



# PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

06 December 2018 – Week 49 report (up to week 48 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 – Week 48 (ending 02 December 2018)

- Influenza activity has started to increase, with sporadic cases of influenza detected in the community though all indicators remain **Below Baseline** threshold levels.
- The impact of flu on healthcare services is **Below Baseline** threshold levels for hospitalisations and ICU/HDU admissions.
- RSV activity appears to be stabilising. Early indications show influenza A(H1N1)pdm09 is the dominant subtype

### Community

- Thirty-one new acute respiratory outbreaks have been reported in the past 7 days. Twenty-five outbreaks were reported from care homes where 1 tested positive for influenza A(not subtyped), 2 were positive for RSV and 1 tested positive for rhinovirus. One outbreak was reported from a hospital with no test result available. Five outbreaks were reported from schools with no test results available.

### Primary Care

- The rate of influenza-like illness (ILI) was **Below Baseline** threshold levels. The overall weekly ILI GP consultation rate was 6.2 per 100,000 registered population in participating GP practices for England, this is similar to 6.4 per 100,000 in week 47.
- In the devolved administrations, ILI rates were also **Below Baseline** threshold levels.

GP ILI  
Consultations  
England



### Secondary Care

- Hospitalisation rate observed was **Below Baseline** threshold levels, with a rate of 0.41 per 100,000 trust catchment population for England (21 NHS Trusts), this is an increase from 0.26 per 100,000 in week 47.
- ICU/HDU admission rate observed was **Below Baseline** threshold levels, with a rate of 0.04 per 100,000 trust catchment population for England (124/143 NHS Trusts), this is the same as 0.04 per 100,000 in week 47.
- There were no new influenza admissions reported from the 6 Severe Respiratory Failure centres in the UK.

Hospitalisation



ICU/HDU



### All-cause mortality

- In week 48 2018, 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 Scotland, Northern Ireland and Wales.

### Microbiological surveillance

- Primary care: 2 samples tested positive for influenza (2 influenza A(H1N1)pdm09) with a positivity of 3.5% through the UK GP sentinel schemes.
- Secondary care: Influenza percent positivity was 3.8%, **Below Baseline** threshold levels, a slight increase from 3.4% in week 47. Eighty detections were recorded through the DataMart scheme (34 influenza A(H1N1)pdm09, 9 influenza A(H3), 34 influenza A(unknown subtype) and 3 influenza B). RSV positivity was stable at 20.1% with the highest positivity amongst the <5 year olds stabilising at 45.2%.
- For further information and guidance on RSV see [NICE guidance](#)

Secondary  
Care



### Vaccination

- Weekly uptake: Up to week 48 2018, in 95.8% of GP practices the provisional proportion of people in England who had received the 2018/19 influenza vaccine in targeted groups was: 40.7% in under 65 years in a clinical risk group, 40.8% in pregnant women and 65.4% in 65+ year olds. In 96.7% of GP practices reporting for the childhood collection the provisional proportion vaccinated was: 37.3% in 2 year olds and 38.3% in 3 year olds.
- Provisional data from the first monthly collection of influenza vaccine uptake by frontline healthcare workers show 46.3% were vaccinated by 31 October 2018, compared to 46.0% vaccinated in the previous season by 31 October 2017.
- Provisional data from the first monthly collection of influenza vaccine uptake for children of school years reception to year 5 shows 20.5% in school year reception age, 20.7% in school year 1 age, 19.9% in school year 2 age, 19.7% in school year 3 age, 18.9% in school year 4 age and 18.2% in school year 5 age were vaccinated by 31 October 2018.

### International situation

- In the temperate zone of the Northern hemisphere, influenza activity started to increase although overall influenza activity remained low. Increased influenza was reported in some countries of South-East Asia and Central America. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections

#### Key

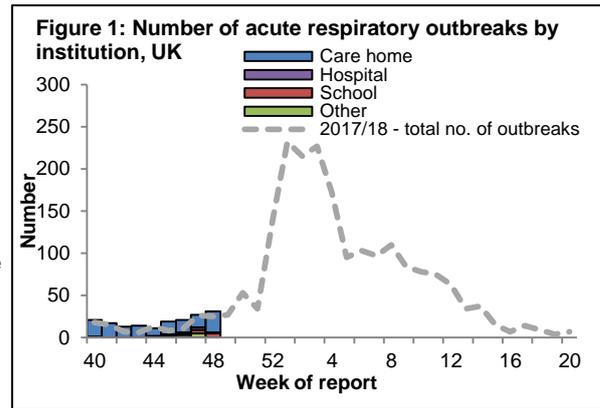
Arrows (vs previous week):	Colour (intensity according to MEM threshold):	
Increase	Below Baseline	High
Decrease	Low	Very High
Stable/No trend	Moderate	

