in the past 7 days. Twenty-one outbreaks were reported from care homes where 3 tested positive for influenza A(not subtyped), 1 for influenza A(H3), 1 for picornavirus, 1 for parainfluenza and 2 for rhinovirus. The remaining 2 outbreaks were reported from hospitals where 1 tested positive for influenza A(not subtyped) and 1 for influenza A(H3).

Primary Care

- The rate of influenza-like illness (ILI) was **Below Baseline** threshold levels. The overall weekly ILI GP consultation rate was 3.4 per 100,000 registered population in participating GP practices for England, this is a slight decrease from 4.2 per 100,000 in week 15 2019.
- In the devolved administrations, ILI rates were **Below Baseline** threshold levels for Northern Ireland, Scotland and Wales.

GP ILI
Consultations
England



Secondary Care

- Hospitalisation rate observed was **Below baseline** levels, with a rate of 0.62 per 100,000 trust catchment population for England (19 NHS Trusts), this is a decrease from 0.71 per 100,000 in week 15.
- ICU/HDU admission rate observed was **Below baseline** levels, with a rate of 0.05 per 100,000 trust catchment population for England (135/143 NHS Trusts), this is a slight decrease from the previous week which was at 0.08 per 100,000.
- There were no new laboratory confirmed influenza admissions reported from the 6 Severe Respiratory Failure centres in the UK.

Hospitalisation



ICU/HDU



All-cause mortality

- In week 16 2019, no statistically significant excess all-cause mortality by week of death was seen overall and by age group in England. In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in Wales in week 16 and in Scotland in week 14 2019; no data was available for Northern Ireland in week 16.

Microbiological surveillance

- [Primary care](#): 4 samples tested positive for influenza (4 influenza A(H3)) through the UK GP sentinel swabbing schemes in week 16 2019.
- [Secondary care](#): Influenza percent positivity was 6.6%, **Below Baseline** threshold level, this is similar to 7.3% in week 15. There were 137 detections recorded through the DataMart scheme (3 influenza A(H1N1)pdm09, 84 influenza A(H3), 49 influenza A(not subtyped) and 1 influenza B).

Secondary
Care



Vaccination

- Provisional data from the fifth monthly collection of influenza vaccine uptake in GP patients shows that in 97.6% of GP practices the proportions of people in England who had received the 2018/19 influenza vaccine in targeted groups by 28 February 2019 were: 48.0% in under 65 years in a clinical risk group, 45.2% in pregnant women and 72.0% in 65+ year olds. In 96.2% of GP practices reporting for the childhood collection the provisional proportions vaccinated by 28 February 2019 were: 43.8% in 2 year olds and 45.9% in 3 year olds.
- Provisional data from the fifth monthly collection of influenza vaccine uptake by frontline healthcare workers show 70.3% were vaccinated by 28 February 2019, compared to 68.7% vaccinated in the previous season by 28 February 2018.
- Provisional data from the fourth monthly collection of influenza vaccine uptake for children of school years reception to year 5 shows 63.9% in school year reception age, 63.4% in school year 1 age, 61.4% in school year 2 age, 60.2% in school year 3 age, 58.0% in school year 4 age and 56.2% in school year 5 age were vaccinated by 31 January 2019.
- [WHO](#) have published their recommendations for the composition of the 2019/20 Northern hemisphere influenza vaccine

International situation

- In the temperate zone of the Northern hemisphere, influenza activity continued to be reported with influenza A viruses predominating overall. In the temperate zones of the Southern hemisphere, influenza activity remained at inter-seasonal levels, with the exception of some parts of Australia which remained above inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

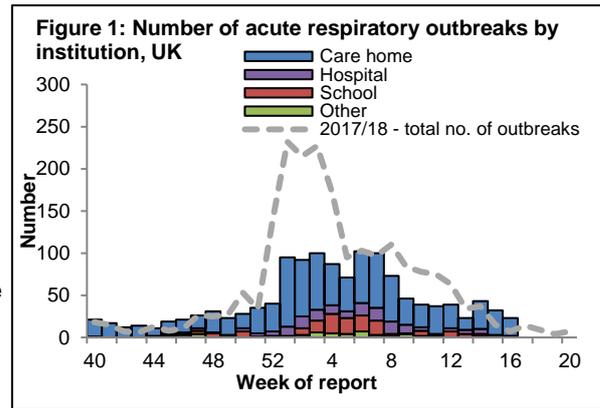
Key	
Arrows (vs previous week):	Colour (intensity according to MEM threshold):
↑ Increase	● Below Baseline
↓ Decrease	● Above Baseline/Low
↔ Stable/No trend	● Medium
	● High
	● Very High

Twenty-three new acute respiratory outbreaks were reported in the past 7 days.

- Acute respiratory disease outbreaks

-Twenty-three new acute respiratory outbreaks have been reported in the past 7 days. Twenty-one outbreaks were reported from care homes where 3 tested positive for influenza A(not subtyped), 1 for influenza A(H3), 1 for picornavirus, 1 for parainfluenza and 2 for rhinovirus. The remaining 2 outbreaks were reported from hospitals where 1 tested positive for influenza A(not subtyped) and 1 for influenza A(H3).

