



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

17 October 2019 – Week 42 report (up to week 41 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 41 (ending 13 October 2019)

- During week 41, all influenza activity indicators are **Below Baseline**.
- The impact of flu on healthcare services is **Below baseline** for hospitalisations and for ICU/HDU influenza admissions.

Community

- 28 new acute respiratory outbreaks have been reported in the past 7 days. 26 outbreaks were reported from care homes where 2 tested positive for influenza A(not subtyped). One outbreak was reported from a school with no test results available. The remaining outbreak was reported from a hospital with no test results.

Primary Care

- The rate of influenza-like illness (ILI) was **Below Baseline** threshold levels. The overall weekly ILI GP consultation rate was 5.0 per 100,000 registered population in participating GP practices for England, similar to 4.3 per 100,000 in the previous week.
- In the devolved administrations, ILI rates were **Below Baseline** threshold levels for Northern Ireland, Scotland and Wales.

GP ILI
Consultations
England



Secondary Care

- Hospitalisation rate observed for laboratory confirmed influenza was **Below baseline** levels, with a rate of 0.30 per 100,000 trust catchment population for England (17 NHS Trusts) compared to 0.04 per 100,000 in the previous week.
- ICU/HDU admission rate observed for laboratory confirmed influenza was **Below baseline** levels, with a rate of 0.01 per 100,000 trust catchment population for England (133/143 NHS Trusts) compared to 0.00 per 100,000 the previous week.
- There were no laboratory confirmed influenza admissions reported from the 6 Severe Respiratory Failure centres in the UK.

Hospitalisation



ICU/HDU



All-cause mortality

- In week 41 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 in week 41, and no data was available for Scotland in week 39 2019.

Microbiological surveillance

- Primary care: Three samples tested positive for influenza (1 influenza A(H1N1)pdm09, 1 influenza A(H3) and 1 influenza A(unknown subtype) through the UK GP sentinel swabbing schemes in week 41 2019, with an overall positivity of 5.5%
- Secondary care: There were 38 detections recorded through the DataMart scheme (2 influenza A(H1N1)pdm09, 15 influenza A(H3) and 21 influenza A(not subtyped)). The overall influenza percent positivity was 2.2% and **Below Baseline** threshold level.

Secondary
Care



Vaccination

- Weekly uptake: Up to week 41 2019, in 40.7% 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: 7.8% in under 65 years in a clinical risk group, 9.1% in pregnant women and 39.4% in 65+ year olds. In 40.8% of GP practices reporting for the childhood collection, the provisional proportion vaccinated was: 0.0% in 2 year olds and 3 year olds respectively.
- Influenza vaccine uptake data in primary school age children will be collected through the school delivery programme and be published in the monthly report on 21 November 2019.

International situation

- In the temperate zones of the southern hemisphere, influenza activity was low in most countries, and appeared to decrease in Chile after a second wave of influenza activity of predominately B viruses. In the temperate zone of the northern hemisphere, influenza activity remained at inter-seasonal levels in most countries; however activity appeared to have started across the countries of the Arabian Peninsula. Worldwide, seasonal influenza A viruses continued to account for the majority of detections, though the proportion of influenza B viruses increased in recent weeks.

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

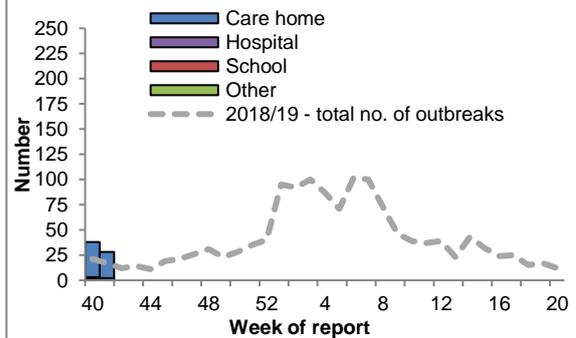
28 new acute respiratory outbreaks were reported in the past 7 days, with 2 confirmed with influenza. ILI rates observed through internet based surveillance were low in week 41.

