



# PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

19 December 2019 – Week 51 report (up to week 50 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 50 (ending 15 December 2019)

- During week 50, influenza activity has continued to increase for several indicators.
- The impact of flu on healthcare services is **moderate** intensity levels for hospitalisations and ICU/HDU influenza admissions. The Department of Health & Social Care has issued an **alert** on the prescription of antiviral medicines by GPs.
- There are signs that Respiratory Syncytial Virus (RSV) is starting to plateau but continues to circulate in the <5 year olds in England.

### Community

- 155 new acute respiratory outbreaks have been reported in the past 7 days. 86 outbreaks were reported from care homes where 46 tested positive for influenza A. 7 outbreaks were reported from hospitals where 6 tested positive for influenza A. 56 outbreaks were reported from schools where 30 tested positive for influenza A(not subtyped). The remaining 6 outbreaks were from the Other settings category, where two tested positive for influenza A(not subtyped).

### Primary Care

- The rate of influenza-like illness (ILI) continues to be **Above baseline** threshold levels. The overall weekly ILI GP consultation rate was 16.0 per 100,000 registered population in participating GP practices for England, an increase from 13.1 per 100,000 in the previous week.
- In the devolved administrations, ILI rates were below baseline threshold levels for Scotland, however were at moderate levels in Northern Ireland and Wales.

GP ILI  
Consultations  
England



### Secondary Care

- Hospitalisation rate observed for laboratory confirmed influenza continues to be **at moderate intensity levels**, with a rate of 6.85 per 100,000 trust catchment population for England (19 NHS Trusts) compared to 5.13 per 100,000 in the previous week.
- ICU/HDU admission rate observed for laboratory confirmed influenza was **at moderate intensity levels**, with a rate of 0.35 per 100,000 trust catchment population for England (131/143 NHS Trusts) compared to 0.23 per 100,000 the previous week.
- There were two laboratory confirmed influenza admissions reported from the 6 Severe Respiratory Failure centres in the UK.

Hospitalisation



ICU/HDU



### All-cause mortality

- In week 50 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 and Northern Ireland for week 50 and for Scotland in week 48 2019.

### Microbiological surveillance

- **Primary care:** 94 samples tested positive for influenza (2 influenza A(H1N1)pdm09, 66 influenza A(H3), 21 influenza A(not subtyped), 3 influenza B and two co-infections of influenza A(not subtyped) and influenza B), through the UK GP sentinel swabbing schemes in week 50 2019, with an overall influenza positivity of 58.5%
- **Secondary care:** There were 729 influenza detections recorded through the DataMart scheme (13 influenza A(H1N1)pdm09, 516 influenza A(H3), 191 influenza A(not subtyped) and 9 influenza B). The overall influenza percent positivity was 20.2% and **Above baseline** threshold level.
- **Virus Characterisation:** 255 influenza A(H3N2) viruses have been genetically and/or antigenically characterised since week 40. 183 of 226 genetically characterised belong to the same subclade as the H3N2 component in this season's vaccine. Nine A(H1N1)pdm09 viruses have been antigenically characterised and are similar to the A(H1N1)pdm09 strain in this season's vaccine.

Secondary  
Care



### Vaccination

- **Weekly uptake:** Up to week 50 2019, in 79.4% of GP practices reporting for the main collection, the provisional proportion of people in England who had received the 2019/20 influenza vaccine in targeted groups was: 38.5% in under 65 years in a clinical risk group, 39.5% in pregnant women and 69.3% in 65+ year olds. In 78.4% of GP practices reporting for the childhood collection, the provisional proportion vaccinated was: 32.5% in 2 year olds and 31.7% in 3 year olds.
- Provisional data from the second monthly collection of influenza vaccine uptake by frontline healthcare workers show 61.5% were vaccinated by 30 November 2019, compared to 61.0% vaccinated in the previous season by 30 November 2018.
- Provisional data from the second monthly collection of influenza vaccine uptake for children of school years reception to year 6 shows 46.4% in school year reception age, 45.8% in school year 1 age, 45.0% in school year 2 age, 43.7% in school year 3 age, 43.2% in school year 4 age, 41.3% in school year 5 and 39.7% in school year 6 age were vaccinated by 30 November 2019.

### International situation

- In the temperate zone of the northern hemisphere, influenza activity and respiratory illness indicators started to increase in most countries with influenza activity elevated across the countries in Western Asia. In the temperate zones of the southern hemisphere, influenza activity returned to interseasonal levels. Worldwide, seasonal influenza A(H3N2) 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

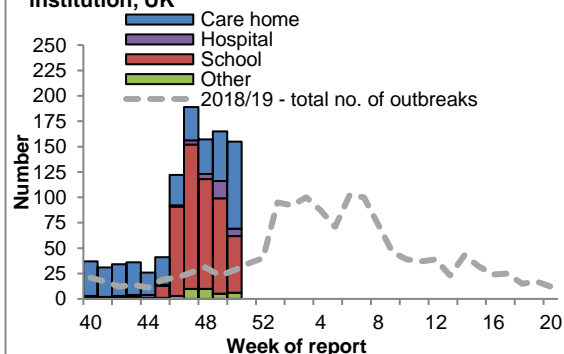
155 new acute respiratory outbreaks were reported in the past 7 days, with 84 confirmed with influenza. ILI rates observed through internet based surveillance increased and breached the baseline threshold for the FluDetector system.

- Acute respiratory disease outbreaks

- 155 new acute respiratory outbreaks have been reported in the past 7 days. 86 outbreaks were reported from care homes where 41 tested positive for influenza A(not subtyped), 4 for influenza A(H1N1)pdm09, one for influenza A(H3), one for rhinovirus, 4 for RSV, one for parainfluenza and one for coronavirus. 7 outbreaks were reported from hospitals where 6 tested positive for influenza A(not subtyped). 56 outbreaks were reported from schools where 30 tested positive for influenza A(not subtyped). The remaining 6 outbreaks were from the Other settings category where two tested positive for influenza A(not subtyped).