**Thirty-one new acute respiratory outbreaks were reported in the past 7 days.**

- Acute respiratory disease outbreaks

- Thirty-one new acute respiratory outbreaks have been reported in the past 7 days. Twenty-five outbreaks were reported from care homes where 1 tested positive for influenza A(not subtyped), 2 were positive for RSV and 1 tested positive for rhinovirus. One outbreak was reported from a hospital with no test results available. Five outbreaks were reported from schools with no test results available

-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and [respscids@phe.gov.uk](mailto:respscids@phe.gov.uk)

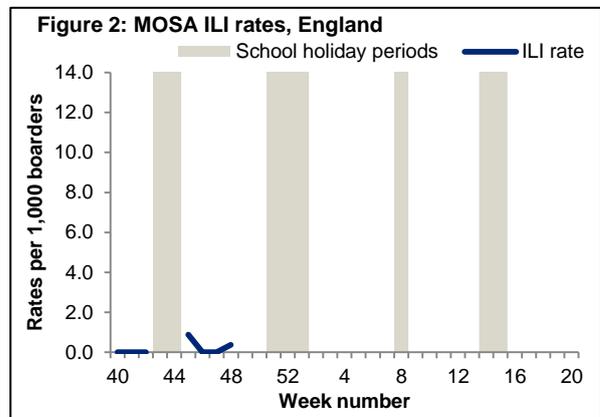


- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

- 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 6,530 boarders.

- The overall rate (all boarders) for week 48 was 0.4 per 1,000 boarders compared to 0.0 per 1,000 boarders in week 47

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

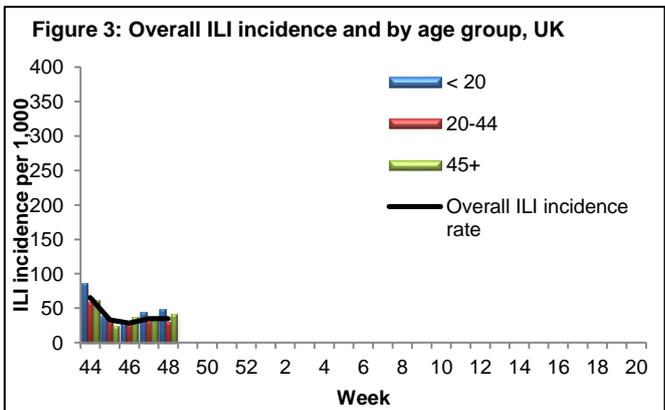


- FluSurvey

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

- The overall ILI rate (all age groups) for week 48 was 35.0 per 1,000 (92/2632 people reported at least 1 ILI) (Figure 3), with the highest rate seen in the <20 year olds (48.9 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 48, 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 remain below baseline levels.

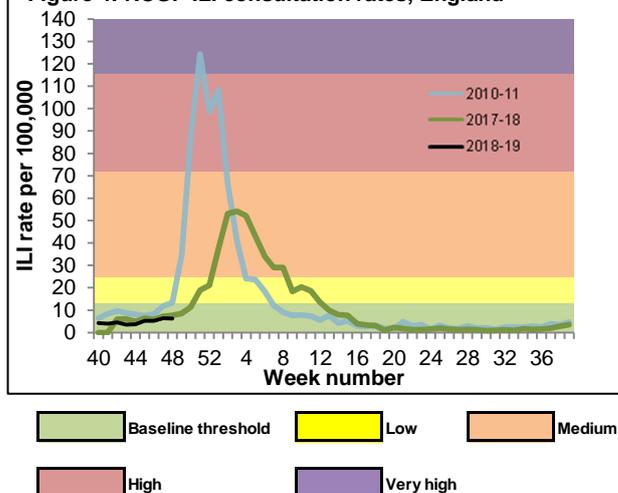
- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance was at 6.2 per 100,000 registered population in participating GP practices in week 48, this is similar to 6.4 per 100,000 in week 47. This is below the baseline threshold (13.1 per 100,000) (Figure 4\*). By age group, the highest rates were seen in 45-64 year olds (9.4 per 100,000) and 15-44 year olds (6.3 per 100,000).

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

Figure 4: RCGP ILI consultation rates, England



UK

- In week 48, overall weekly ILI consultation rates across the countries of the UK were all below their respective baseline thresholds (Table 1).
- By age group, the highest rates were seen in the 15-44 year olds in Scotland (7.9 per 100,000), in the 1-4 year olds in Northern Ireland (7.6 per 100,000) and in the 75+ year olds in Wales (10.1 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
England (RCGP)	4.2	3.9	4.5	3.6	3.6	5.3	5.2	6.4	6.2								
Wales	7.0	3.6	4.2	6.6	6.3	6.4	4.5	4.7	6.5								
Scotland	7.1	5.1	3.6	4.5	2.9	7.3	4.2	5.2	5.9								
Northern Ireland	3.8	3.5	3.8	3.6	3.8	5.0	6.3	4.5	5.6								

*\*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 5.2 per 100,000 in week 48(Figure 5).