- Acute respiratory disease outbreaks

-28 new acute respiratory outbreaks have been reported in the past 7 days. 26 outbreaks were reported from care homes where 2 tested positive for influenza A(not subtyped), 6 tested positive for rhinovirus and one for parainfluenza. One outbreak was reported from a school with no test results available. The remaining outbreak was reported from a hospital with no test results available.

-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and respscisc@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).

- Data will be reported from week 45.

- 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.

- Data will be reported from week 45.

- 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

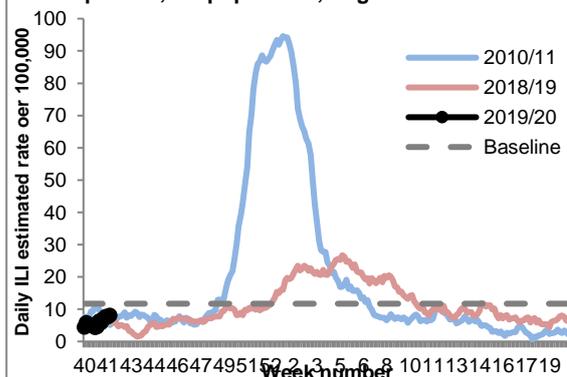
- Internet-based surveillance of influenza-like illness in the general population is also undertaken through FluDetector (<https://fludetector.cs.ucl.ac.uk>), a model assessing internet-based search queries for ILI.

- 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 41 was below the baseline threshold of 11.7 per 100,000, at 8.8 per 100,000 compared to 4.6 per 100,000 in week 40 (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



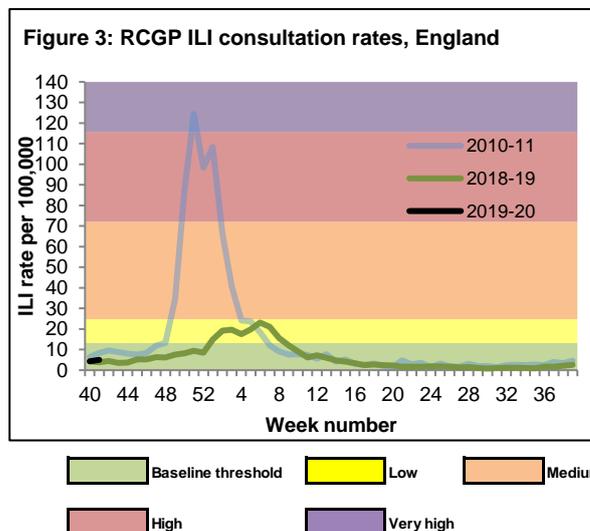
In week 41, the overall weekly influenza-like illness (ILI) GP consultation rate remained below baseline threshold levels in England. In the devolved administrations, ILI rates were below their respective baselines.

- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance was 5.0 per 100,000 registered population in participating GP practices in week 41 compared to 4.3 per 100,000 in week 40. This is below the baseline threshold (12.7 per 100,000) (Figure 3*). By age group, the highest rates were seen in the <1 year olds (8.0 per 100,000) and in the 65-74 year olds (6.9 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 41, overall weekly ILI consultation rates across the countries of the UK were all below their respective baseline threshold levels (Table 1).

- By age group, the highest rates were seen in the 45-64 year olds in Scotland (10.2 per 100,000), in the 1-4 year olds in Wales (5.0 per 100,000) and in the 15-44 year olds in Northern Ireland (6.1 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)	4.3	5.0															
Wales	1.7	4.0															
Scotland	5.5	6.7															
Northern Ireland	3.9	4.8															

*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 4.1 per 100,000 in week 41 2019 (Figure 4).

GP In Hours consultations for both upper and lower respiratory tract infections increased in particular in the 0-4 year olds in week 41, but remained within seasonal expectations.

NHS 111 calls for coughs and sore throats increased in week 41.

GP out of hours consultations and Emergency Department (ED) attendances for acute respiratory infections continued to increase however were in line with seasonal expectations, in week 41. ED attendances for pneumonia increased further in the 65+ year olds.

