



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

05 December 2019 – 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 01 December 2019)

- During week 48, influenza activity has continued to increase for several indicators.
- The impact of flu on healthcare services is at **moderate** intensity levels for hospitalisations and **above baseline** for ICU/HDU influenza admissions. The Department of Health & Social Care has issued an **alert** on the prescription of antiviral medicines by GPs.
- Respiratory Syncytial Virus (RSV) continues to circulate in the <5 year olds in England.

Community

- 157 new acute respiratory outbreaks have been reported in the past 7 days. 34 outbreaks were reported from care homes where 19 tested positive for influenza A(unknown subtype). Five outbreaks were reported from hospitals where one tested positive for influenza A(unknown subtype) and one tested positive for A(H1N1)pdm09. 108 outbreaks were reported from schools where 16 tested positive for influenza A(unknown subtype) and one was positive for influenza A(H3N2). The remaining 10 outbreaks were from the Other settings category where one tested positive for influenza A(H1N1)pdm09.

Primary Care

- The rate of influenza-like illness (ILI) was **Below baseline** threshold levels. The overall weekly ILI GP consultation rate was 10.6 per 100,000 registered population in participating GP practices for England, an increase from 6.5 per 100,000 in the previous week.
- In the devolved administrations, ILI rates were **Below baseline** threshold levels for Scotland and Wales, however at moderate impact levels in Northern Ireland.

GP ILI
Consultations
England



Secondary Care

- Hospitalisation rate observed for laboratory confirmed influenza was at **moderate intensity** levels, with a rate of 4.31 per 100,000 trust catchment population for England (18 NHS Trusts) compared to 2.85 per 100,000 in the previous week.
- ICU/HDU admission rate observed for laboratory confirmed influenza was **Above baseline** levels, with a rate of 0.15 per 100,000 trust catchment population for England (139/143 NHS Trusts) compared to 0.08 per 100,000 the previous week.
- There was one laboratory confirmed influenza admission (1 influenza A(unknown subtype)) reported from the 6 Severe Respiratory Failure centres in the UK.

Hospitalisation



ICU/HDU



All-cause mortality

- In week 48 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 48, however excess was noted for Scotland in week 46 2019. No data was available for Northern Ireland in week 48.

Microbiological surveillance

- **Primary care:** 58 samples tested positive for influenza (1 influenza A(H1N1)pdm09, 45 influenza A(H3) and 12 influenza A(unknown subtype)), through the UK GP sentinel swabbing schemes in week 48 2019, with an overall positivity of 50.9%
- **Secondary care:** There were 376 detections recorded through the DataMart scheme (15 influenza A(H1N1)pdm09, 277 influenza A(H3), 77 influenza A(not subtyped) and 7 influenza B). The overall influenza percent positivity was 17.5% and **Above baseline** threshold level.
- **Virus Characterisation:** 67 influenza A(H3N2) viruses have been genetically and/or antigenically characterised since week 40. 41 of 58 genetically characterised belong to the same subclade as the H3N2 component in this season's vaccine. Five 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 48 2019, in 90.1% 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: 35.4% in under 65 years in a clinical risk group, 37.5% in pregnant women and 67.5% in 65+ year olds. In 90.6% of GP practices reporting for the childhood collection, the provisional proportion vaccinated was: 25.4% in 2 year olds and 24.5% in 3 year olds.
- Provisional data from the first monthly collection of influenza vaccine uptake by frontline healthcare workers show 43.6% were vaccinated by 31 October 2019, compared to 46.3% vaccinated in the previous season by 31 October 2018.
- Provisional data from the first monthly collection of influenza vaccine uptake for children of school years reception to year 6 shows 17.9% in school year reception age, 17.6% in school year 1 age, 17.3% in school year 2 age, 16.6% in school year 3 age, 16.4% in school year 4 age, 15.8% in school year 5 and 15.2% in school year 6 age were vaccinated by 31 October 2019.

International situation

- In the temperate zone of the northern hemisphere, influenza activity remained at inter-seasonal levels in most countries; however continued to increase across the countries of the Western Asia. In the temperate zones of the southern hemisphere, influenza activity returned to interseasonal levels in most countries and decreased to low levels in Chile. Worldwide, seasonal influenza A accounted for the majority of detections, with equal proportions of influenza A(H1N1)pdm09 and A(H3N2) viruses.