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

Figure 1: Number of acute respiratory outbreaks by institution, 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 2019/20 season, 17 MOSA schools have agreed to participate in the scheme, including a total of 4,000 boarders.

- The overall rate (all boarders) for week 49 was 2.5 per 1,000 boarders compared to 3.2 per 1,000 boarders in the previous week. Since week 40, three outbreaks have been reported with a total of 15 ILI cases.

- 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 FluSurvey. A project run by PHE to monitor ILI activity in the community.

- The overall ILI rate (all age groups) for week 50 was 40.0 per 1,000 (73/1,825 people reported at least 1 ILI), with the highest rate seen in the 20-44 year olds (174.6 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.

- FluDetector

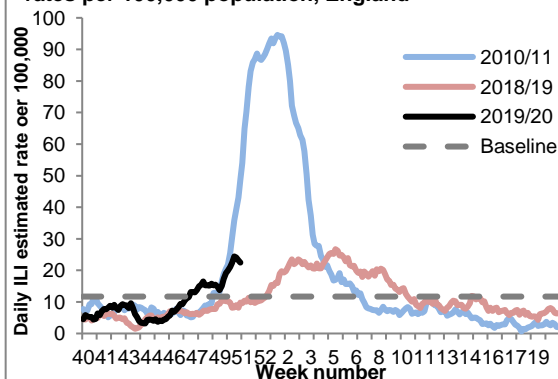
- Internet-based surveillance of influenza-like illness in the general population is also undertaken through FluDetector (<https://fludetector.cs.ucl.ac.uk>), a model assessing internet-based search queries for ILI.

- Daily ILI rate estimates are based on uniformly averaged search query frequencies for a week-long period (including the current day and the six days before it).

- The daily ILI rate estimates for week 50 increased but were above the baseline threshold of 11.7 per 100,000, with an overall weekly rate of 22.4 per 100,000 compared to 19.2 per 100,000 in week 49 (Figure 2).

-For more information on i-sense and the work carried out on early warning sensing systems for infectious disease visit <https://www.i-sense.org.uk/>

Figure 2: Daily estimated ILI Google search query rates per 100,000 population, England



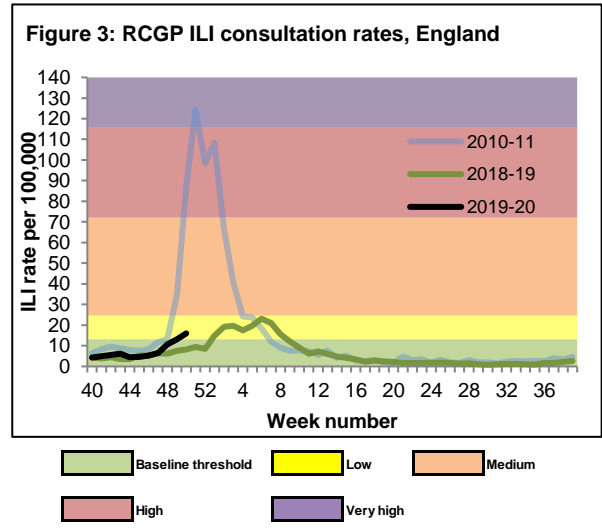
In week 50, the overall weekly influenza-like illness (ILI) GP consultation rate breached the baseline threshold in England. In the devolved administrations, ILI rates were below their respective baselines for Scotland and Wales but at moderate levels in Northern Ireland.

- GP ILI consultations in the UK

**RCGP (England)**

- The weekly ILI consultation rate through the RCGP surveillance was 16.0 per 100,000 registered population in participating GP practices in week 50 compared to 13.1 per 100,000 in week 49. This is above the baseline threshold (12.7 per 100,000) (Figure 3\*). By age group, the highest rates were seen in the 1-4 year olds (26.5 per 100,000) and in the 5-14 year olds (20.8 per 100,000).

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



**UK**

- In week 50, overall weekly ILI consultation rates were below their respective baseline threshold levels in Scotland, however at moderate levels in Northern Ireland and Wales (Table 1).

- By age group, the highest rates were seen in the 15-44 year olds in Scotland (23.1 per 100,000) and in the 15-44 year olds in Northern Ireland (28.6 per 100,000 respectively). Rates by age group were not available for Wales.

**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)	4.3	5.0	5.5	6.2	4.5	4.6	5.3	6.5	10.6	13.1	16.0						
Wales	1.7	4.0	4.2	6.2	1.7	4.2	3.7	10.1	10.6	7.4	22.0						
Scotland	5.1	6.2	4.4	4.0	7.9	5.0	7.0	11.8	12.3	14.0	19.0						
Northern Ireland	3.9	4.8	4.6	5.1	6.5	7.2	6.9	14.2	28.2	29.2	24.8						

\*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 14.0 per 100,000 in week 50 2019 (Figure 4).

GP In Hours consultations for ILI remain above baseline at low intensity levels for week 50, with the highest levels observed in the North East and North West and greatest increases noted in age groups up to 65 year olds.

NHS 111 cold/flu calls remain at medium intensity levels with highest activity noted in the 5-14 years age group and in the North of England. Calls for cough and difficulty breathing decreased but are still elevated in young children in line with seasonal RSV.