- Figure 4 represents a map of GP ILI consultation rates in week 40 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 41

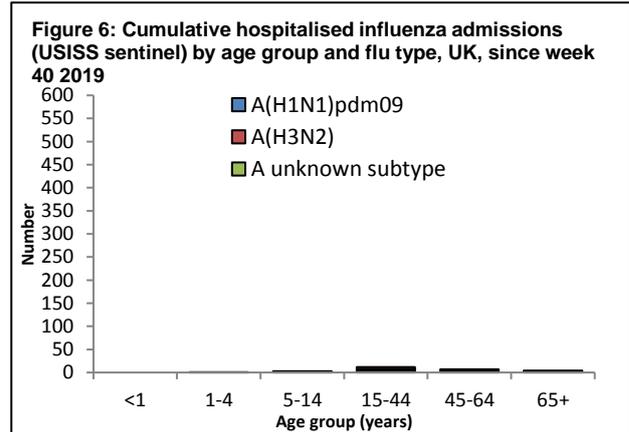
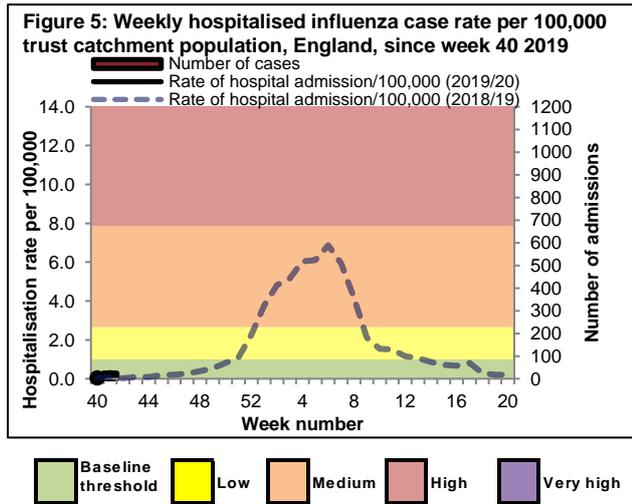


In week 41 2019, there were 24 hospitalised confirmed influenza case (11 influenza A(H3N2), 10 influenza A(unknown subtype) and 3 influenza B) reported through the USISS sentinel hospital network across England (17 Trusts). There were 7 new admissions to ICU/HDU with confirmed influenza (1 influenza A(H3N2) and 6 influenza A(unknown subtype)) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (133/143 Trusts in England).

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 41)

- In week 41, there were 24 hospitalised laboratory confirmed influenza case (11 influenza A(H3N2), 10 influenza A(unknown subtype) and 3 influenza B) reported from 17 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 0.30 per 100,000 trust catchment population (Figures 5 and 6) compared to 0.04 per 100,000 in week 40. This is below the baseline impact threshold of 0.99 per 100,000.

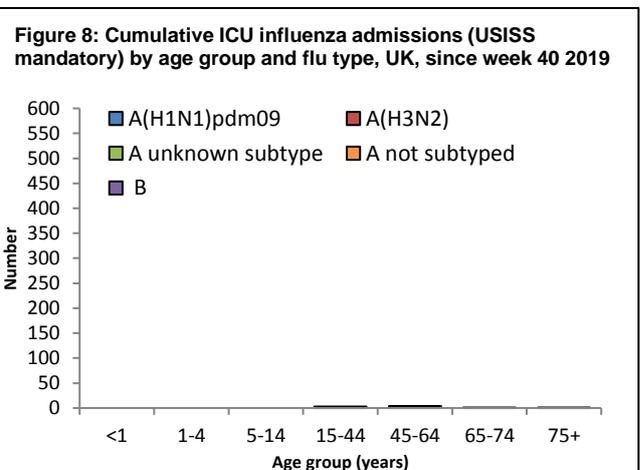
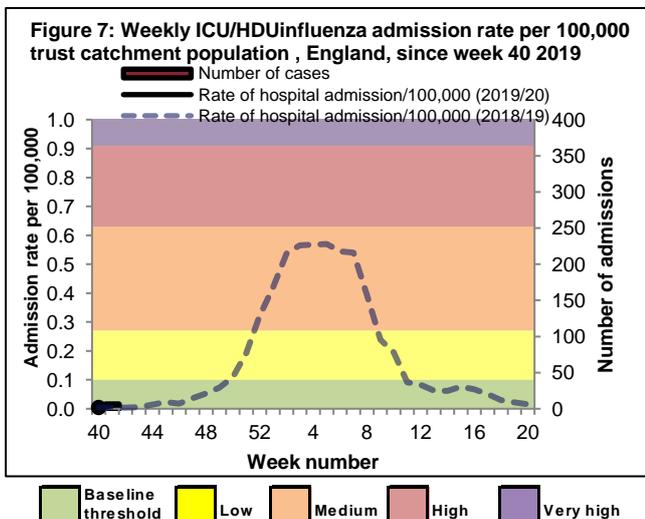
A total of 27 hospitalised confirmed influenza admissions (12 influenza A(H3N2), 11 influenza A(unknown subtype) and four influenza B) have been reported in England since week 40 2019 via the sentinel scheme.



- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 41)

- In week 41, there were 7 new admissions to ICU/HDU with confirmed influenza (1 influenza A(H3N2) and 6 influenza A(unknown subtype)) reported across the UK (133/143 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.01 per 100,000 (Figures 7 and 8) compared to 0.00 per 100,000 in week 40. This is below the baseline impact threshold of 0.10 per 100,000. No influenza laboratory confirmed deaths were reported to have occurred in ICU/HDU week 41 in the UK.

A total of 9 new admissions (one influenza A(H3N2) and 8 influenza A(unknown subtype)) and 1 confirmed death 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 41)

- In week 41, there were no new admissions for laboratory confirmed influenza among the 6 Severe Respiratory Failure (SRF) centres in the UK.

All-cause mortality data

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In week 41 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 41 2019 and data was not available for Scotland in week 39.

- All-cause death registrations, England and Wales

- In week 40 2019, an estimated 9,799 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is an increase compared to the 9,517 estimated death registrations in week 39 2019.

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

- In week 41 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 41 2019 and data was not available for Scotland in week 39. (Table 2).

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

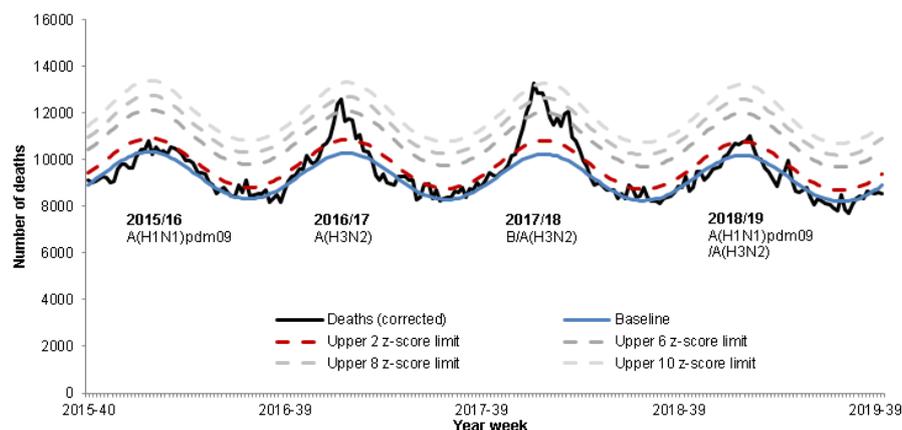
Country	Excess detected in week 41 2019?	Weeks with excess in 2019/20
England	×	NA
Wales	×	NA
Northern Ireland	×	NA
Country	Excess detected in week 39 2019?	Weeks with excess in 2018/19
Scotland	-	52-02; 19; 38