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



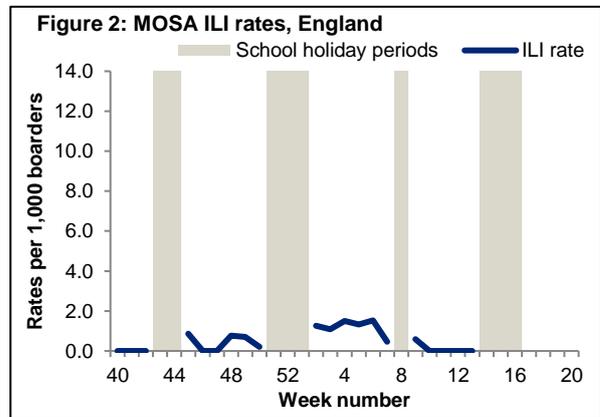
- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

- Boarding schools in England within the MOSA network are recruited each season to report various respiratory related illnesses including influenza like illnesses (ILI). For the 2018/19 season, 21 MOSA schools have agreed to participate in the scheme, including a total of 6,661 boarders.

- The overall rate (all boarders) for week 13 was 0.0 per 1,000 boarders compared to 0.0 per 1,000 boarders in week 12.

-Since week 40, there have been 16 outbreaks reported from 10 MOSA schools, with a total of 59 ILI cases identified. Of the 16 outbreaks, 2 outbreaks have tested positive for influenza A (H1N1)pdm09 and 1 outbreak has tested positive for influenza B.

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

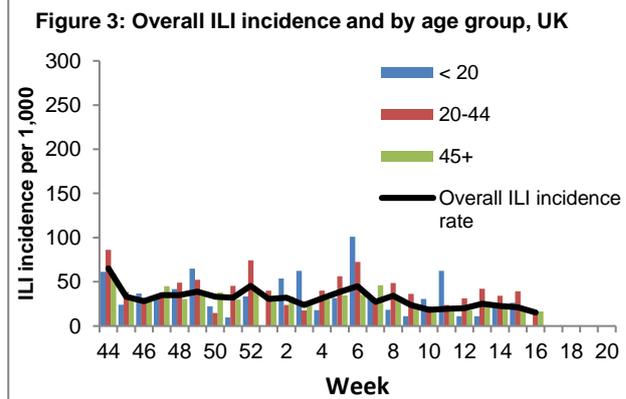


- FluSurvey

- Internet-based surveillance of influenza-like illness in the general population is undertaken through FluSurvey. A project run by PHE to monitor ILI activity in the community.

- The overall ILI rate (all age groups) for week 16 2019 was 15.3 per 1,000 (32/2,095 people reported at least 1 ILI) (Figure 3) compared to 21.2 per 1,000 in the previous week, with the highest rate seen in the 45+ year olds (16.5 per 1,000).

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



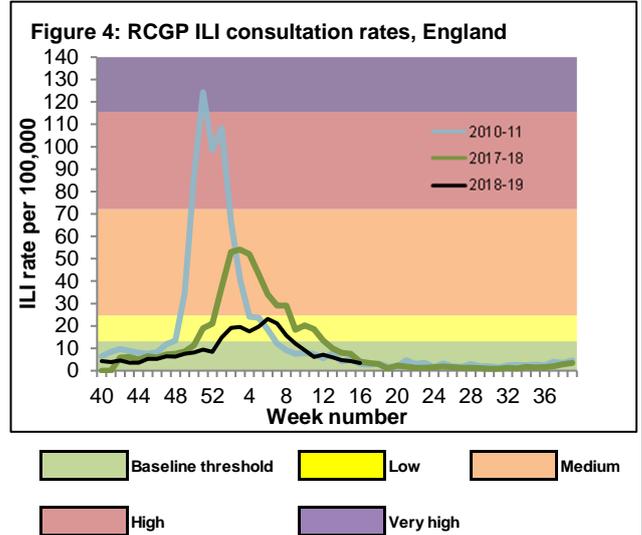
In week 16, the overall weekly influenza-like illness (ILI) GP consultation rate remained below baseline threshold levels in England. In the devolved administrations, ILI rates decreased or remained similar compared to the previous week and are below their respective baselines.

- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance was at 3.4 per 100,000 registered population in participating GP practices in week 16 2019, this is a decrease from 4.2 per 100,000 in week 15. This is below the baseline threshold (13.1 per 100,000) (Figure 4*). By age group, the highest rates were seen in the 45-64 year olds and in the 65-74 year olds (both at 4.7 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 16, overall weekly ILI consultation rates across countries of the UK have decreased or remained similar compared to the previous week, with all countries below their respective baseline threshold levels (Table 1).
- By age group, the highest rates were seen in the 75+ year olds in Scotland (5.3 per 100,000), in the 45-64 year olds in Wales and Northern Ireland (5.5 per 100,000 and 6.9 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	9	10	11	12	13	14	15	16			
England (RCGP)	4.2	3.9	4.5	3.6	3.6	5.3	5.2	6.4	6.2	7.6	8.1	9.4	8.4	14.8	19.2	19.6	17.5	19.7	23.1	21.1	15.7	12.1	9.1	6.2	7.2	6.0	4.7	4.2	3.4			
Wales	7.0	3.6	4.2	6.6	6.3	6.4	4.5	4.7	6.5	3.2	4.5	9.0	9.5	14.6	20.3	22.8	15.6	20.3	21.3	17.1	17.3	8.2	8.7	7.4	4.5	6.7	6.2	5.4	4.0			
Scotland	7.1	5.8	4.0	3.8	2.8	7.6	4.0	4.7	5.6	4.0	6.5	10.1	6.9	17.7	26.7	18.0	28.4	32.7	32.3	27.2	20.8	10.2	10.2	6.6	7.9	4.6	10.9	3.7	2.9			
Northern Ireland	3.8	3.5	3.8	3.6	3.8	5.0	6.3	4.5	5.6	6.0	8.4	8.9	9.0	13.5	18.9	14.4	12.4	14.5	16.2	14.5	11.1	9.0	5.9	5.6	4.1	5.7	4.3	4.4	3.6			

*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 3.2 per 100,000 in week 16 2019 (Figure 5).

- During week 16, no trends were observed across syndromic surveillance systems for ILI.

- Figure 5 represents a map of GP ILI consultation rates in week 16 across England by PHE centres, 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 16

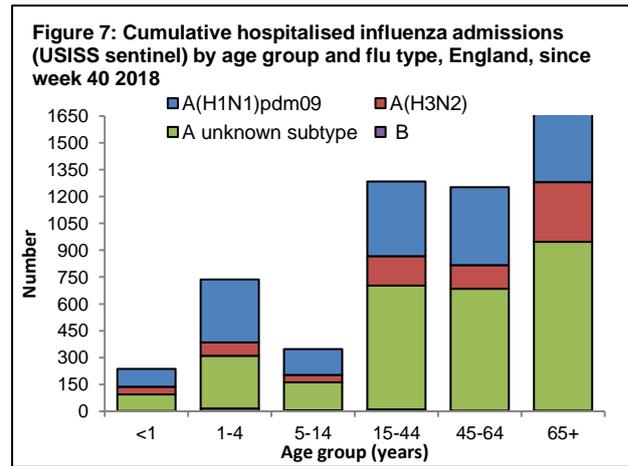
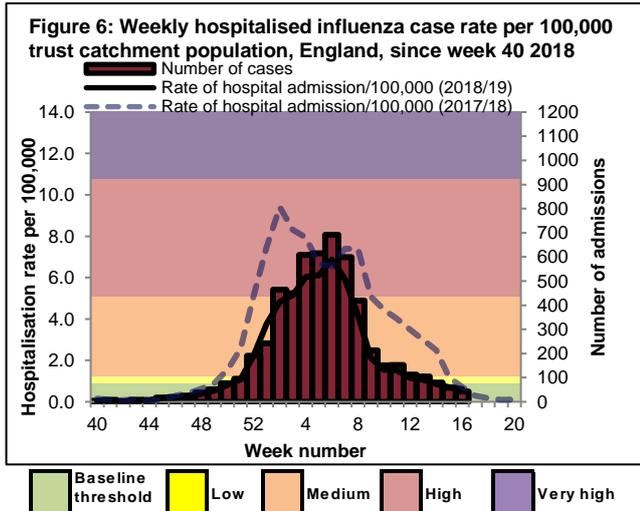


In week 16 2019, there were 43 hospitalised influenza cases (3 influenza A(H1N1)pdm09, 13 influenza A(H3N2), 26 influenza A(unknown) and 2 influenza B) reported through the USISS sentinel hospital network across England (17 NHS Trusts). There were 27 new admissions to ICU/HDU with confirmed influenza (4 influenza A(H1N1)pdm09, 7 influenza A(H3N2) and 16 influenza A(unknown subtype)) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (135/143 NHS Trusts in England).

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 16)

- In 16 2019, there were 43 hospitalised laboratory confirmed influenza cases (3 influenza A(H1N1)pdm09, 13 influenza A(H3N2), 26 influenza A(unknown) and 2 influenza B) reported from 17 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 0.62 per 100,000 trust catchment population compared to 0.70 per 100,000 in the previous week (Figures 6 and 7). This is below the baseline threshold of 0.89 per 100,000.

- A total of 5,547 hospitalised confirmed influenza admissions (1,859 influenza A(H1N1)pdm09, 788 influenza A(H3N2), 2,862 influenza A(unknown) and 38 influenza B) have been reported in the England since week 40 2018 via the sentinel scheme.