- During week 48, there were further increases in bronchitis/bronchiolitis in GPOOH but a decrease in bronchiolitis ED attendances. NHS 111 cold/flu calls increased slightly and are now at low intensity levels after crossing baseline threshold. GP consultation for respiratory conditions including upper and lower respiratory tract infections and asthma increased.

- Figure 5 represents a map of GP ILI consultation rates in week 48 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 48

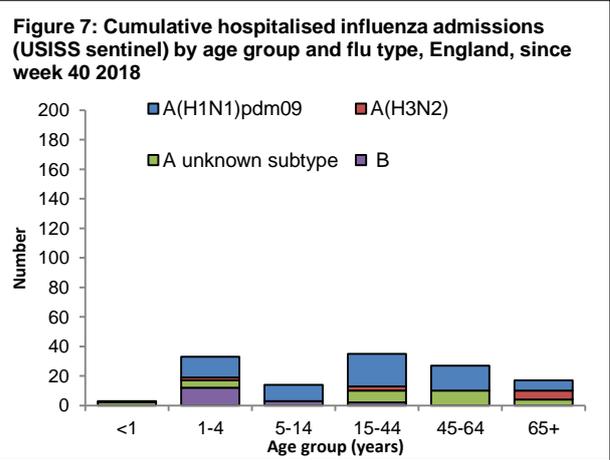
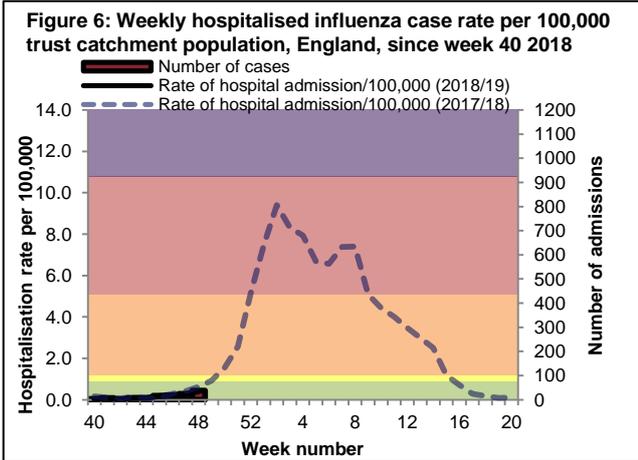


In week 48 2018, there were 38 hospitalised confirmed influenza cases (27 influenza A(H1N1)pdm09, 4 influenza A(H3N2), 6 influenza A(unknown subtype) and 1 influenza B) reported through the USISS sentinel hospital network across England (21 NHS Trusts). There were 18 new admissions to ICU/HDU with confirmed influenza (6 influenza A(H1N1)pdm09, and 12 influenza A(unknown subtype)) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (124/143 NHS Trusts in England).

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 48)

- In week 48, there were 38 hospitalised laboratory confirmed influenza cases (27 influenza A(H1N1)pdm09, 4 influenza A(H3N2), 6 influenza A(unknown subtype) and 1 influenza B) reported from 21 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 0.41 per 100,000 trust catchment population compared to 0.27 per 100,000 in the previous week (Figures 6 and 7). This is below the baseline impact threshold of 0.89 per 100,000.

- A total of 129 hospitalised confirmed influenza admissions (72 influenza A(H1N1)pdm09, 11 influenza A(H3N2), 29 influenza A(unknown subtype) and 17 influenza B) and have been reported in the UK since week 40 2018 via the sentinel scheme.



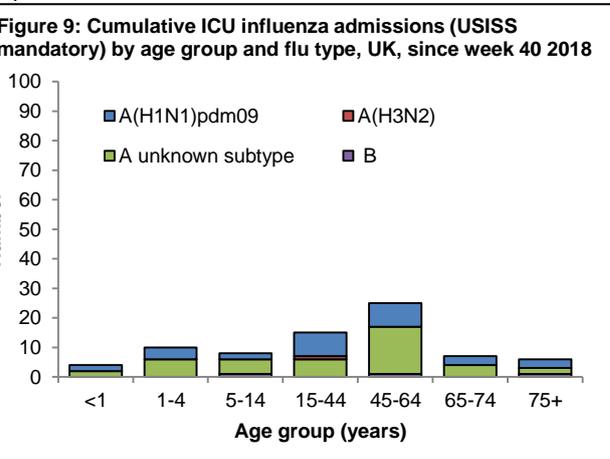
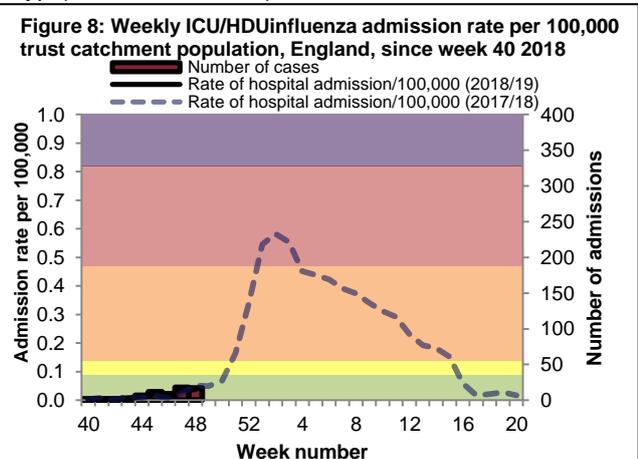
Baseline threshold
  Low
  Medium
  High
  Very high