* 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 41 2019

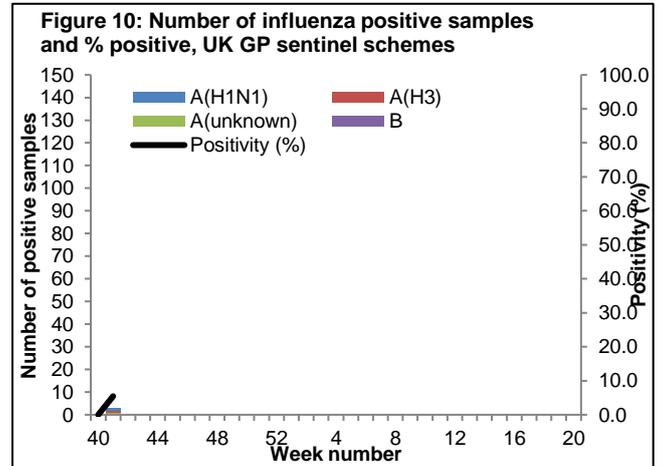


*Note: Delays in receiving all registered deaths from April 2018, following changes in IT systems at ONS, may result in some delays in the model to adjust for most recent deaths.

In week 41 2019, 3 samples tested positive for influenza with an overall positivity of 5.5%, through the UK GP sentinel schemes. 38 positive detections were recorded through the DataMart scheme (2 influenza A(H1N1)pdm09, 15 influenza A(H3) and 21 influenza A(not subtyped)) with a positivity of 2.2%, this is below the baseline threshold of 9.7%.

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

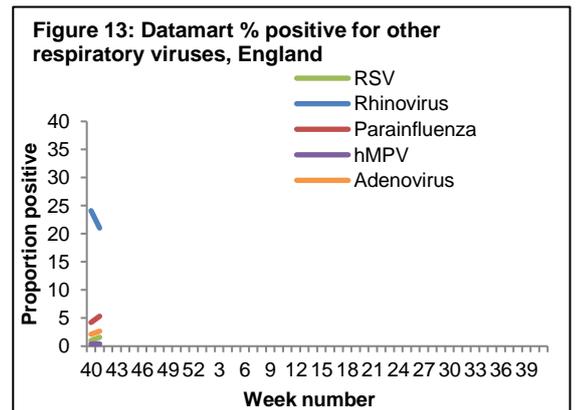
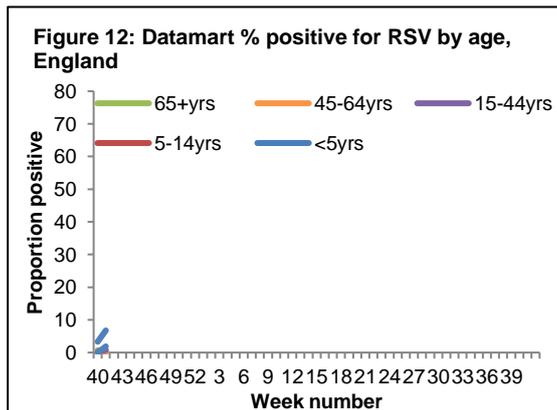
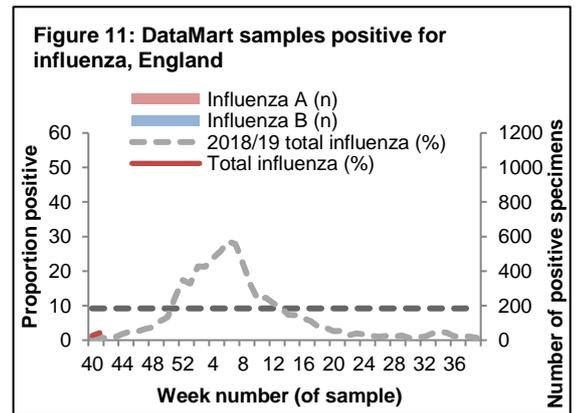
In week 41 2019, 3 samples tested positive for influenza (1 influenza A(H1N1)pdm09, 1 influenza A(H3) and 1 influenza A(unknown subtype)), with an overall positivity of 5.5%, through the UK GP sentinel swabbing schemes (Figure 10).



- Respiratory DataMart System (England)

In week 41 2019, out of the 1,761 respiratory specimens reported through the Respiratory DataMart System, 38 samples were positive for influenza (2 influenza A(H1N1)pdm09, 15 influenza A(H3) and 21 influenza A(not subtyped)) (Figure 11), with an overall positivity of 2.2%, which is below the MEM baseline threshold for this season of 9.7%.