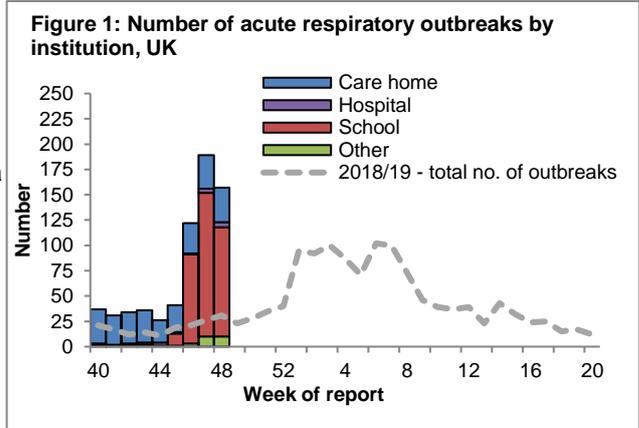
Key	
Arrows (vs previous week):	Colour (intensity according to MEM threshold):
↑ Increase	● Below Baseline
↓ Decrease	● Above Baseline/Low
↔ Stable/No trend	● Medium
	● High
	● Very High

157 new acute respiratory outbreaks were reported in the past 7 days, with 40 confirmed with influenza. ILI rates observed through internet based surveillance increased and breached the baseline threshold for the FluDetector system.

- Acute respiratory disease outbreaks

- 157 new acute respiratory outbreaks have been reported in the past 7 days. 34 outbreaks were reported from care homes where 19 tested positive for influenza A(unknown subtype) and one tested positive for rhinovirus. Five outbreaks were reported from hospitals where one tested positive for influenza A(unknown subtype) and one tested positive for A(H1N1)pdm09. 108 outbreaks were reported from schools where 16 tested positive for influenza A(unknown subtype), one was positive for influenza A(H3N2) and one for parainfluenza. The remaining 10 outbreaks were from the Other settings category where one tested positive for influenza A(H1N1)pdm09.

-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and respcidsc@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 2019/20 season, 17 MOSA schools have agreed to participate in the scheme, including a total of 4,000 boarders.

- The overall ILI rate (all boarders) for week 48 was 3.6 per 1,000 boarders compared to 0.3 per 1,000 boarders in the previous week. Since week 40, two outbreaks have been reported with a total of 11 ILI cases.

- 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 48 was 26.0 per 1,000 (31/1,193 people reported at least 1 ILI) compared to 25.1 per 1,000 in week 47, with the highest rate seen in the <20 year olds (33.9 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.

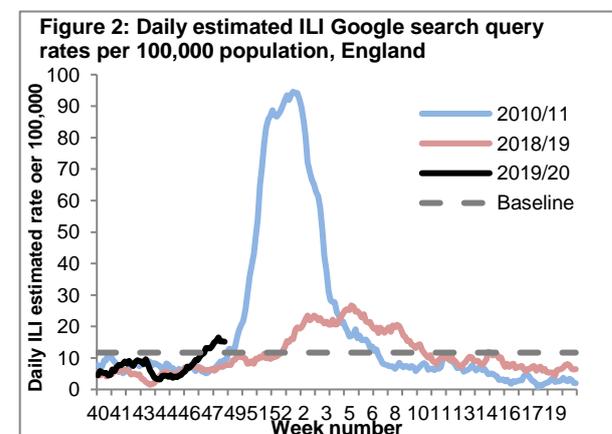
- FluDetector

- 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 48 continued to increase above the baseline threshold of 11.7 per 100,000, with an overall weekly rate of 15.8 per 100,000 compared to 13.7 per 100,000 in week 47 (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/>



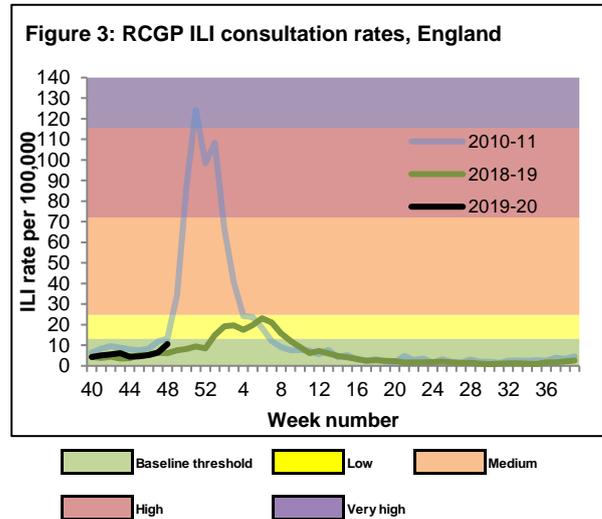
In week 48, the overall weekly influenza-like illness (ILI) GP consultation rate increased but remained below baseline threshold levels in England. In the devolved administrations, ILI rates were below their in Scotland and Wales however have reached moderate threshold levels for Northern Ireland.

- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance was 10.6 per 100,000 registered population in participating GP practices in week 48 compared to 6.5 per 100,000 in week 46. This is below the baseline threshold (12.7 per 100,000) (Figure 3*). By age group, the highest rates were seen in the 5-14 year olds (16.0 per 100,000) and in the 1-4 year olds (15.8 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 48, overall weekly ILI consultation rates in England, Scotland and Wales remained below their respective baseline thresholds however reached the moderate threshold in Northern Ireland (Table 1).