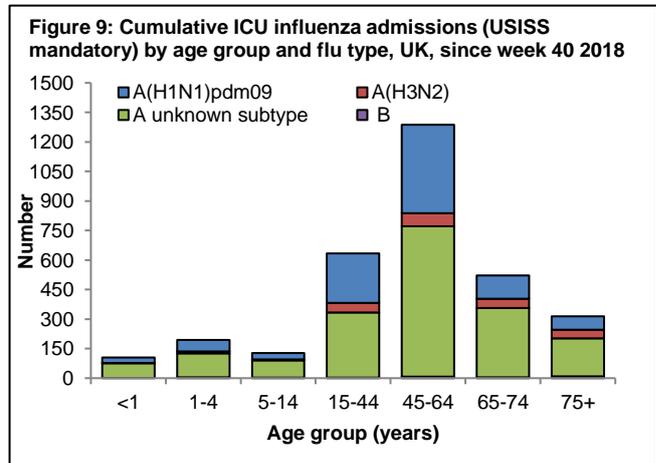
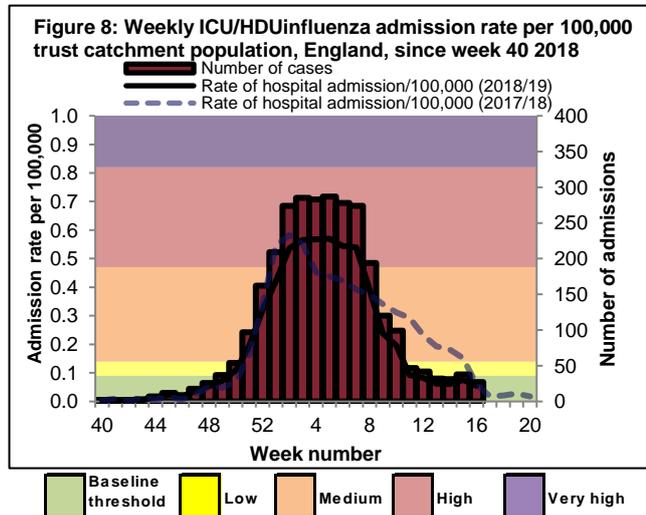


*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 7 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#disease-severity-and-mortality-data>

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 16)

- In week 16 2019, there were 27 new admissions to ICU/HDU with confirmed influenza (4 influenza A(H1N1)pdm09, 7 influenza A(H3N2) and 16 influenza A(unknown subtype)) reported through the USISS mandatory ICU scheme in the UK (135/143). The rate for England (n=27) was 0.05 per 100,000 trust catchment population (Figures 8 and 9) compared to 0.08 per 100,000 in week 15 2019. One fatal influenza cases in ICU were reported in week 16 2019 in the UK.

- A total of 3,184 new admissions (1,007 influenza A(H1N1)pdm09, 222 influenza A(H3N2), 1,926 influenza A(unknown subtype) and 29 influenza B) and 313 confirmed deaths have been reported in the UK since week 40 2018.



*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 7 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 16)

- In week 16, there were no new admissions for laboratory confirmed influenza among the 6 Severe Respiratory Failure (SRF) centres in the UK.

- Since week 40 2018 there have been 96 confirmed influenza admissions (78 A(H1N1)pdm09, 6 A(H3N2) and 12 influenza A(unknown subtype) among ECMO centres.

All-cause mortality data

[| Back to top |](#)

In week 16 2019, 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, no statistically significant excess all-cause mortality for all ages was observed in Wales in week 16 2019 and in Scotland in week 14 2019.

- All-cause death registrations, England and Wales

- In week 15 2019, an estimated 10,291 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is an increase compared to the 10,126 estimated death registrations in week 14 2019.

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

- In week 16 2019 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 sub-nationally (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 observed in Wales in week 16 2019 and in Scotland in week 14 2019 (Table 2). Data was unavailable for Northern Ireland in week 16.

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

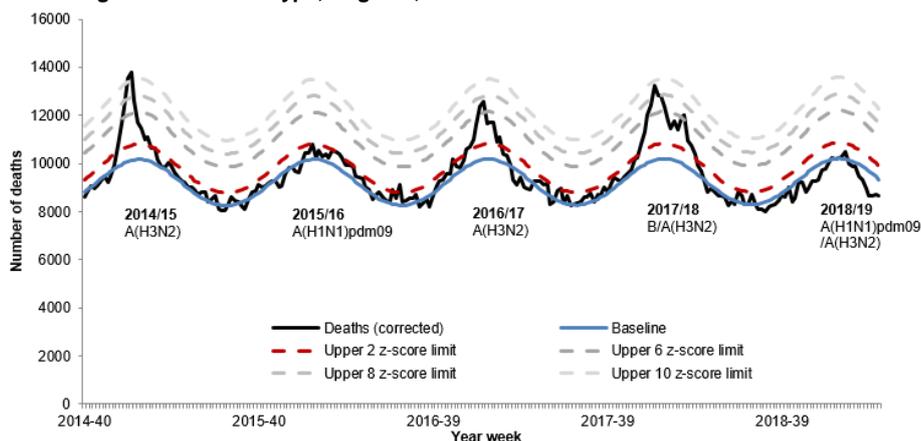
Country	Excess detected in week 16 2019?	Weeks with excess in 2018/19
England	×	NA
Wales	×	NA
Northern Ireland	NA	6;11