\*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>

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 48)

- In week 48, there were 18 new admissions to ICU/HDU with confirmed influenza (6 influenza A(H1N1)pdm09 and 12 influenza A(unknown subtype)) reported across the UK (124/143 Trusts in England) through the USISS mandatory ICU scheme. The rate for England (n=17) was 0.04 per 100,000 trust catchment population compared to 0.04 per 100,000 in the previous week (Figures 8 and 9). This is below the baseline impact threshold of 0.09 per 100,000. One influenza laboratory confirmed death was reported to have occurred in ICU in week 47 in the UK.

- A total of 75 new ICU/HDU admissions (30 influenza A(H1N1)pdm09, 1 influenza A(H3N2), 41 influenza A(unknown subtype) and 3 influenza B) and 3 confirmed deaths have been reported in the UK since week 40 2018.



Baseline threshold
  Low
  Medium
  High
  Very high

\*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 48)

- In week 48, there were no new admissions for laboratory confirmed influenza among the 6 Severe Respiratory Failure (SRF) centres in the UK.

- Since week 40 there has been 1 confirmed influenza admission (1 influenza A(unknown subtype)) to ECMO centres

### All-cause mortality data

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**In week 48 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, no statistically significant excess all-cause mortality for all ages was observed in Scotland, Wales and Northern Ireland in week 48 2018.**

- All-cause death registrations, England and Wales

- In week 47 2018, an estimated 9,957 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a decrease compared to the 10,193 estimated death registrations in week 46 2018.

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

- In week 48 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 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 was observed in Scotland, Wales and Northern Ireland in week 48 2018 (Table 2).

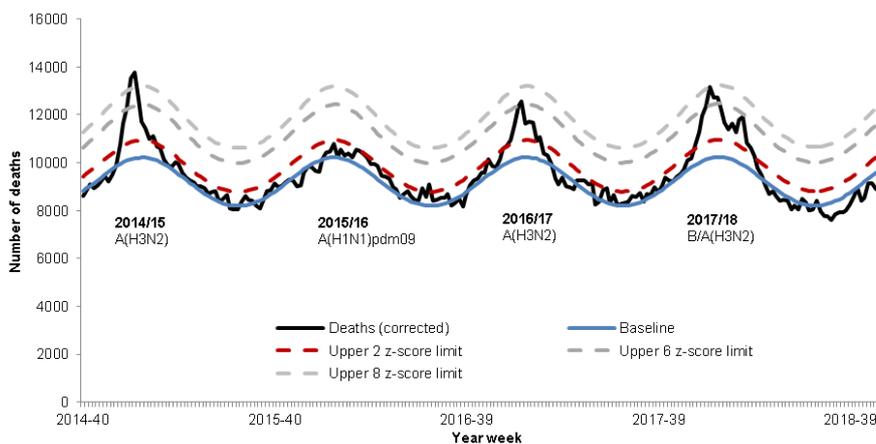
**Table 2: Excess mortality by UK country, for all ages\***

Country	Excess detected in week 48 2018?	Weeks with excess in 2018/19
England	x	NA
Wales	x	NA
Scotland	x	NA
Northern Ireland	x	NA

\* 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-age all-cause deaths, with the dominant circulating influenza A subtype, England, 2014 to week 48 2018**



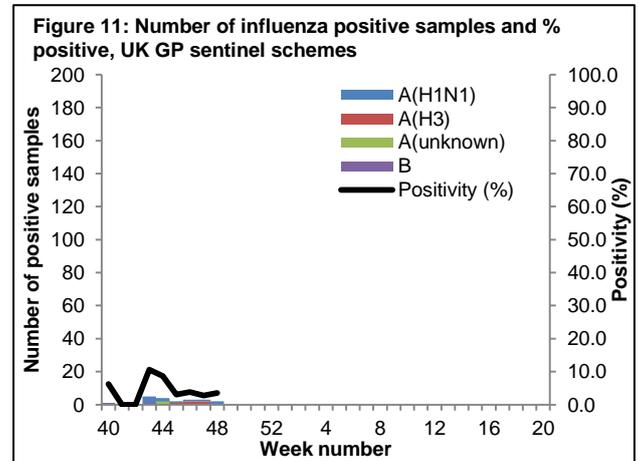
\*Note: Delays in receiving all registered deaths from April 2018, following changes in IT systems at ONS, may result in some delays in the model to adjust for most recent deaths.