- By age group, the highest rates were seen in the 15-44 year olds in Scotland (15.1 per 100,000) and in the 5-14 year olds in Northern Ireland (62.4 per 100,000). Rates by age group were not available for Wales for week 48.

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								
Wales	1.7	4.0	4.2	6.2	1.7	4.2	3.7	10.1	10.6								
Scotland	5.1	6.2	4.4	4.0	7.9	5.0	7.0	11.8	12.2								
Northern Ireland	3.9	4.8	4.6	5.1	6.5	7.2	6.9	14.2	28.2								

**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 8.5 per 100,000 in week 48 2019 (Figure 4).

GP In Hours consultations for ILI have reached baseline levels at a national level, and in the North East, North West, Yorkshire and Humber and East Midlands for week 48. The greatest increase in ILI have been noted in the 1-4 and 5-14 years age group.

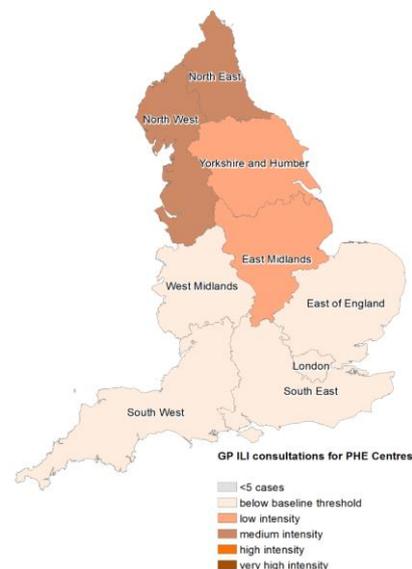
NHS 111 cold/flu calls continued to increase with activity particularly noted in 5-14 year olds and in the North of England. There were further increases in cough and difficulty breathing calls in children aged under 15 years, in line with seasonal RSV activity during week 48.

GP Out of Hours contacts for ILI continued to increase and remained above the baseline threshold. Emergency Department (ED) attendances for ILI continued to increase in 5-14 year olds. Further increases were also observed for bronchitis/bronchiolitis, particularly in young children (aged under 1 year), in line with increasing levels of RSV activity in week 48.

- Figure 4 represents a map of GP ILI consultation rates in week 47 across England by PHE centres, with ILI 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.

Figure 4: Map of GP ILI consultation rates in week 48

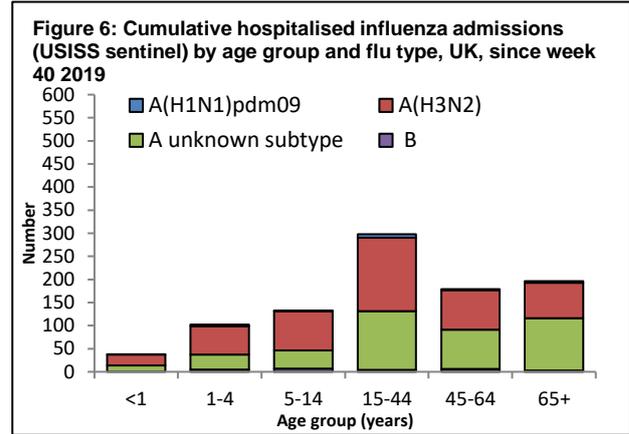
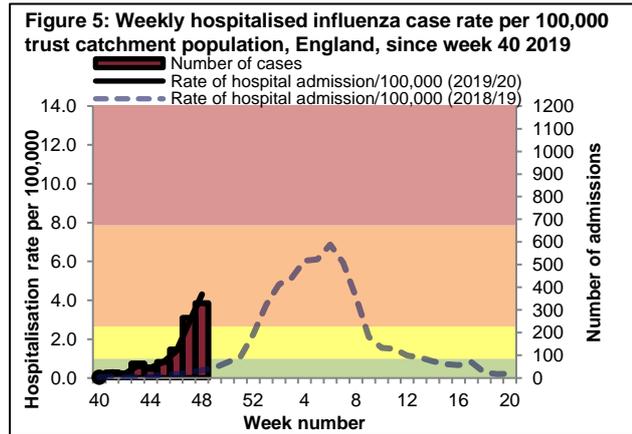


In week 48 2019, there were 330 hospitalised confirmed influenza cases (2 influenza A(H1N1)pdm09, 170 influenza A(H3N2), 150 influenza A(unknown subtype) and 8 influenza B) reported through the USISS sentinel hospital network across England (18 Trusts). There were 80 new admissions to ICU/HDU with confirmed influenza (6 influenza A(H1N1)pdm09, 14 influenza A(H3N2), 56 influenza A(unknown subtype) and 4 influenza B) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (139/143 Trusts in England).

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

In week 48, there were 330 hospitalised laboratory confirmed influenza cases (2 influenza A(H1N1)pdm09), 170 influenza A(H3N2), 150 influenza A(unknown subtype) and 8 influenza B) reported from 18 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 4.31 per 100,000 trust catchment population (Figures 5 and 6) compared to 2.85 per 100,000 in week 47. This is in the moderate impact threshold.