RSV positivity remains low, but has increased slightly to 1.6% in week 41 from 1.0% in week 40. The highest positivity for RSV by age group was seen in the <5 year olds at 6.8% in week 41. Rhinovirus positivity remains high at 21.0% in week 41, decreasing from 24.0% in the previous week. Parainfluenza positivity has increased at 5.3% in week 41. Adenovirus and human metapneumovirus (hMPV) positivity were low at 2.7% and 0.4% respectively in week 41 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 9.2% 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.

In week 41 2019, no influenza viruses were characterised by PHE Respiratory Virus Unit (RVU).

- 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.

In week 41 2019, no influenza viruses were tested for antiviral susceptibility.

- Antimicrobial susceptibility

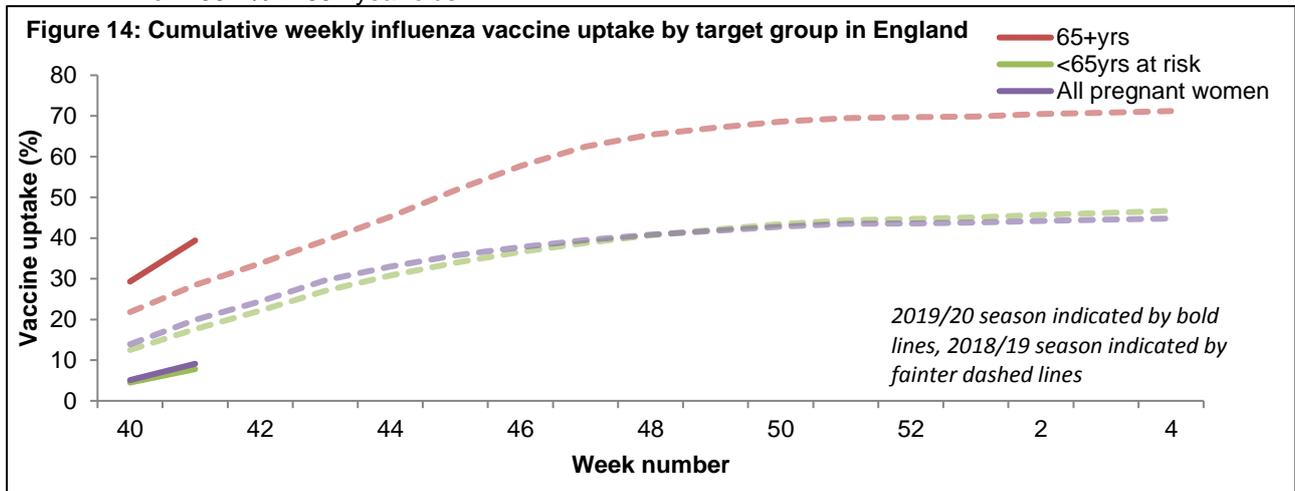
-Table 4 shows in the 12 weeks up to 13 October 2019, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired 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 13 October 2019, E&W