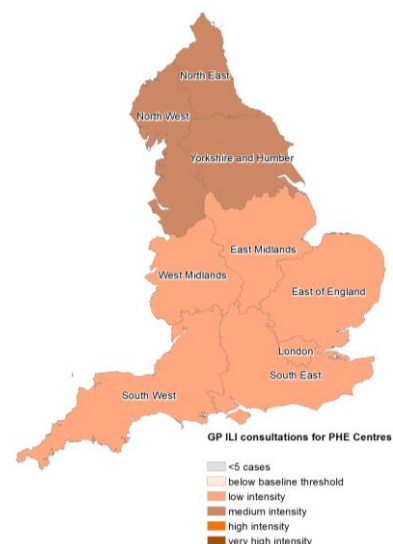
GP Out of Hours contacts for ILI remained at medium intensity levels during week 50 and bronchitis/bronchiolitis contacts in children aged under 1 year decreased. ED attendances for ILI attendances increased and are highest in children aged 1-4 and 5-14 years.

- Figure 4 represents a map of GP ILI consultation rates in week 49 across England by PHE centres, with influenza-like illness surveillance MEM thresholds applied.

ILI thresholds were calculated separately for each of the nine PHE Centres to allow for differences between areas e.g. background ILI rates are historically higher in London than other areas of England and based upon previous influenza seasons from 2012/13 on wards. ILI thresholds should be interpreted with caution and reference made to other GP surveillance systems incorporating more historical data.

-For further information, please see the syndromic surveillance webpage.

**Figure 4: Map of GP ILI consultation rates in week 50**

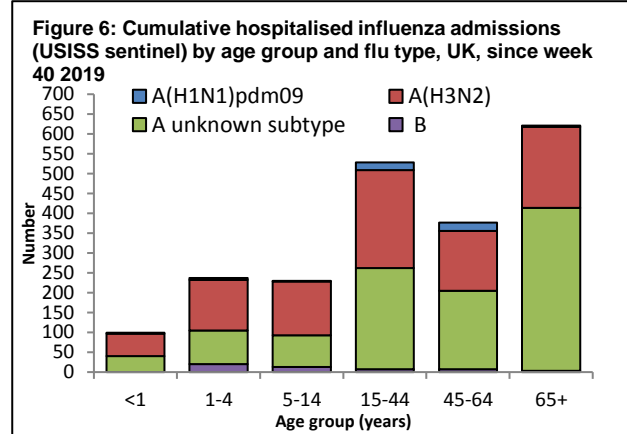
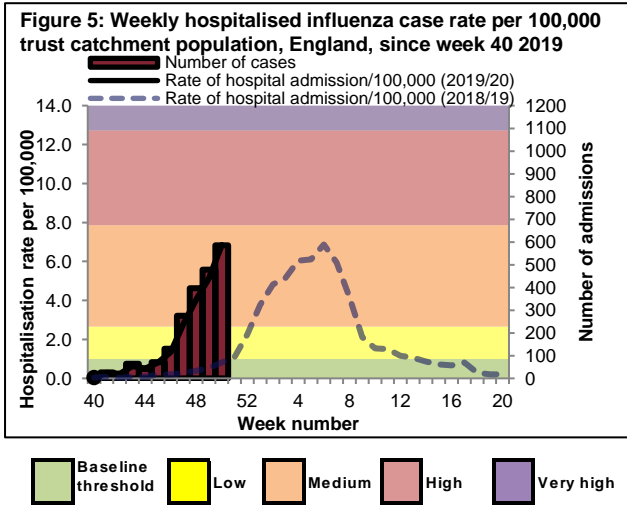


In week 50 2019, there were 586 hospitalised confirmed influenza cases (25 influenza A(H1N1)pdm09, 203 influenza A(H3N2), 348 influenza A(not subtyped) and 10 influenza B) reported through the USISS sentinel hospital network across England (19 Trusts). There were 174 new admissions to ICU/HDU with confirmed influenza (12 influenza A(H1N1)pdm09, 40 influenza A(H3N2), 119 influenza A(not subtyped) and 3 influenza B) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (131/143 Trusts in England).

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 50)

In week 50, there were 586 hospitalised laboratory confirmed influenza cases (25 influenza A(H1N1)pdm09), 203 influenza A(H3N2), 348 influenza A(not subtyped) and 10 influenza B) reported from 19 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 6.85 per 100,000 trust catchment population (Figures 5 and 6) compared to 5.13 per 100,000 in week 49. This is at medium intensity levels.

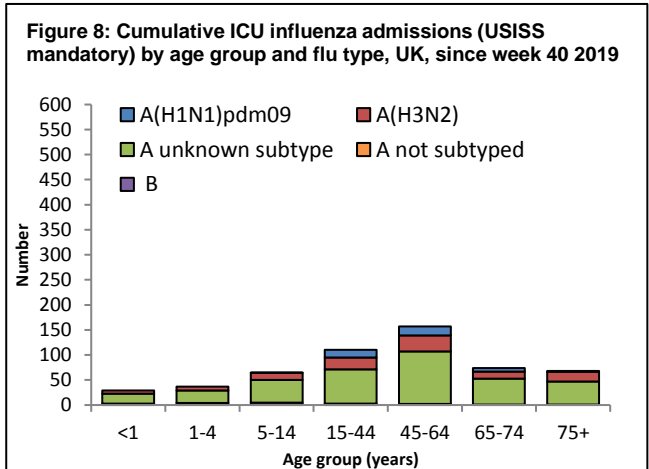
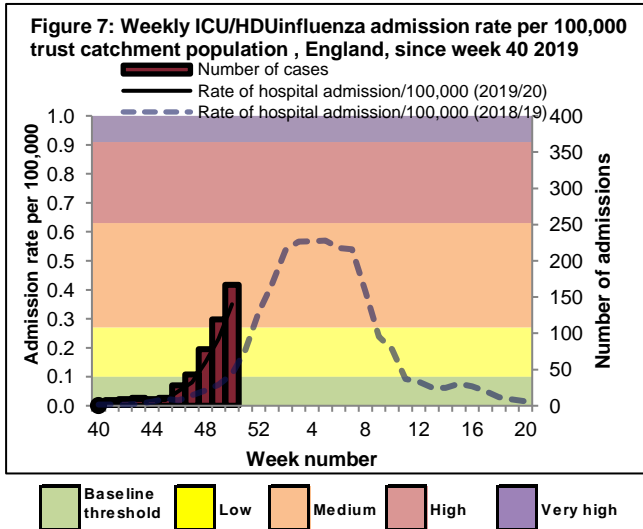
A total of 2092 hospitalised confirmed influenza admissions (52 influenza A(H1N1)pdm09, 921 influenza A(H3N2), 1,069 influenza A(not subtyped), and 50 influenza B) have been reported in England since week 40 2019 via the sentinel scheme.



- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 50)

In week 50, there were 174 new admissions to ICU/HDU with confirmed influenza (12 influenza A(H1N1)pdm09), 40 influenza A(H3N2), 119 influenza A(not subtyped) and 3 influenza B) reported across the UK (131/143 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.35 per 100,000 (Figures 7 and 8) compared to 0.23 per 100,000 in week 49. This is above the baseline impact threshold of 0.10 per 100,000. Eight influenza laboratory confirmed deaths were reported to have occurred in ICU/HDU week 49 in the UK.

A total of 540 new admissions (43 influenza A(H1N1)pdm09), 117 influenza A(H3N2), 361 influenza A(not subtyped) and 19 influenza B) and 23 confirmed deaths have been reported in the UK since week 40 2019.



\*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 50)

- In week 50, there were two new admissions with laboratory confirmed influenza (1 influenza A(H1N1)pdm09 and 1 influenza A(H3N2)) among the 6 Severe Respiratory Failure (SRF) centres in the UK. Since week 40 2019, a total of 5 confirmed influenza admissions (1 influenza A(H1N1)pdm09, 2 influenza A(H3N2) and 2 influenza A(unknown subtype)) have been reported among the 6 centres in the UK.

### All-cause mortality data

[| Back to top |](#)

**In week 50 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 and Northern Ireland in week 50 2019 and for Scotland in week 48.**

- All-cause death registrations, England and Wales

- In week 49 2019, an estimated 10,816 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a slight decrease compared to the 10,958 estimated death registrations in week 48 2019.

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

- In week 50 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 and Northern Ireland in week 50 2019 and for Scotland in week 48 (Table 2).

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

Country	Excess detected in week 50 2019?	Weeks with excess in 2019/20
England	x	NA
Wales	x	42
Northern Ireland	x	48

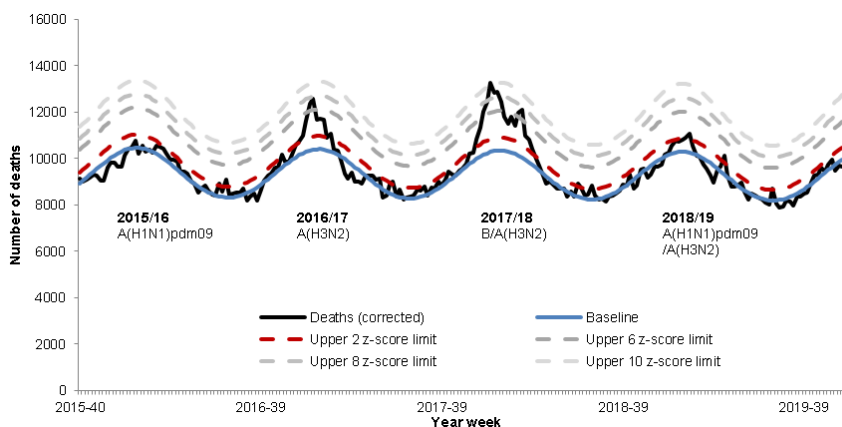
  

Country	Excess detected in week 48 2019?	Weeks with excess in 2019/20
Scotland	x	41,46

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

\* NA refers to no excess seen

**Figure 9: Weekly observed and expected number of all-age all-cause deaths, with the dominant circulating influenza A subtype, England, 2015 to week 50 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.

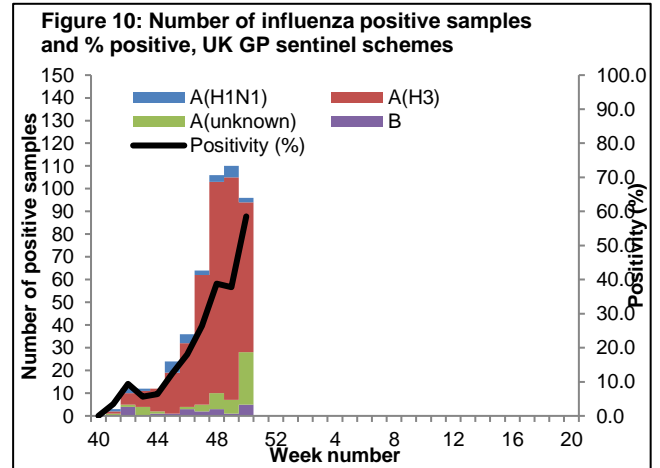


In week 50 2019, 94 samples tested positive for influenza with an overall positivity of 58.5%, through the UK GP sentinel schemes. 546 positive detections were recorded through the DataMart scheme (12 influenza A(H1N1)pdm09, 410 influenza A(H3), 113 influenza A(not subtyped) and 11 influenza B) with a positivity of 17.9%, which remains above the baseline threshold of 9.7%.