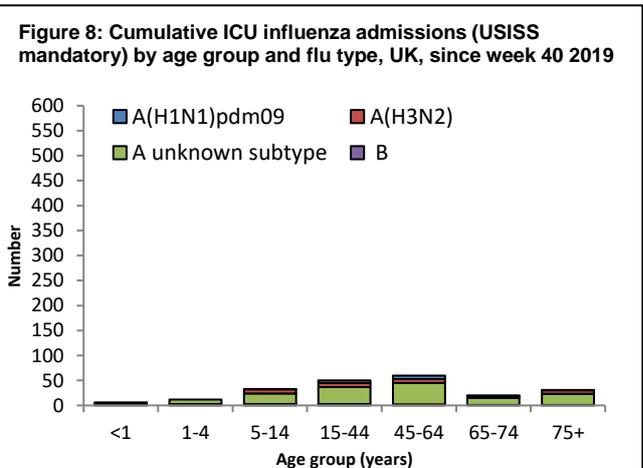
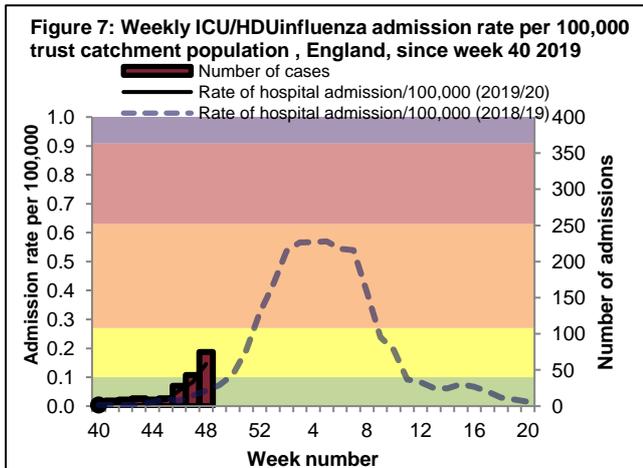
A total of 946 hospitalised confirmed influenza admissions (19 influenza A(H1N1)pdm09, 492 influenza A(H3N2), 410 influenza A(unknown subtype) and 25 influenza B) have been reported in England since week 40 2019 via the sentinel scheme.



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

In week 48, there were 80 new admissions to ICU/HDU with confirmed influenza (6 influenza A(H1N1)pdm09, 14 influenza A(H3N2), 56 influenza A(unknown subtype) and 4 influenza B) reported across the UK (139/143 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.15 per 100,000 (Figures 7 and 8) compared to 0.08 per 100,000 in week 47. This is in the low impact threshold. Three influenza laboratory confirmed deaths were reported to have occurred in ICU/HDU week 48 in the UK.

A total of 212 new admissions (16 influenza A(H1N1)pdm09), 35 influenza A(H3N2), 147 influenza A(unknown subtype) and 14 influenza B) and 6 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 48)

- In week 48, there was one new admission for laboratory confirmed influenza (influenza A(unknown subtype)) among the 6 Severe Respiratory Failure (SRF) centres in the UK.

Since week 40, a total of 3 confirmed influenza admissions (one influenza A(H3N2) and two influenza A(unknown subtype)) were reported among ECMO centres.

All-cause mortality data

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In week 48 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 48 2019 however excess was observed for Scotland in week 46.

- All-cause death registrations, England and Wales

- In week 47 2019, an estimated 10,882 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is an increase compared to the 10,650 estimated death registrations in week 46 2019.

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

- In week 48 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 48 2019, however excess was observed for Scotland in week 46 (Table 2). Data was unavailable for Northern Ireland in week 48.

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

Country	Excess detected in week 48 2019?	Weeks with excess in 2019/20
England	×	NA
Wales	×	NA
Northern Ireland	-	NA

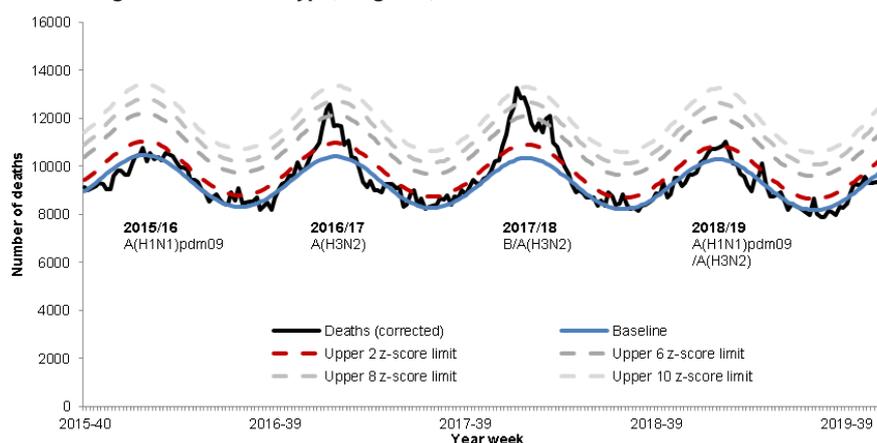
Country	Excess detected in week 46 2019?	Weeks with excess in 2019/20
Scotland	✓	41,46