Country	Excess detected in week 14 2019?	Weeks with excess in 2018/19
Scotland	×	52-2

* 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-age all-cause deaths, with the dominant circulating influenza A subtype, England, 2014 to week 16 2019



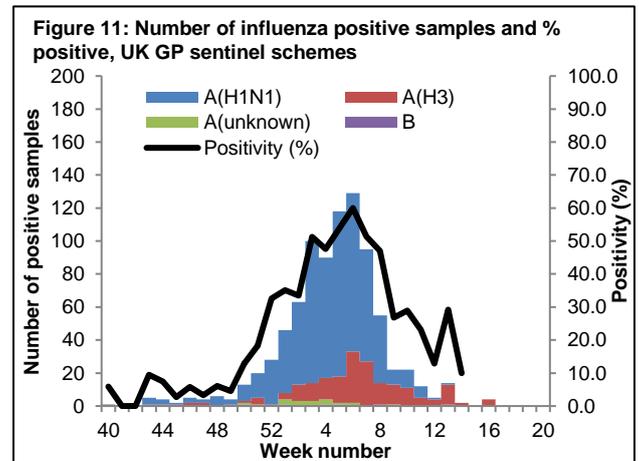
*Note: Delays in receiving all registered deaths from April 2018, following changes in IT systems at ONS, may result in some delays in the model to adjust for most recent deaths.

In week 16 2019, 4 samples tested positive for influenza the UK GP sentinel schemes. 137 positive detections were recorded through the DataMart scheme (3 influenza A(H1N1)pdm09, 84 influenza A(H3), 49 influenza A(not subtyped) and 1 influenza B) with a positivity of 6.6%, this is below the baseline threshold of 9.2%.

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

-In week 16 2019, 4 samples tested positive for influenza through the UK GP sentinel swabbing schemes (Figure 11).

-Since week 40, a total of 869 samples (655 influenza A(H1N1)pdm09, 187 influenza A(H3), 18 influenza A(unknown subtype) and 9 influenza B) tested positive for influenza through this scheme.

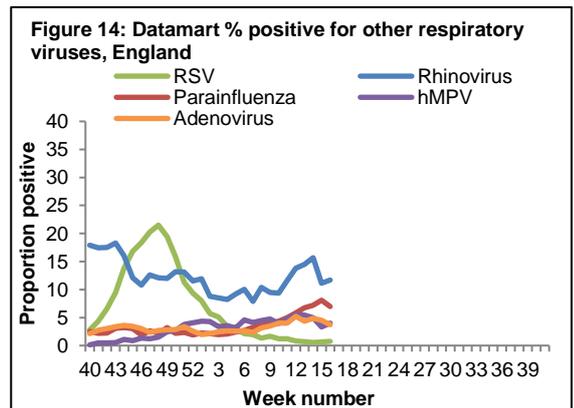
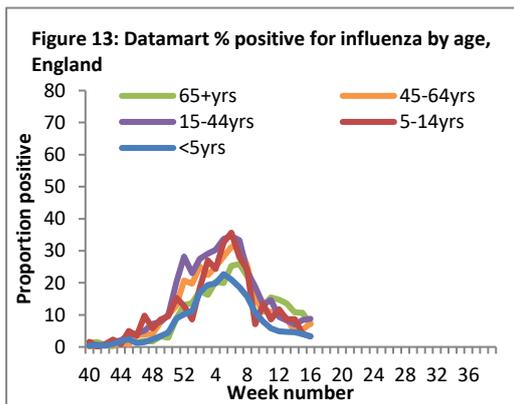
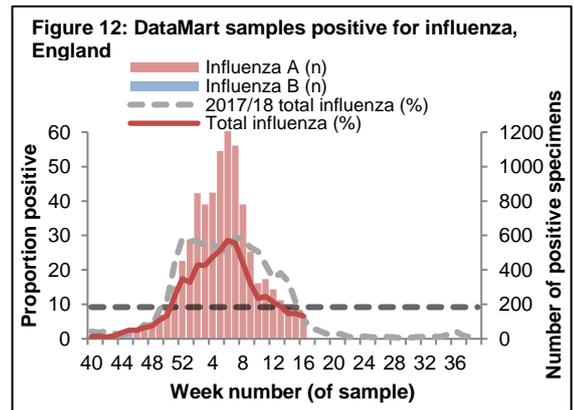


NB. Positivity (%) omitted when fewer than 10 specimens were tested

- Respiratory DataMart System (England)

- In week 16 2019, out of the 2,086 respiratory specimens reported through the Respiratory DataMart System, 137 samples were positive for influenza (3 influenza A(H1N1)pdm09, 84 influenza A(H3), 49 influenza A(not subtyped) and 1 influenza B) (Figure 12), with an overall positivity of 6.6% compared to 7.3% the previous week, which is below the MEM baseline threshold for this season of 9.2%. The highest positivity for influenza by age group was seen in the 15-44 year olds at 8.7% in week 16 (Figure 13).