In week 48 2018, 2 samples tested positive for influenza (2 influenza A(H1N1)pdm09) with a positivity of 3.5% through the UK GP sentinel schemes. 80 positive detections were recorded through the DataMart scheme (34 influenza A(H1N1)pdm09, 9 influenza A(H3), 34 influenza A(unknown subtype) and 3 influenza B) with a positivity of 3.8%, this is below the baseline threshold of 9.2%.

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

- In week 48, 2 samples tested positive for influenza (2 influenza A(H1N1)pdm09) with an overall positivity of 3.5% compared to 2.7% in week 47 through the UK GP sentinel swabbing schemes (Figure 11).

Since week 40, a total of 20 samples (11 influenza A(H1N1)pdm09, 5 influenza A(H3), 2 influenza A(unknown subtype) and 2 influenza B) tested positive for influenza through this scheme.

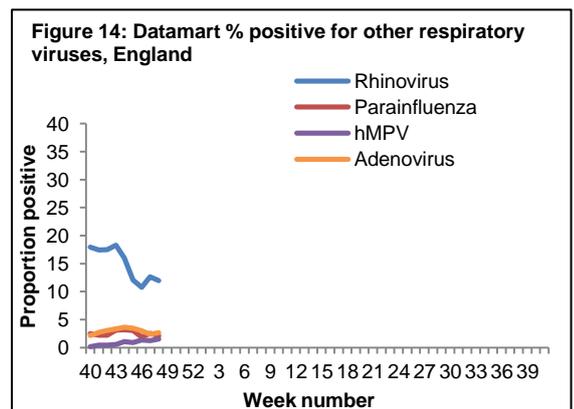
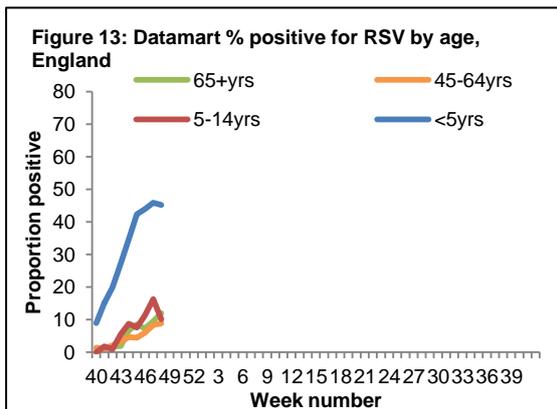
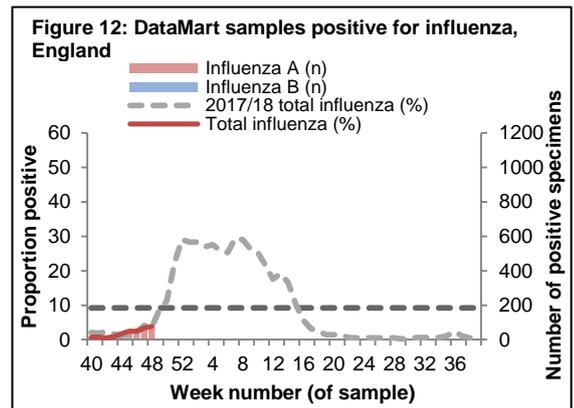


NB. Positivity (%) omitted when fewer than 10 specimens were tested

- Respiratory DataMart System (England)

- In week 48 2018, out of the 2,085 respiratory specimens reported through the Respiratory DataMart System, 80 samples (3.8%) were positive for influenza (34 influenza A(H1N1)pdm09, 9 influenza A(H3), 34 influenza A(unknown subtype) and 3 influenza B) (Figure 12), which is below the MEM baseline threshold for this season of 9.2%. The overall positivity for RSV was stable at 20.1% the same as the previous week. Although the main affected population is in children <5 years the positivity also appeared to stabilise in week 48 at 45.2% compared to 45.9% in week 47 (Figure 13).

Rhinovirus and parainfluenza positivites decreased slightly from 12.6% and 2.6% in week 47 to 12.0% and 2.1% in week 48 respectively. Adenovirus and human metapneumovirus (hMPV) positivites remained low (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 15 influenza A(H3N2) viruses detected since week 40. Genetic characterisation of these A(H3N2) viruses shows that they belong to genetic subclade 3C.2a1. The Northern Hemisphere 2018/19 influenza A(H3N2) vaccine strain belongs in genetic subclade 3C.2a1.

Genetic characterisation of 19 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. Twenty five 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.

Of two influenza B viruses characterised to date, one influenza B virus has been characterised where sequencing of the haemagglutinin (HA) gene shows it belongs within genetic clade 1A of the B/Victoria lineage, 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 as antigenically 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
<b>A(H1N1)pdm09</b>	9	10	16	35
<b>A(H3N2)</b>	0	15	0	15
<b>B/Yamagata-lineage</b>	0	0	1	1
<b>B/Victoria-lineage</b>	0	1	0	1

- 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, 19 influenza A(H1N1)pdm09 viruses have been tested for oseltamivir susceptibility and all but one were fully susceptible. The resistant case had an H275Y mutation. 16 out of the 19 influenza A(H1N1)pdm09 virus have also been tested for zanamivir susceptibility and all were susceptible.