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

* NA refers to no excess seen

- no data available

Figure 9: Weekly observed and expected number of all-age all-cause deaths, with the dominant circulating influenza A subtype, England, 2015 to week 48 2019



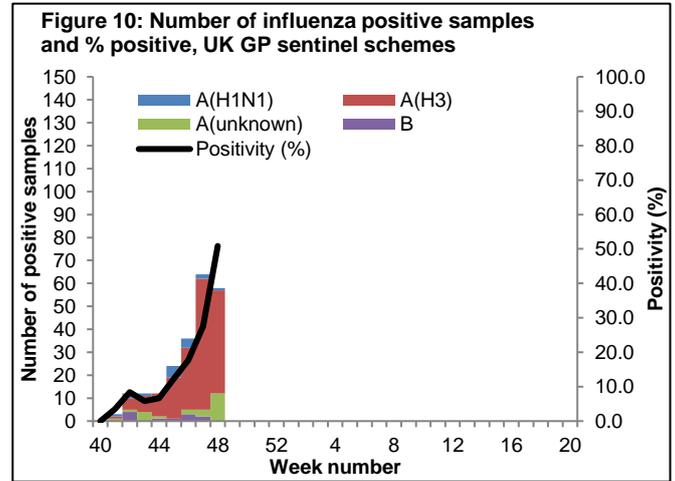
*Note: Delays in receiving all registered deaths from April 2018, following changes in IT systems at ONS, may result in some delays in the model to adjust for most recent deaths.

In week 48 2019, 58 samples tested positive for influenza with an overall positivity of 50.9%, through the UK GP sentinel schemes. 376 positive detections were recorded through the DataMart scheme (15 influenza A(H1N1)pdm09, 277 influenza A(H3), 77 influenza A(not subtyped) and 7 influenza B) with a positivity of 17.5%, this is above the baseline threshold of 9.7%.

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

In week 48 2019, 58 samples tested positive for influenza (1 influenza A(H1N1)pdm09, 45 influenza A(H3) and 12 influenza A(unknown subtype)), with an overall positivity of 50.9% compared to 27.5% in the previous week, through the UK GP sentinel swabbing schemes (Figure 10).

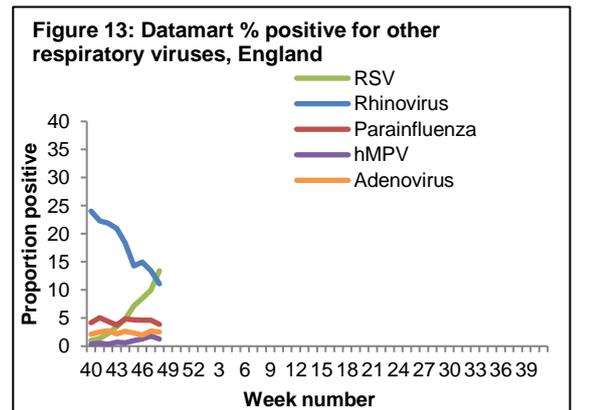
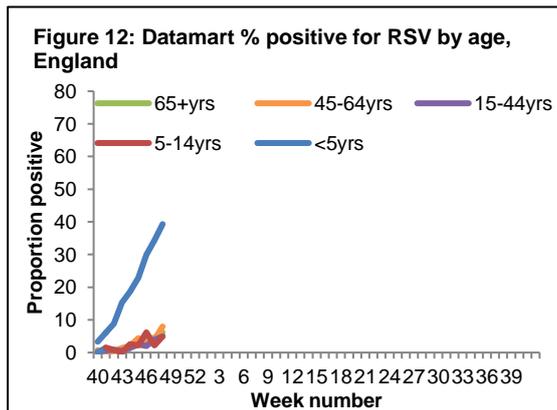
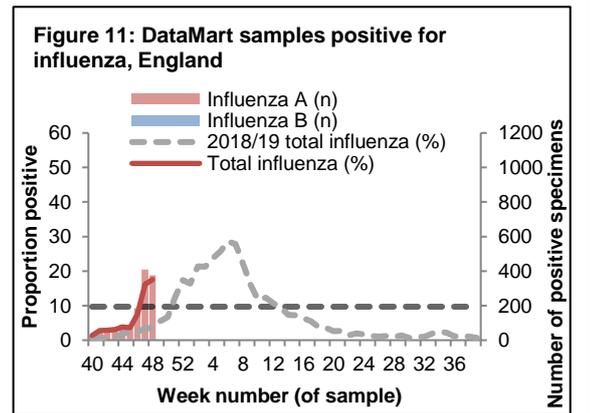
Since week 40, a total of 145 samples (16 influenza A(H1N1)pdm09, 170 influenza A(H3N2), 24 influenza A(unknown subtype), 11 influenza B) tested positive for influenza through this scheme.