-RSV positivity remained low. Rhinovirus positivity decreased from 16.4% in week 14 to 13.0% in week 15. Parainfluenza and adenovirus positivities decreased slightly from 8.1% and 4.5% in week 15 to 7.0% and 3.7% in week 16 respectively. Human metapneumovirus (hMPV) positivity increased slightly from 3.3% in week 15 to 4.0% in week 16 2019 (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 9.2% in 2018/19.

- 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 has characterised 962 influenza A(H1N1)pdm09 viruses detected since week 40. Genetic characterisation of 922 influenza A(H1N1)pdm09 viruses detected since week 40 shows that they all belong in the genetic subgroup 6B.1, which was the predominant genetic subgroup in the 2017/18 season. Two-hundred and ninety nine A(H1N1)pdm09 viruses have been antigenically characterised and are similar to the A/Michigan/45/2015-like Northern Hemisphere 2018/19 (H1N1)pdm09 vaccine strain.

Genetic characterisation of 226 A(H3N2) influenza viruses shows that they all belong to genetic subclade 3C.2a, with 218 belonging to a cluster within this genetic subclade designated as 3C.2a1. Eleven viruses belonging to the genetic subclade 3C.3a have been identified. The Northern Hemisphere 2018/19 influenza A(H3N2) vaccine strain belongs in genetic subclade 3C.2a1. Of three influenza B viruses characterised to date, two 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. One of them clusters in a subgroup characterised by deletion of two amino acids in the HA. The N.Hemisphere 2018/19 B/Victoria-lineage quadrivalent and trivalent vaccine component virus (a B/Colorado/06/2017-like virus), is a double deletion subgroup virus. The other influenza B virus has been characterised genetically as belonging to genetic clade 3 of the B/Yamagata lineage and antigenically as similar to the B/Phuket/3073/2013 B/Yamagata lineage vaccine component in the N.Hemisphere 2018/19 quadrivalent vaccine.

Table 3: Viruses characterised by PHE Reference Laboratory, 2018/19

Virus	No. viruses characterised			
	Genetic and antigenic	Genetic only	Antigenic only	Total
A(H1N1)pdm09	259	663	40	962
A(H3N2)	0	237	0	237
B/Yamagata-lineage	1	0	0	1
B/Victoria-lineage	0	2	0	2

- 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 2018/19 season since week 40 2018, 901 influenza A(H1N1)pdm09 viruses have been tested for oseltamivir susceptibility, 880 were fully susceptible and 21 were resistant confirmed by PHE-RVU. All 21 oseltamivir resistant cases have the H275Y amino acid substitution. 7 of the 21 cases are known to have received oseltamivir treatment. One case has no known exposure to oseltamivir. The remaining 13 cases are under investigation. 713 out of the 901 influenza A(H1N1)pdm09 virus have also been tested for zanamivir susceptibility and all were susceptible. 171 and 158 influenza A(H3N2) viruses have been tested for oseltamivir susceptibility and for zanamivir susceptibility, respectively, and all were susceptible. Three influenza B viruses have been tested for susceptibility for both oseltamivir and zanamivir and all were susceptible to both agents

- Antimicrobial susceptibility

-Table 4 shows in the 12 weeks up to 21 April 2019, 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 21 April 2019, E&W

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	4901	89
	Macrolides	5333	83
	Tetracycline	5249	85
<i>H. influenzae</i>	Amoxicillin/ampicillin	19864	69
	Co-amoxiclav	21415	84
	Macrolides	3839	5
	Tetracycline	21419	98
<i>S. aureus</i>	Methicillin	7598	92
	Macrolides	8470	65
MRSA	Clindamycin	434	45
	Tetracycline	564	79
MSSA	Clindamycin	4792	76
	Tetracycline	6459	93

*Macrolides = erythromycin, azithromycin and clarithromycin

- Provisional data from the fifth monthly collection of the influenza vaccine uptake by frontline healthcare workers show 70.3% were vaccinated by 28 February 2019 from 98.8% of all organisations, compared to 68.7 % vaccinated in the previous season by 28 February 2018. The [report](#) provides uptake at national, NHS England local team and Trust-level.
- Provisional data from the fourth [monthly](#) collection of influenza vaccine uptake for children of school years Reception, 1, 2, 3, 4 and 5 age (from a sample of 100% of all Local Authorities in England) show the provisional proportion of children in England who received the 2018/19 influenza vaccine via school, pharmacy or GP practice by 31 January 2019 in targeted groups as follows:
 - 63.9% in children school year reception age (4-5 yrs) compared to 62.6% by 31 January 2018
 - 63.4% in children school year 1 age (5-6 yrs) compared to 60.9% by 31 January 2018
 - 61.4% in children school year 2 age (6-7 yrs) compared to 60.3% by 31 January 2018
 - 60.2% in children school year 3 age (7-8 yrs) compared to 57.5% by 31 January 2018
 - 58.0% in children school year 4 age (8-9 yrs) compared to 55.7% by 31 January 2018
 - 56.2% in children school year 5 age (9-10 yrs); age group not included in 2017/18 school vaccine programme.
- Provisional data from the fifth [monthly](#) collection of influenza vaccine uptake in GP patients up to 28 February 2019 show that in 97.6% of all GP practices in England responding to the main GP survey, the proportion of people in England who receive the 2018/19 influenza vaccine was as follows:
 - 48.0% under 65 year olds in a clinical risk group compared to 48.9 % by 31 January 2018
 - 45.2% in pregnant women compared to 47.2% by 31 January 2018
 - 72.0% in 65+ year olds compared to 72.6% by 31 January 2018
- Provisional data from the fourth [monthly](#) collection of influenza vaccine uptake in GP patients up to 31 January 2019 show that in 99.4% of all GP practices in England responding to the child GP survey, the proportion of people in England who receive the 2018/19 influenza vaccine was as follows:
 - 43.1% in 2 year olds compared to 42.8% by 31 January 2018
 - 45.2% in 3 year olds compared to 44.2% by 31 January 2018
- The 2018/19 mid-season influenza vaccine effectiveness study was recently [published](#). The report is based on 6 European studies including the UK, analysing influenza data from October 2018 to January 2019.