- Antimicrobial susceptibility

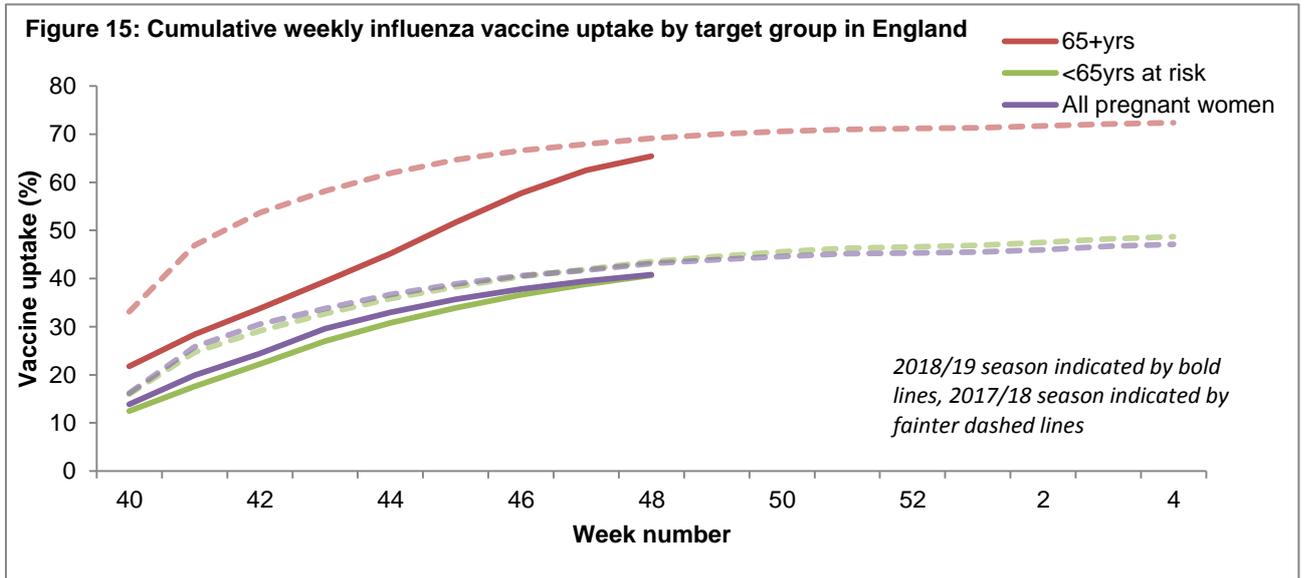
-Table 4 shows in the 12 weeks up to 02 December 2018, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired 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 02 December 2018, E&W**

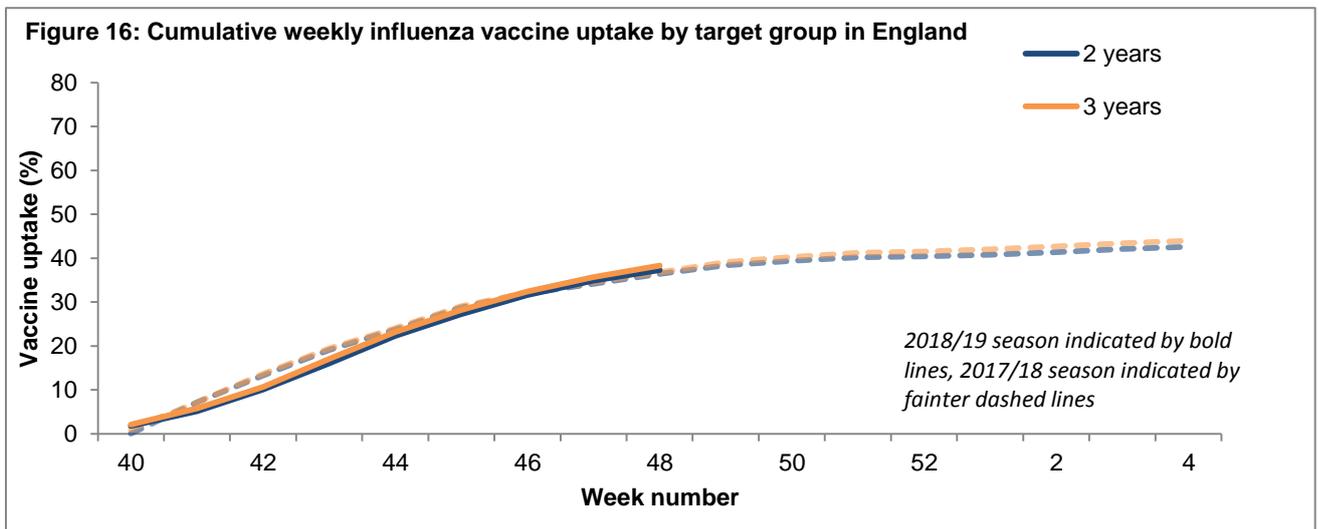
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	3665	89
	Macrolides	3960	82
	Tetracycline	3902	85
<i>H. influenzae</i>	Amoxicillin/ampicillin	12665	69
	Co-amoxiclav	13793	84
	Macrolides	3206	4
	Tetracycline	13845	98
<i>S. aureus</i>	Methicillin	6500	90
	Macrolides	7289	65
MRSA	Clindamycin	415	45
	Tetracycline	577	76
MSSA	Clindamycin	4054	77
	Tetracycline	5443	92