- Respiratory DataMart System (England)

In week 48 2019, out of the 2,145 respiratory specimens reported through the Respiratory DataMart System, 376 samples were positive for influenza (15 influenza A(H1N1)pdm09, 277 influenza A(H3), 77 influenza A(not subtyped) and 7 influenza B) (Figure 11), with an overall positivity of 17.5%, which is above the MEM baseline threshold for this season of 9.7%.

RSV positivity continued to increase from 9.9% in week 47 to 13.4% in week 48. The highest positivity for RSV by age group was seen in the <5 year olds at 39.3% in week 48 compared to 34.3% in the previous week. Rhinovirus and parainfluenza positivity decreased to 13.6% and 3.9% respectively in week 48. Adenovirus and human metapneumovirus (hMPV) positivity were low at 2.5% and 1.8% respectively in week 48 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 67 influenza A(H3N2) viruses detected since week 40. Genetic characterisation of 58 of these shows that 41 belong to the genetic clade 3C.3a, and 17 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. Thirty-five 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 seven A(H1N1)pdm09 viruses have been characterised to date. Five 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. Five 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.

One influenza B virus has 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
A(H1N1)pdm09	3	2	2	7
A(H3N2) 3C.2a1	0	17	0	17
A(H3N2) 3C.3a	26	15	9	50
A(H3N2) total	26	32	9	67
B/Yamagata-lineage	0	0	0	0
B/Victoria-lineage	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.

Since week 40 2019, eight influenza A (H1N1) viruses and 28 influenza A (H3N2) viruses were tested for both antiviral agents, oseltamivir and zanamivir, and all viruses are sensitive.

- Antimicrobial susceptibility

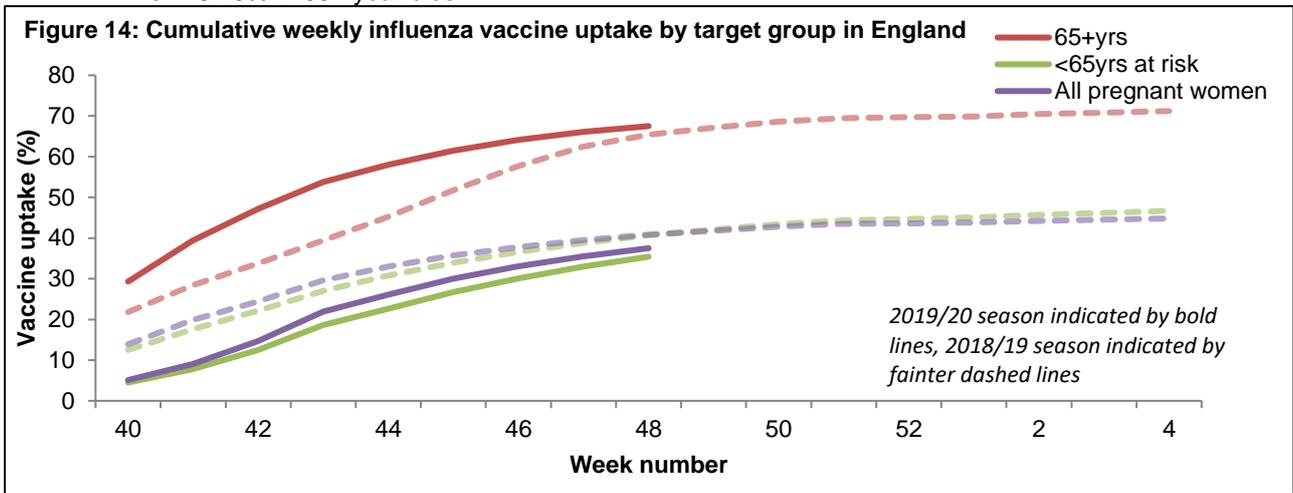
-Table 4 shows in the 12 weeks up to 01 December 2019, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community-acquired 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 01 December 2019, E&W