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

In week 50 2019, 94 samples tested positive for influenza (2 influenza A(H1N1)pdm09, 66 influenza A(H3), 21 influenza A(not subtyped), 3 influenza B and two co-infections of influenza A(not subtyped) and influenza B), with an overall positivity of 58.5% compared to 37.8% in the previous week, through the UK GP sentinel swabbing schemes (Figure 10).

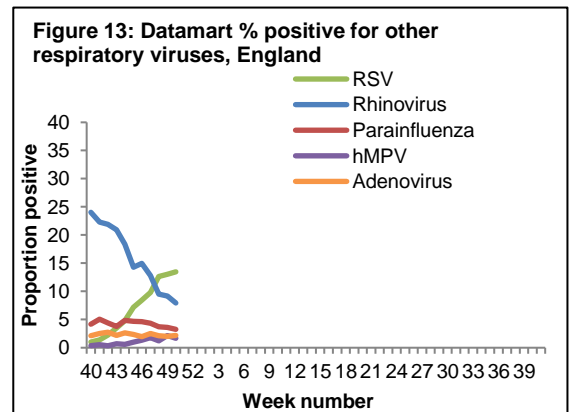
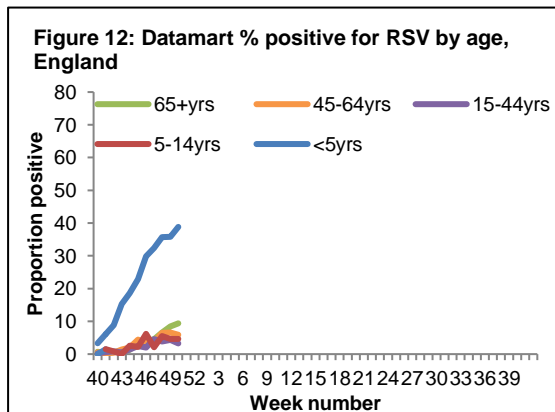
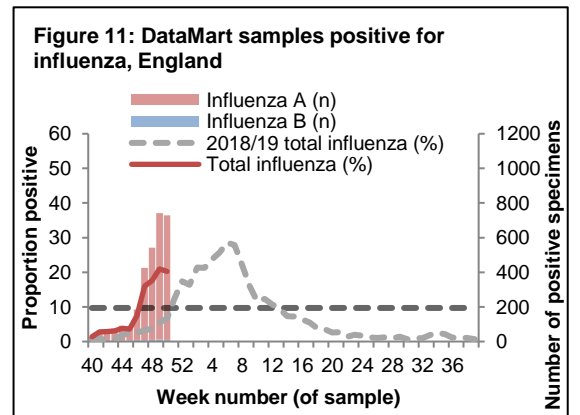
Since week 40, a total of 455 samples (19 influenza A(H1N1)pdm09, 379 influenza A(H3N2), 45 influenza A(not subtyped), 12 influenza B, one co-infection of influenza A(H3N2) and B, three co-infections of influenza A(H1N1)pdm09 and B, two co-infections of influenza A(H1N1)pdm09, influenza A(H3) and influenza B and two co-infections of influenza A(not subtyped) and B) tested positive for influenza through this scheme.



- Respiratory DataMart System (England)

In week 50 2019, out of the 3,605 respiratory specimens reported through the Respiratory DataMart System, 729 samples were positive for influenza (13 influenza A(H1N1)pdm09, 516 influenza A(H3), 191 influenza A(not subtyped) and 9 influenza B) (Figure 11), with an overall positivity of 20.2%, which is above the MEM baseline threshold for this season of 9.7%.

RSV positivity continued to increase from 13.0% in week 49 to 13.5% in week 50. The highest positivity for RSV by age group was seen in the <5 year olds at 38.8% in week 50 compared to 35.8% in the previous week. Rhinovirus positivity continued to increase at 7.9% in week 50. Remained similar to the previous week at 9.4%. Human metapneumovirus (hMPV) positivity decreased slightly at 1.7% in week 50. Adenovirus and parainfluenza positivity remained low at 2.2% and 3.7% respectively in week 50 2019 (Figure 13).



\*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 9.7% in 2019/20.

- 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 255 influenza A(H3N2) viruses detected since week 40. Genetic characterisation of 226 of these shows that 183 belong to the genetic clade 3C.3a, and 43 fall into a cluster within the 3C.2a1 subclade, designated 3C.2a1b. The Northern Hemisphere 2019/20 influenza A(H3N2) vaccine strain belongs in genetic subclade 3C.3a. One hundred and eight A(H3N2) viruses have been antigenically characterised and are similar to the A/Kansas/14/2017-like Northern Hemisphere 2019/20 (H3N2) vaccine strain. Difficulties remain with detection and typing of A(H3N2) viruses by HI assays due to observed receptor binding changes, particularly with viruses from the 3C.2a1 subclade and these are under-represented in the antigenic characterisation data.

A total of 14 A(H1N1)pdm09 viruses have been characterised to date. Eleven A(H1N1)pdm09 viruses have been genetically characterised, all fall in clade 6B.1A which was the predominant genetic clade in the 2018/19 season. Nine A(H1N1)pdm09 viruses have been antigenically characterised and are similar to the A/Brisbane/02/2018-like N. Hemisphere 2019/20 A(H1N1)pdm09 vaccine strain.

Three influenza B viruses have been characterised to date, where sequencing of the haemagglutinin (HA) gene shows this virus belongs in genetic clade 1A of the B/Victoria lineage, clustering in a subgroup within this clade characterised by deletion of three amino acids in the HA. The N. Hemisphere 2019/20 B/Victoria-lineage quadrivalent and trivalent vaccine component virus (a B/Colorado/06/2017-like virus) belongs in genetic clade 1A, clustering in a subgroup with two deletions in the HA.