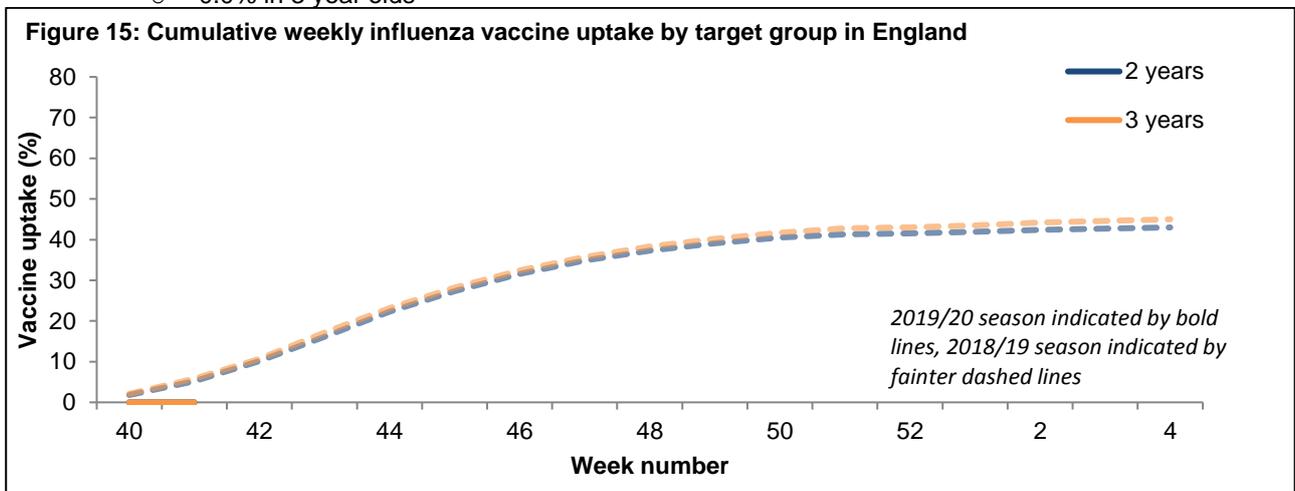
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	2849	87
	Macrolides	3085	80
	Tetracycline	3046	81
<i>H. influenzae</i>	Amoxicillin/ampicillin	11909	68
	Co-amoxiclav	13192	82
	Macrolides	2350	7
	Tetracycline	13126	98
<i>S. aureus</i>	Methicillin	6599	92
	Macrolides	7447	66
MRSA	Clindamycin	352	46
	Tetracycline	457	77
MSSA	Clindamycin	4312	74
	Tetracycline	5742	92

*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 41 2019 in 40.7% 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):
 - 7.8% in under 65 years in a clinical risk group
 - 9.1% in pregnant women
 - 39.4% 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 41 2019, in 40.9% 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):
 - 0.0% in 2 year olds
 - 0.0% in 3 year olds



- In addition, the childhood programme has been extended to all children of primary school age (Reception to school year 6). The data for the school programme, including the 4 year olds will be included in the monthly report to be published on 21 November 2019.

In the temperate zones of the southern hemisphere, influenza activity was low in most countries, and appeared to decrease in Chile after a second wave of influenza activity of predominately B viruses. In the temperate zone of the northern hemisphere, influenza activity remained at inter-seasonal levels in most countries; activity however appeared to have started across the countries of the Arabian Peninsula. Worldwide, seasonal influenza A viruses continued to account for the majority of detections, though the proportion of influenza B viruses increased in recent weeks.

- [Europe](#) updated on 11 October 2019 (Joint ECDC-WHO Europe Influenza weekly update)

This is the first weekly report for the 2019-2020 influenza season.

Overall, influenza activity was low throughout the European Region and both influenza A and B viruses detected in sporadic cases.

For week 40 2019, of 38 Member States and areas reporting on intensity, all reported baseline or low intensity. Of 38 Member States and areas reporting on geographic spread, 27 reported no activity (across the region), 10 reported sporadic cases (in northern, southern and western areas) and 1 (Turkey) reported regional activity.

For week 40/2019, 9 of 212 (4%) sentinel specimens tested positive for an influenza virus; 1 was influenza type A and 8 were influenza type B. The 7 influenza B viruses genotyped were of the B/Victoria lineage.

For week 40/2019, the United Kingdom reported 2 laboratory-confirmed influenza cases in ICU, both were infected with influenza type A viruses.

For week 40/2019, Ireland reported 1 laboratory-confirmed influenza case from other wards that was infected with an influenza type B virus.

For week 40/2019, pooled estimates from the EuroMOMO project of all-cause mortality from 21 countries or areas show mortality levels are within normal expected ranges.

- [United States of America](#) updated on 11 October 2019 (Centre for Disease Control report)

During week 40, influenza activity remains low in the United States.

Nationwide during week 40, 1.4% of patient visits reported through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI), which is below the national baseline of 2.4%.

Based on National Center for Health Statistics (NCHS) mortality surveillance data available on October 10, 2019, 5.0% of the deaths occurring during the week ending September 28, 2019 (week 39) were due to P&I. This percentage is below the epidemic threshold of 5.6% for week 39.

- [Canada](#) updated on 11 October 2019 (Public Health Agency report)

At national level, influenza activity remains at interseasonal levels across the country in week 39 and 40.