International Situation

In the temperate zone of the Northern hemisphere, influenza activity decreased overall. In the temperate zones of the Southern hemisphere, influenza activity remained at inter-seasonal levels, with the exception of some parts of Australia where influenza activity remained above inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

- [Europe](#) updated on 19 April 2019 (Joint ECDC-WHO Europe Influenza weekly update)

In week 15 2019, influenza A virus detections dominated with more A(H3N2) viruses than A(H1N1)pdm09 viruses and few influenza B viruses detected.

For week 15 2019, of 41 Member States and areas reporting on intensity, 17 reported baseline (across the region), 23 reported low (across the region) and 1 reported medium (Kazakhstan) intensity. Of 41 Member States and areas reporting on geographic spread, 6 reported no activity (in eastern, southern and western areas), 18 reported sporadic cases (across the region), 6 reported local spread (in northern and southern areas), 6 reported regional spread (eastern northern and southern areas) and 5 reported widespread activity.

For week 15 2019, 136 (20.4%) of 667 sentinel specimens tested positive for an influenza virus; 133 (97.8%) were type A and 3 (2.2%) were type B. Of the 70 subtyped A viruses, 23 (32.9%) were A(H1N1)pdm09 and 47 (67.1%) were A(H3N2).

For week 15 2019, 46 laboratory-confirmed influenza cases were reported in ICUs, all were influenza type A viruses. Among the 43 laboratory-confirmed influenza cases in other wards reported, all were influenza type A viruses.

For week 15 2019, 1,834 specimens from non-sentinel sources (such as hospitals, schools, primary care facilities not involved in sentinel surveillance, or nursing homes and other institutions) tested positive for an influenza virus; 96.3% were type A and 3.7% were type B. Of the 486 A viruses subtyped, 35.6% were A(H1N1)pdm09 and 64.4% were A(H3N2). No influenza B viruses were ascribed to a lineage.

For week 15 2019, data from the 23 Member States or areas reporting to the [EuroMOMO](#) project were included in pooled analyses. The pooled estimates indicated that the excess mortality observed in previous weeks has returned to normal levels.

- [United States of America](#) updated on 19 April 2019 (Centre for Disease Control report)

During week 15, influenza activity continues to decrease but remains elevated in the United States. Influenza A(H1N1)pdm09 viruses predominated from October to mid-February and influenza A(H3N2) viruses have been more commonly identified since late February. Small numbers of influenza B viruses have also been reported.

A cumulative rate of 62.3 laboratory-confirmed influenza-associated hospitalisations per 100,000 population was reported, with the highest rate among those aged 65+ years old.

Nationwide during week 15, the proportion of outpatient visits for influenza-like illness (ILI) decreased to 2.4% which remains above the national baseline of 2.2%.

In week 14, the proportion of deaths attributed to pneumonia and influenza (P&I) reported was 6.6%, below the epidemic threshold (7.1% for week 14) in the National Center for Health Statistics (NCHS) Mortality Surveillance System.

Five influenza-associated paediatric deaths (3 influenza A(H3) and 2 influenza A(not subtyped)) were reported to the CDC during week 15.

- [Canada](#) updated on 19 April 2019 (Public Health Agency report)

Overall, a second smaller wave of sustained influenza activity, dominated by influenza A(H3N2), continues to be observed in Canada.

In week 15, the percentage of tests positive for influenza remained steady at 20%. A total 1,512 laboratory detections of influenza were reported, of which 90% were influenza A. Influenza A(H3N2) accounted for 83% of subtyped influenza A detections.

In week 15, 1.0% of visits to healthcare professionals were due to ILI.

To date this season, 2,859 influenza-associated hospitalisations have been reported by participating provinces and territories, of which 2,811 (98.4%) were associated with influenza A, amongst those subtyped 84% were A(H1N1)pdm09. The highest estimated rate seen was among adults over 65 years of age.

To date this season, 513 ICU admissions and 148 deaths have been reported; all but 6 ICU admissions and all but 1 of the reported deaths were associated with influenza A, with the highest percentage of ICU admissions were reported in adults aged 45-64 years (42%).