At this early stage of the influenza season, it is too early to predict which lineages will dominate throughout the season, and a close watch will be kept on the proportion of different viruses circulating to assist with the evaluation of vaccine effectiveness.

Table 3: Viruses characterised by PHE Reference Laboratory, 2019/20

Virus type/subtype	No. viruses characterised			
	Genetic and antigenic	Genetic only	Antigenic only	Total
<b>A(H1N1)pdm09</b>	6	5	3	14
A(H3N2) 3C.2a1	0	43	0	43
A(H3N2) 3C.3a	79	104	29	212
<b>A(H3N2) total</b>	79	147	29	255
<b>B/Yamagata-lineage</b>	0	0	0	0
<b>B/Victoria-lineage</b>	0	3	0	3

- 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.

Since week 40 2019, 12 influenza A (H1N1) viruses and 103 influenza A (H3N2) viruses were tested for their susceptibility for both antiviral agents, oseltamivir and zanamivir, and all but two influenza A(H3N2) viruses are sensitive.

- Antimicrobial susceptibility

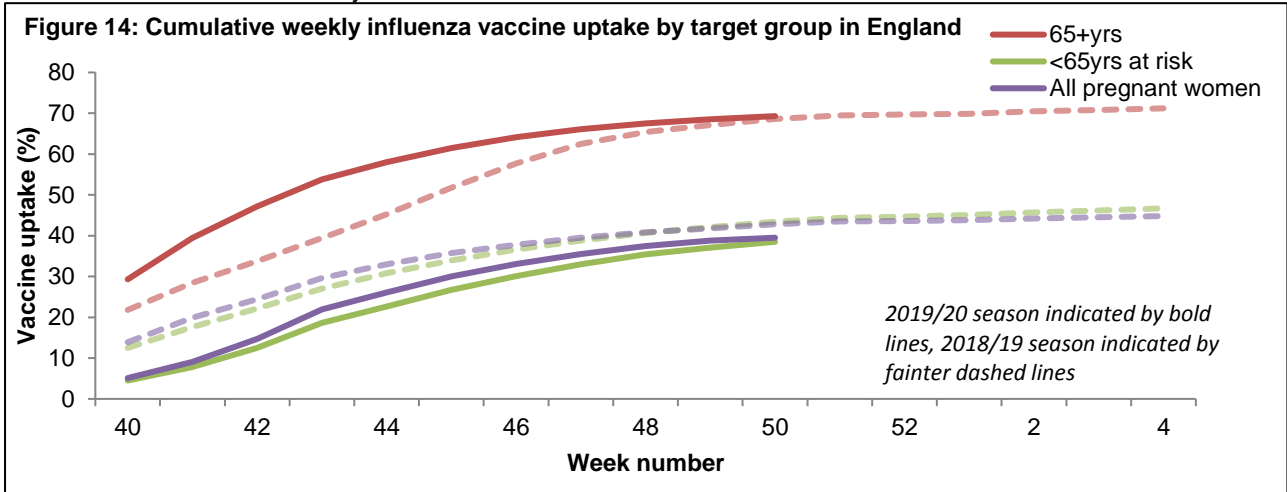
-Table 4 shows in the 12 weeks up to 15 December 2019, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community-acquired 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 15 December 2019, E&W

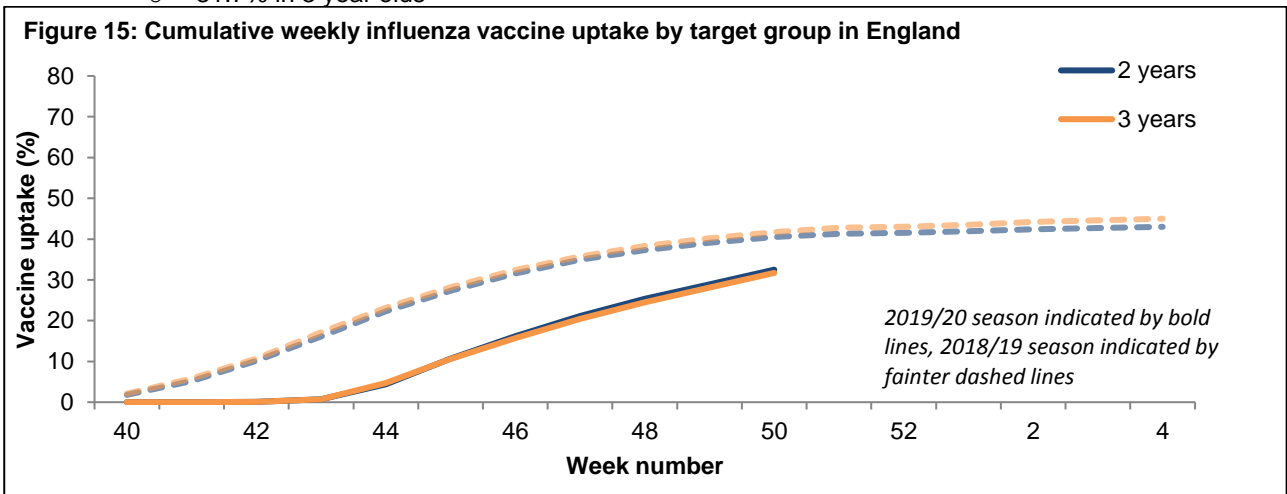
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	3927	87
	Macrolides	4294	82
	Tetracycline	4244	82
<i>H. influenzae</i>	Amoxicillin/ampicillin	14417	68
	Co-amoxiclav	15922	82
	Macrolides	2778	7
	Tetracycline	16026	98
<i>S. aureus</i>	Methicillin	7088	92
	Macrolides	7939	66
MRSA	Clindamycin	417	42
	Tetracycline	524	80
MSSA	Clindamycin	4723	72
	Tetracycline	6177	92