\*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 48 2018, in 95.8% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2018/19 influenza vaccine in targeted groups was as follows (Figure 15):
  - 40.7% in under 65 years in a clinical risk group
  - 40.8% in pregnant women
  - 65.4% in 65+ year olds



- In 2018/19, all 2 and 3 year-olds continue to be eligible for flu vaccination, through their GPs. Up to week 48 2018, in 96.7% of GP practices reporting weekly to ImmForm, the provisional proportion of children in England who had received the 2018/19 influenza vaccine in targeted groups was as follows (Figure 16):
  - 37.3% in 2 year olds
  - 38.3% in 3 year olds



- Provisional data from the first monthly collection of the influenza vaccine uptake by frontline healthcare workers show 46.3% were vaccinated by 31 October 2018 from 95.4% of all organisations, compared to 46.0% vaccinated in the previous season by 31 October 2017. The [report](#) provides uptake at national, NHS England local team and Trust-level.

- Provisional data from the first [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 October 2018 in targeted groups as follows:
  - 20.5% in children school year reception age (4-5 yrs)
  - 20.7% in children school year 1 age (5-6 yrs)
  - 19.9% in children school year 2 age (6-7 yrs)
  - 19.7% in children school year 3 age (7-8 yrs)
  - 18.9% in children school year 4 age (8-9 yrs)
  - 18.2% in children school year 5 age (9-10 yrs)

## International Situation

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**In the temperate zone of the Northern hemisphere, influenza activity started to increase although overall influenza activity remained low. Increased influenza was reported in some countries of South-East Asia and Central America. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections**

- [Europe](#) updated on 30 November 2018 (Joint ECDC-WHO Europe Influenza weekly update)

Influenza activity was low throughout the European Region. Of all the Member States and areas with thresholds defined, only Cyprus reported influenza-like illness (ILI) activity above the baseline level. All 47 Member States and areas reporting on intensity reported low levels for week 47.

Of the 47 Member States reporting on geographic spread, 21 reported no activity and 26 reported sporadic cases.

For week 47, 26 (2.8%) of the 923 sentinel specimens tested positive for influenza viruses, all of which were influenza A. Of the 23 type A viruses subtyped, 11 (47.8%) were influenza A(H1N1)pdm09 and 12 (52.2%) were influenza A(H3N2).

For week 47, 24 laboratory confirmed influenza cases were reported in ICUs, 95.8% were infected with influenza type A virus and 4.2% were infected with influenza type B. Among the 16 laboratory confirmed influenza cases in other wards reported 93.8% were infected with influenza type A virus infection and 6.2% were infected with influenza type B viruses.

For week 47, 296 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 influenza viruses. Of the 296, 274 (92.6%) were type A and 22 (7.4%) were type B viruses. Of the 79 influenza A viruses that were subtyped, 54 (68.4 %) were A(H1N1)pdm09 and 25 (31.6%) were A(H3N2). None of the influenza B viruses were assigned to a lineage

For week 47, data from the 22 countries or regions reporting to the EuroMOMO project indicated all-cause mortality to be at expected levels for this time of year.

- [United States of America](#) updated on 30 November 2018 (Centre for Disease Control report)

During week 47, influenza activity in the United States increased slightly. The increase in the percentage of patient visits for ILI may be influenced by a reduction of routine healthcare visits due to the Thanksgiving holidays

Influenza A and B viruses continue to co-circulate with influenza A(H1N1)pdm09 most commonly reported by public health laboratories.

Nationwide during week 47, the proportion of outpatient visits for influenza-like illness (ILI) increased to 2.3%, which is above the national baseline of 2.2%. Five of 10 regions reported the proportion of outpatient visits for ILI at or above their region-specific baseline levels. The proportion of outpatient visits for ILI ranged from 1.0% to 3.5%

For week 46, the proportion of deaths attributed to pneumonia and influenza (P&I) was 5.8%, below the system-specific epidemic threshold (6.4%) in the National Center for Health Statistics (NCHS) Mortality Surveillance System.