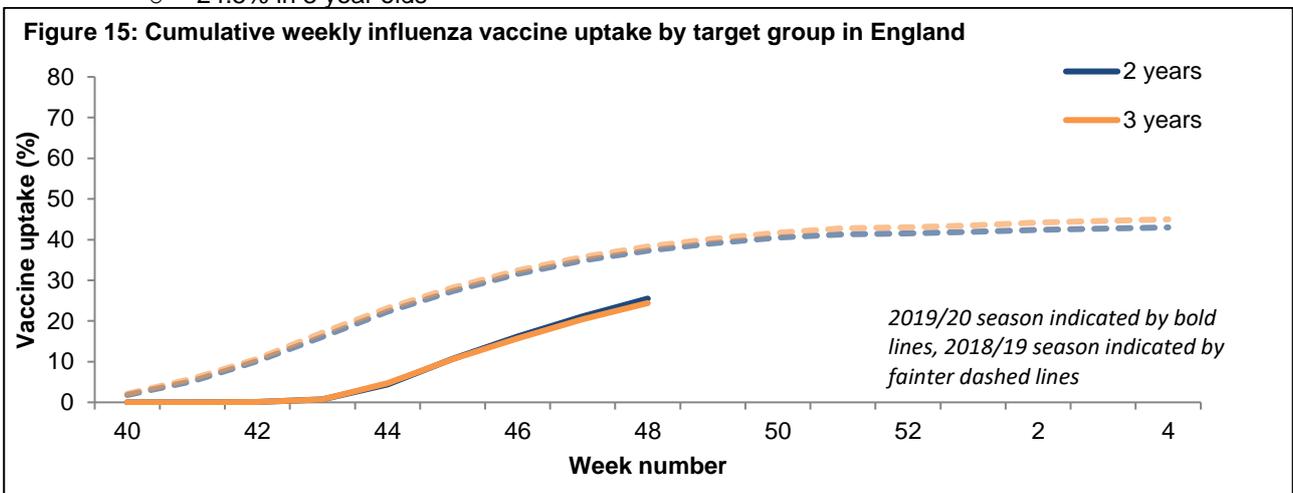
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	3450	87
	Macrolides	3758	81
	Tetracycline	3714	82
<i>H. influenzae</i>	Amoxicillin/ampicillin	13201	68
	Co-amoxiclav	14656	82
	Macrolides	2463	8
	Tetracycline	14703	98
<i>S. aureus</i>	Methicillin	6884	92
	Macrolides	7707	66
MRSA	Clindamycin	388	43
	Tetracycline	504	79
MSSA	Clindamycin	4525	73
	Tetracycline	5988	92

*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 48 2019 in 90.1% 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):
 - 35.4% in under 65 years in a clinical risk group
 - 37.5% in pregnant women
 - 67.5% 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 48 2019, in 90.6% 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):
 - 25.4% in 2 year olds
 - 24.5% in 3 year olds



- Provisional data from the first monthly collection of the influenza vaccine uptake by frontline healthcare workers show 43.6% were vaccinated by 31 October 2019 from 96.6% of all organisations, compared to 46.3% vaccinated in the previous season by 31 October 2018. 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, 5 and 6 age (from a sample of 100% 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 31 October 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 31 October 2019 & 2018, England

School Year	% Vaccine uptake (up to 31 October)	
	2019/20	2018/19
Reception (4-5 years)	17.9	20.5
Year 1 (5-6 years)	17.6	20.7
Year 2 (6-7 years)	17.3	19.9
Year 3 (7-8 years)	16.6	19.7
Year 4 (8-9 years)	16.4	18.9
Year 5 (9-10 years)	15.8	18.2
Year 6 (10-11 years)	15.2	-

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

International Situation

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In the temperate zone of the northern hemisphere, influenza activity remained at inter-seasonal levels in most countries; however continued to increase across the countries of the Western Asia. In the temperate zones of the southern hemisphere, influenza activity returned to interseasonal levels in most countries and decreased to low levels in Chile. Worldwide, seasonal influenza A accounted for the majority of detections, with equal proportions of influenza A(H1N1)pdm09 and A(H3N2) viruses.

- [Europe](#) updated on 29 November 2019 (Joint ECDC-WHO Europe Influenza weekly update)

Overall in week 47, influenza activity remained at baseline or at low levels throughout the European Region and mixed circulation of influenza A and B viruses was detected. There are early signs of influenza B activity in some countries.

For week 47 2019, of 47 Member States and areas reporting on intensity, 43 reported baseline and 4 reported low intensity (across the Region). Of the same Member States reporting on geographic spread, 19 reported no activity, 20 reported sporadic cases and five reported local spread.

For week 47 2019, 117 (11.3%) of 1,039 sentinel specimens tested positive for an influenza virus; 71% were type A and 29% were type B. Of 78 subtyped A viruses, 31% were A(H1N1)pdm09 and 69% were A(H3N2). Of 2 type B viruses ascribed to a lineage, both were B/Victoria.

For the season overall, more influenza type A (n=242, 65%) than type B (n=130, 35%) viruses have been detected. Of 233 subtyped A viruses, 36% were A(H1N1)pdm09 and 64% were A(H3N2). Of 32 influenza type B viruses ascribed to a lineage, 97% were B/Victoria and 3% were B/Yamagata.

Since week 40/2019, more influenza type A (n=121, 93%) than type B (n=9, 7%) viruses have been detected. Of 29 subtyped influenza A viruses, 8 (28%) were A(H1N1)pdm09 and 21 (72%) were A(H3N2). None of the influenza B viruses have been ascribed to a lineage.