\*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 50 2019 in 79.4% of GP practices reporting weekly to Immform for the main collection, the provisional proportion of people in England who had received the 2019/20 influenza vaccine in targeted groups was as follows (Figure 14):
  - 38.5% in under 65 years in a clinical risk group
  - 39.5% in pregnant women
  - 69.3% in 65+ year olds



- In 2019/20, all 2 and 3 year olds continue to be eligible for influenza vaccination through their GPs. Up to week 50 2019, in 78.4% of GP practices reporting weekly to Immform for the childhood collection, the provisional proportion of children in England who had received the 2019/20 influenza vaccine in targeted groups was as follows (Figure 15):
  - 32.5% in 2 year olds
  - 31.7% in 3 year olds



- Provisional data from the second monthly collection of the influenza vaccine uptake by frontline healthcare workers show 61.5% were vaccinated by 30 November 2019 from 97.5% of all organisations, compared to 61.0% vaccinated in the previous season by 30 November 2018. The report provides uptake at national, NHS England local team and Trust-level.



- Provisional data from the second monthly collection of influenza vaccine uptake for children of school years Reception, 1, 2, 3, 4, 5 and 6 age (from a sample of 98.7% of all Local Authorities in England) show the provisional proportion of children in England who received the 2019/20 influenza vaccine via school, pharmacy or GP practice by 30 November 2019 in targeted groups in Table 5.

Table 5: Provisional cumulative influenza vaccine uptake (%) in children in school years Reception to Year 6, up to 30 November 2019 & 2018, England

School Year	% Vaccine uptake (up to 31 October)	
	2019/20	2018/19
Reception (4-5 years)	46.4	49.6
Year 1 (5-6 years)	45.8	49.4
Year 2 (6-7 years)	45.0	47.7
Year 3 (7-8 years)	43.7	46.8
Year 4 (8-9 years)	43.2	45.2
Year 5 (9-10 years)	41.3	43.7
Year 6 (10-11 years)	39.7	-

- : Year 6 were not part of the programme in 2018/19

## International Situation

[Back to top](#)

**In the temperate zone of the northern hemisphere, influenza activity and respiratory illness indicators started to increase in most countries with influenza activity elevated across the countries in Western Asia. In the temperate zones of the southern hemisphere, influenza activity returned to interseasonal levels. Worldwide, seasonal influenza A(H3N2) viruses accounted for the majority of detections.**

- [Europe](#) updated on 13 December 2019 (Joint ECDC-WHO Europe Influenza weekly update)

Overall in week 49, influenza activity continued to increase across the region, with the majority of countries reporting influenza A virus detections dominance.

For week 49 2019, of 46 Member States and areas reporting on intensity, 34 reported baseline, 10 reported low intensity and 2 reported medium intensity. Of 46 Member States and areas reporting on geographic spread, 8 reported no activity, 27 reported sporadic cases, 6 reported local spread (across the Region), 1 reported regional spread and 4 reported widespread activity.

For week 49/2019, 140 (13.8%) of 1,196 sentinel specimens tested positive for influenza viruses; 78% were type A and 22% were type B. Of 189 subtyped A viruses, 38% were A(H1N1)pdm09 and 62% were A(H3N2). Of the 11 type B viruses ascribed to a lineage, all were B/Victoria.

For the season to date, more influenza type A (71.4%) than type B (28.6%) viruses have been detected. Of 700 subtyped A viruses, 32% were A(H1N1)pdm09 and 68% were A(H3N2). Of 84 influenza type B viruses ascribed to a lineage, 95% were B/Victoria and 5% were B/Yamagata.

Since week 40/2019, more influenza type A (n=360, 94%) than type B (n=23, 6%) viruses have been detected among laboratory confirmed influenza cases in ICU. Of 103 subtyped influenza A viruses, 29% were A(H1N1)pdm09 and 71% were A(H3N2). None of the influenza B viruses have been ascribed to a lineage. Of 37 cases with known age, 46% were 15–64 years old and 43% were 65 years and older.

Since week 40/2019, more influenza type A (n=325, 93%) than type B (n=23, 7%) viruses have been detected among laboratory confirmed influenza cases in wards other than ICU. Of 156 subtyped influenza A viruses, 13% were A(H1N1)pdm09 and 87% were A(H3N2). None of the influenza B viruses have been ascribed to a lineage. Of 348 cases with known age, 32% were 15–64 years old and 35% were 65 years and older.

For week 49 2019, pooled estimates from the EuroMOMO project of all-cause mortality from 23 countries or areas show all-cause mortality were within expected range for the time of year.

- [United States of America](#) updated on 13 December 2019 (Centre for Disease Control report)

During week 49, influenza activity continues to increase and has been elevated for the past five weeks.

Nationwide during week 49, 3.2% of patient visits reported through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI), which is above the national baseline of 2.4%.

During week 49, 11.3% of respiratory specimens tested by clinical laboratories were influenza positive. This is higher than the previous week.

The overall hospitalisation rate for the season is 3.9 per 100,000. This is similar to what has been seen at this time in recent seasons.

Based on National Center for Health Statistics (NCHS) mortality surveillance data available on 12 December 2019, 5.0% of the deaths occurring during the week ending November 30, 2019 (week 48) were due to P&I. This percentage is below the epidemic threshold of 6.5% for week 48.

- [Canada](#) updated on 13 December 2019 (Public Health Agency report)

At national level, influenza activity continues to increase across multiple indicators in week 49, with influenza A(H3N2) continuing to be the most common influenza virus circulating in Canada.

In weeks 49, a total of 724 laboratory detections of influenza were reported, of which 56.5% (409) were influenza A, with 60/93 subtyped influenza A detections being influenza A(H3N2).