Two influenza-associated pediatric deaths were reported to the CDC during week 47. One death was associated with influenza A(H1N1)pdm09 virus, the other was associated with influenza A(H3) virus.

- [Canada](#) updated on 30 November 2018 (Public Health Agency report)

Overall, influenza activity continued to increase in week 47.

In week 47, a total of 950 laboratory confirmed detections of influenza were reported, of which 99% were influenza A. The percentage of tests positive for influenza from sentinel laboratories continued to increase to 15.3%, which is above the seasonal threshold of 5.0%. The percentage of positive tests for influenza A is higher for this time of year compared to previous 8 seasons.

In week 47, 1.9% of visits to healthcare professionals were due to ILI, the percentage of visits for ILI is within expected levels.

To date this season, 471 influenza-associated hospitalisations were reported by participating provinces and territories, of which 99% were associated with influenza A. To date this season, 49 ICU admissions and 9 deaths have been reported.

- [Global influenza update](#) updated on 26 November 2018 (WHO website)

In the temperate zone of the Northern hemisphere, influenza activity started to increase although overall influenza activity remained low. Increased influenza was reported in some countries of South-East Asia and Central America. In the temperate zones of the Southern hemisphere, influenza activity returned to inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

In North America, influenza activity increased slightly. In Canada, the influenza season was reported to have started earlier than previous years.

In Europe and Central Asia, influenza activity started to increase in some countries, but remained low in general with influenza A(H1N1)pdm09 and A(H3N2) viruses co-circulating.

In North Africa, Egypt continued to report low detections of influenza A(H3N2) viruses.

In Western Asia, respiratory illness indicators continued to increase in some of the countries, with influenza activity mainly reported from the Arabian Peninsula.

In East Asia, respiratory illness indicators and influenza activity remained low in general, although ILI levels reached the seasonal threshold in Republic of Korea.

In the Caribbean, influenza and respiratory syncytial virus (RSV) detections remained low in general except for Haiti where detections of influenza A(H1N1)pdm09 virus were reported. In Central American countries, elevated influenza activity was reported in Costa Rica, El Salvador and Nicaragua with influenza A(H1N1)pdm09 and B viruses co-circulating and in Panama with influenza A(H3N2) predominantly detected.

In the tropical countries of South America, influenza and RSV activity were low in general.

In Western Africa, influenza activity from reporting countries was due to a mixture of influenza B (Yamagata lineage) and influenza A (both subtypes). In Middle Africa, detections of influenza A(H3N2) virus continued to increase in Cameroon followed by a smaller number of detections of influenza B viruses (both lineages). In Eastern Africa, influenza detections of predominantly influenza A(H3N2) and A(H1N1)pdm09 viruses were reported in Kenya and Mauritius, respectively.

In Southern Asia, influenza activity of predominantly influenza A(H1N1)pdm09 virus appeared to decrease in India. Influenza activity started to increase in Iran with influenza A(H3N2) viruses most frequently detected.

In South-East Asia, influenza activity continued to be reported in some countries. In Lao PDR, influenza percent positivity remained elevated with influenza A(H1N1)pdm09 virus most frequently detected. Although slightly decreasing, influenza activity continues to be reported in Cambodia and Thailand with detections of predominantly influenza A(H1N1)pdm09.

The WHO GISRS laboratories tested more than 116,728 specimens between 29 October 2018 and 11 November 2018. 5,534 were positive for influenza viruses, of which 4,894 (88.4%) were typed as influenza A and 640 (11.6%) as influenza B. Of the sub-typed influenza A viruses, 2,695 (85%) were influenza A

(H1N1)pdm09 and 475 (15%) were influenza A (H3N2). Of the characterized B viruses, 53 (43.1%) belonged to the B-Yamagata lineage and 70 (56.9%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 01 November 2018 (WHO website)

### Influenza A(H5) viruses

Between [22 September 2018 and 01 November 2018](#), 2 new laboratory-confirmed human case of influenza A(H5N6) virus infection were reported to WHO from China.

Since 2014 a total of 22 laboratory confirmed cases of human infection with influenza A(H5N6) virus have been reported to WHO from China.

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)

According to reports from mainland the Hong Kong Special Administrative Region China and those received by the World Organisation for Animal Health (OIE), A(H7N9) avian influenza viruses continue to be detected in China but at lower levels compared to previous years. A nationwide domestic poultry vaccination campaign began in 2017.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 05 December 2018

Up to 05 December 2018, 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 1,365 suspected cases in the UK that have been investigated for MERS-CoV and tested negative.

Between [16 October 2018 and 30 October 2018](#), the National IHR Focal Point of The Kingdom of Saudi Arabia reported 4 additional cases of Middle East Respiratory Syndrome (MERS), including 1 death.

Globally, since September 2012 through to the end of October 2018, WHO has been notified of 2,266 laboratory-confirmed cases of infection with MERS-CoV, including 804 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

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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](#)

### 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](#))