Since 40/2019 more influenza type A (n=74, 91%) than type B (n=7, 9%) viruses have been detected. Of 44 subtyped influenza A viruses, 2 (5%) were A(H1N1)pdm09 and 42 (95%) were A(H3N2). No influenza B viruses have been ascribed to a lineage.

For week 47 2019, pooled estimates from the EuroMOMO project of all-cause mortality from 22 countries or areas show mortality levels within the expected range for the time of year.

- [United States of America](#) updated on 29 November 2019 (Centre for Disease Control report)

During week 47, influenza activity continues to increase in the United States and the predominant influenza virus varies by region.

Nationwide during week 47, 2.9% 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 47, 8.0% of respiratory specimens tested by clinical laboratories were influenza positive. This is higher than the previous week.

Based on National Center for Health Statistics (NCHS) mortality surveillance data available on November 28, 2019, 5.1% of the deaths occurring during the week ending November 16, 2019 (week 46) were due to P&I. This percentage is below the epidemic threshold of 6.3% for week 46.

- [Canada](#) updated on 29 November 2019 (Public Health Agency report)

At national level, influenza activity was at the seasonal threshold in week 47, indicating the beginning of the influenza season. Influenza A(H3N2) continues to be the most common influenza virus circulating in Canada for the season to date, an increasing proportion of detections of A(H1N1) and B have been observed.

In week 47, a total of 298 laboratory detections of influenza were reported, of which 61% (183) were influenza A, with 40/72 subtyped influenza A detections being influenza A(H3N2).

The percentage of tests positive for influenza is at seasonal threshold, at 5.0% in week 47.

In week 47, 1.6% of visits to healthcare professionals were due to ILLI, respectively.

To date this season, 106 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 25 November 2019 (based on data up to 10 November 2019) (WHO website)

In the temperate zone of the northern hemisphere, influenza activity remained at inter-seasonal levels in most countries; however continued to increase across the countries of the Western Asia. In the temperate zones of the southern hemisphere, influenza activity returned to interseasonal levels in most countries and decreased to low levels in Chile. Worldwide, seasonal influenza A accounted for the majority of detections, with equal proportions of influenza A(H1N1)pdm09 and A(H3N2) viruses.

Respiratory illness indicators started to increase in some countries of the WHO European region, Eastern Asia and in North America, but influenza detections remain below seasonal thresholds.

In Western Asia, influenza activity continued to increase overall. Bahrain and Saudi Arabia reported predominant detection of influenza A(H1N1)pdm09 and a small proportion of B viruses. Kuwait and Oman reported detections of all seasonal influenza subtypes co-circulating and Qatar reported predominant circulation of influenza A(H3N2) viruses.

In the Caribbean countries and tropical countries of South America, influenza activity remained low overall, however increased detections of influenza A(H3N2) and B/Victoria lineage were reported in Cuba.

In Central American countries, decreased influenza activity was reported in El Salvador and Nicaragua, with influenza A(H1N1)pdm09 and B/Victoria co-circulating in the former and A(H3N2) and B viruses co-circulating in the latter.

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 Côte d'Ivoire, Ghana, and Guinea and influenza A(H3N2) in Niger. Increased influenza activity due to influenza A(H3N2) and B viruses was reported in Togo.

In Middle Africa, influenza detections of all seasonal influenza subtypes were reported in Cameroon and a few detections of influenza B/Victoria lineage viruses were reported in South Sudan.

In Eastern Africa, influenza detections were low across most reporting countries.

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. Influenza activity remained elevated in Lao PDR, with detections of predominately influenza B/Victoria-lineage and influenza A(H3N2) viruses. Influenza virus detections of predominantly influenza A viruses continued to be reported at low level in Cambodia and Thailand.

The WHO GISRS laboratories tested more than 85,126 specimens between 28 October 2019 and 10 November 2019. 6,187 were positive for influenza viruses, of which 4,608 (74.5%) were typed as influenza A and 1,579 (25.5%) as influenza B. Of the sub-typed influenza A viruses, 1,473 (47.0%) were influenza A (H1N1)pdm09 and 1,664 (53.0%) were influenza A (H3N2). Of the characterized B viruses, 43 (6.2%) belonged to the B-Yamagata lineage and 650 (93.8%) 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 04 December 2019

Up to 04 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 1,716 suspected cases in the UK since September 2012 that have been investigated for MERS-CoV and tested negative.

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.

Between [1 and 30 September 2019](#), the National IHR Focal Point of Saudi Arabia reported 4 additional laboratory-confirmed cases of MERS-CoV infection with one associated death.

Globally, since September 2012 and up to 08 October 2019, [WHO](#) has been notified of 2,470 laboratory-confirmed cases of infection with MERS-CoV, including 851 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](#))
- 2019/20 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))