The percentage of tests positive for influenza was above the seasonal threshold of 5.0%, at 9.1% in week 49.

In week 49, 1.3% of visits to healthcare professionals were due to ILI, slightly below the average for this time of year (1.5%).

To date this season, 200 influenza-associated hospitalisations have been reported with the majority of cases being aged greater than 65 years and associated with influenza A(H3N2).

- [Global influenza update](#) updated on 09 December 2019 (based on data up to 24 November 2019) (WHO website)

In the temperate zone of the northern hemisphere, influenza activity and respiratory illness indicators started to increase in most countries with influenza activity elevated across the countries in Western Asia. In the temperate zones of the southern hemisphere, influenza activity returned to interseasonal levels. Worldwide, seasonal influenza A(H3N2) viruses accounted for the majority of detections.

In the countries of North America, ILI and influenza activity crossed the seasonal baseline, with co-circulation of all seasonal influenza subtypes.

In Europe, influenza activity continued to increase, with influenza A viruses predominant in most countries, and B viruses in several countries of the eastern part of the region.

In Central Asia, some marginal increases in respiratory illness indicators were reported in most countries.

In Northern Africa, activity remained at inter-seasonal levels, except for Morocco where low detections of influenza B/Victoria lineage viruses were reported in recent weeks.

In Western Asia, influenza activity continued to increase overall. In Bahrain, Kuwait and Saudi Arabia, influenza activity continued to increase with detections of predominately influenza A(H1N1)pdm09 and a small proportion of B viruses. Kuwait and Oman continued to report influenza detections at lower levels compared to previous weeks. In Qatar, influenza A(H3N2) viruses were most frequently detected. Increased SARI levels continued to be reported in Saudi Arabia.

In East Asia, ILI and influenza activity increased slightly in most countries, but remained low overall. ILI activity was reported above the seasonal threshold in the Republic of Korea, with detections of predominately influenza A(H1N1)pdm09.

In the Caribbean countries and the tropical countries of South America, influenza activity was low in general.

In Western Africa, influenza activity was elevated in some reporting countries. Increased influenza virus detections with predominantly influenza A(H3N2) and B/Victoria lineage viruses continued to be reported in Ghana, and Guinea and decreased detections were reported in Mali.

In Middle Africa, Cameroon reported increased influenza activity with detections of all seasonal influenza subtypes. South Sudan reported low detections of influenza B/Victoria lineage viruses.

In Eastern Africa, influenza detections were low across most reporting countries. Increased SARI activity and influenza A and B detections were reported in Kenya. Increased ILI activity was reported in Zambia with no detections of influenza viruses.

In Southern Asia, influenza detections were low across reporting countries except for Iran (Islamic Republic of) where influenza activity continued to increase with detections of predominantly influenza A(H1N1)pdm09 viruses. In South East Asia, influenza activity was reported in some countries

The WHO GISRS laboratories tested more than 92,883 specimens between 11 November 2019 and 24 November 2019. 7,914 were positive for influenza viruses, of which 5,629 (71.1%) were typed as influenza A and 2,285 (28.9%) as influenza B. Of the sub-typed influenza A viruses, 1,069 (28.5%) were influenza A (H1N1)pdm09 and 2,682 (71.5%) were influenza A (H3N2). Of the characterized B viruses, 34 (3.2%) belonged to the B-Yamagata lineage and 1,014 (96.8%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 27 September 2019 (WHO website)

### **Influenza A(H5) viruses**

Between [25 June 2019 to 27 September 2019](#), one new laboratory-confirmed human case of influenza A(H5N6) virus infection was reported to WHO.

A total of 24 laboratory-confirmed cases of human infection with influenza A(H5N6) virus have been reported to WHO from China since 2014.

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 [25 June 2019 and 27 September 2019](#), no new laboratory-confirmed human case of influenza A(H7N9) virus infection were reported to WHO from China. Publicly available reports from animal health authorities in China of influenza A(H7N9) virus detections in animals in recent months indicate virus detections in two provinces from samples taken in the first half of the year. Overall, the risk assessment has not changed.

For more information on A(H5), A(H7N9), A(H9N2) and A(H1)v viruses, please see the September 2019 report: [Antigenic and genetic characteristics of zoonotic influenza viruses and candidate vaccine viruses developed for potential use in human vaccines](#).

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 18 December 2019

Up to 18 December 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 1,723 suspected cases in the UK since September 2012 that have been investigated for MERS-CoV and tested negative.

Between [1 and 31 October 2019](#), the National IHR Focal Point of Saudi Arabia reported 15 additional cases of Middle East respiratory syndrome (MERS-CoV) infection and six associated deaths.

On [7 October 2019](#), the National IHR Focal Point of the United Arab Emirates (UAE) notified WHO of one laboratory-confirmed case of Middle East respiratory syndrome coronavirus (MERS-CoV) infection.

Globally, since September 2012 and up to 31 October 2019, [WHO](#) has been notified of 2,484 laboratory-confirmed cases of infection with MERS-CoV, including 857 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 |](#)

This report was prepared by the Influenza Surveillance Section, Immunisations and Countermeasures Division, National Infection Service, Public Health England. We are grateful to all who provided data for this report including the RCGP Research and Surveillance Centre, the PHE Real-time Syndromic Surveillance team, the PHE Respiratory Virus Unit, the PHE Modelling and Statistics unit, the PHE Dept. of Healthcare Associated Infection & Antimicrobial Resistance, PHE regional microbiology laboratories, Office for National Statistics, the Department of Health, Health Protection Scotland, National Public Health Service (Wales), the Public Health Agency Northern

Ireland, the Northern Ireland Statistics and Research Agency, QSurveillance® and EMIS and EMIS practices contributing to the QSurveillance® database.

## 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](#))
- 2019/20 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))