In weeks 39 and 40, a total of 82 laboratory detections of influenza were reported, of which 94% (77) were influenza A. The percentage of tests positive for influenza remains at interseasonal levels, at 1.1% in week 39 and 1.2% in week 40. Influenza A(H3N2) accounted for 94% (30 of 32) subtyped influenza A detections during this 2-week period.

In week 39 and 40, 0.8% and 1.3% of visits to healthcare professionals were due to ILI, respectively.

In weeks 39 and 40 less than five influenza-associated hospitalisations were reported by participating provinces and territories.

- [Global influenza update](#) updated on 14 October 2019 (WHO website)

In the temperate zones of the southern hemisphere, influenza activity was low in most countries, and appeared to decrease in Chile after a second wave of influenza activity of predominately B viruses. In the temperate zone of the northern hemisphere, influenza activity remained at inter-seasonal levels in most countries; however appeared to have started across the countries of the Arabian Peninsula. Worldwide, seasonal influenza A viruses continued to account for the majority of detections, though the proportion of influenza B viruses increased in recent weeks.

In Oceania, influenza activity decreased across the transmission zone. In Australia, despite some geographical variability across regions, at the national level influenza-like illness (ILI) and weekly laboratory-confirmed

notifications of influenza were lower than average for this time of the year, decreased from a peak in activity in July. Despite this year's early season, activity has not returned to inter-seasonal levels. The proportion of influenza B viruses among influenza positive samples continued to slightly increase this period. ILI and influenza activity were below their seasonal baseline thresholds in New Zealand.

In South Africa, influenza activity remained below seasonal threshold.

In temperate South America, influenza activity was low in most countries. In Chile, influenza activity appeared to decrease after a second wave of predominately B viruses.

In the Caribbean countries and the tropical countries of South America, influenza activity remained low overall.

In Central American countries, influenza activity continued to increase in El Salvador and Nicaragua, with influenza A(H1N1)pdm09 predominately detected in the former and all seasonal influenza subtypes co-circulating in the latter. Respiratory syncytial virus (RSV) activity was high in Jamaica.

In Western Africa, Côte d'Ivoire and Guinea continued to report increased detections of predominately influenza B/Victoria lineage viruses. ILI activity continued to increase in Senegal and Togo with detections of influenza A(H3N2) and B viruses.

In Middle and Eastern Africa, influenza detections were low or appeared to have decreased across reporting countries.

In Southern Asia, influenza activity was low across reporting countries with the exception of Bhutan where influenza percent positivity remained above alert threshold with influenza B/Victoria lineage viruses predominated, followed by A(H3N2). In South East Asia, influenza activity appeared to increase in Lao PDR, with influenza A(H3N2) and B/Victoria-lineage co-circulating. Detections of predominantly influenza A(H1N1)pdm09 and B viruses decreased in Myanmar.

In the temperate zone of the northern hemisphere, influenza activity started to increase across the countries of the Arabian Peninsula, with influenza A(H3N2) viruses predominating in Qatar and all seasonal influenza subtypes co-circulating in Kuwait and Oman.

The WHO GISRS laboratories tested more than 63,162 specimens between 16 September 2019 and 29 September 2019. 3,494 were positive for influenza viruses, of which 1,946 (55.7%) were typed as influenza A and 1,548 (44.3%) as influenza B. Of the sub-typed influenza A viruses, 447 (35.5%) were influenza A (H1N1)pdm09 and 813 (64.5%) were influenza A (H3N2). Of the characterized B viruses, 56 (14.3%) belonged to the B-Yamagata lineage and 336 (85.7%) 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 16 October 2019

Up to 16 October 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 1,675 suspected cases in the UK since September 2012 that have been investigated for MERS-CoV and tested negative.

Between [1 and 31 August 2019](#), the National IHR Focal Point of Saudi Arabia reported 6 additional laboratory-confirmed cases of Middle East respiratory syndrome (MERS-CoV) infection and one associated death.

Globally, since September 2012 and up to 31 August 2019, [WHO](#) has been notified of 2,464 laboratory-confirmed cases of infection with MERS-CoV, including 850 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.

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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](#))