- [Global influenza update](#) updated on 15 April 2019 (WHO website)

In the temperate zone of the Northern hemisphere, influenza activity decreased overall. In the temperate zones of the Southern hemisphere, influenza activity remained at inter-seasonal levels, with the exception of some parts of Australia where influenza activity remained above inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

In North America, influenza activity continued, with influenza A(H3N2) as the dominant subtype detected. ILI activity was low overall in Canada and in the United States of America (USA), but remained above the seasonal threshold for the USA. In Mexico, influenza activity continued to decrease with all seasonal influenza subtypes co-circulating.

In Europe, influenza activity decreased across the continent. Of 26 Member States and areas reporting intensity above baseline, 3 reported medium intensity (Bosnia and Herzegovina, Luxembourg and Slovakia). ILI activity was reported above baseline in Estonia, Norway and the Republic of Moldova. Influenza A(H1N1)pdm09 and A(H3N2) viruses continued to co-circulate, with more detections of A(H3N2).

In Central Asia, influenza detections were low.

In Northern Africa, influenza detections were low across reporting countries.

In Western Asia, influenza activity continued to decrease overall with all seasonal influenza subtypes co-circulating. In Saudi Arabia, severe acute respiratory infection (SARI) continued to be reported and influenza percent positivity increased slightly, with detections of influenza A(H1N1)pdm09 and B viruses.

In East Asia, influenza activity continued to be reported, although decreased from the peak in week 03/2019. While all seasonal influenza subtypes co-circulated, influenza B became the most frequently detected. In China, influenza activity remained elevated with influenza B (Victoria lineage) most frequently detected. In Northern China, a second wave of ILI and influenza activity appeared to start in recent weeks. Influenza activity continued to decrease and was reported below baseline in China, Hong Kong SAR with influenza A viruses detected. In the Republic of Korea, after a first wave of influenza activity predominated by influenza A(H1N1)pdm09 virus, a second wave was reported in recent weeks with detections of influenza A(H3N2) and B viruses.

In the Caribbean and Central American countries, influenza activity remained low overall. In the tropical countries of South America, influenza and respiratory syncytial virus (RSV) activity were low in general.

In Western Africa, influenza detections were low across reporting countries. Low to no detections were reported in Middle Africa. In Eastern Africa, influenza detections continued to be reported with both seasonal influenza A subtypes circulating.

In Southern Asia, influenza activity appeared to decrease, with influenza A(H1N1)pdm09 virus predominating. Detections of influenza B viruses were reported in Bangladesh. Influenza activity decreased in India with influenza A(H1N1)pdm09 virus most frequently detected followed by influenza A(H3N2) viruses.

In South East Asia, influenza activity remained elevated in Thailand, with influenza B (Victoria-lineage) most frequently detected followed by influenza A viruses. Low detections of influenza B (Victoria- lineage) were reported in Lao PDR.

The WHO GISRS laboratories tested more than 139,623 specimens between 18 March 2019 and 31 March 2019. 30,960 were positive for influenza viruses, of which 25,464 (82.2%) were typed as influenza A and 5,496 (17.8%) as influenza B. Of the sub-typed influenza A viruses, 4,189 (40.6%) were influenza A (H1N1)pdm09 and 6,139 (59.4%) were influenza A (H3N2). Of the characterized B viruses, 154 (3.8%) belonged to the B-Yamagata lineage and 3,919 (96.2%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 15 April 2019 (WHO website)

Influenza A(H5) viruses

Between [12 February 2019 and 9 April 2019](#), no new laboratory-confirmed human cases of influenza A(H5) virus infections were reported to WHO.

According to reports received by the World Organization for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in Africa, Europe and Asia.

Influenza A(H7N9)

Between [12 February 2019 and 9 April 2019](#), 1 new laboratory-confirmed human case of influenza A(H7N9) virus infection were reported to WHO from China. There have been no publicly available reports from animal health authorities in China of influenza A(H7N9) virus detections in animals this year, except for one report of an outbreak in domesticated birds.

Influenza A(H9N2)

Between [12 February 2019 and 9 April 2019](#), 1 new laboratory-confirmed case of influenza A(H9N2) virus infection was reported to WHO from China. Avian influenza A(H9N2) viruses are enzootic in poultry in China.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 24 April 2019

Up to 24 April 2019, a total of five cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (three imported and two linked cases) have been confirmed in the UK. On-going surveillance has identified 1,492 suspected cases in the UK since September 2012 that have been investigated for MERS-CoV and tested negative.

From [1 February to 28 February 2019](#), the National IHR Focal Point of Saudi Arabia reported 68 additional cases of Middle East respiratory syndrome coronavirus (MERS-CoV) infection, including 10 deaths. Of the 68 MERS cases reported in February, 19 cases occurred in cities other than Wadi Aldwasir.

Globally, since September 2012 and up to 28 February 2019, [WHO](#) has been notified of 2,374 laboratory-confirmed cases of infection with MERS-CoV, including 823 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 very low.

Acknowledgements

[| Back to top |](#)

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Related links

[| Back to top |](#)

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](#))
- 2018/19 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))