



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

11 October 2018 – Week 41 report (up to week 40 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 40 (ending 07 October 2018)

- There is no widespread influenza circulation in the community with all indicators **Below Baseline** threshold levels.
- The impact on the healthcare services is **Below Baseline** threshold levels for hospitalisations and ICU/HDU admissions.
- Early signs indicate that RSV activity has started to increase

Community

- 21 new acute respiratory outbreaks have been reported in the past 7 days. 20 out of the 21 outbreaks were reported from care homes where 3 tested positive for rhinovirus and 1 positive for parainfluenza. The remaining outbreak was reported from a school with no test results available

Primary Care

- The rate of influenza-like illness (ILI) was **Below Baseline** threshold. The overall weekly ILI GP consultation rate was 4.2 per 100,000 in England.
- In the devolved administrations, ILI rates were also **Below Baseline** thresholds

GP ILI
Consultations
England



Secondary Care

- Hospitalisation rate observed was **Below Baseline** threshold, with a rate of 0.01 per 100,000 trust catchment population for England.
- ICU/HDU admission rate observed was **Below Baseline** threshold, with a rate of 0.00 per 100,000 for England.
- There were no new influenza admissions reported from the six Severe Respiratory Failure centres in the UK.

Hospitalisation



ICU/HDU



All-cause mortality

- In week 40 2018, no statistically significant excess all-cause mortality by week of death was seen overall and by age group in England. In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in Scotland Northern Ireland and Wales.

Microbiological surveillance

- Primary care: 1 sample tested positive for influenza (1 influenza B) through the UK GP sentinel schemes.
- Secondary care: Influenza percent positivity observed was **Below Baseline** threshold levels. 8 detections were recorded through the DataMart scheme (2 influenza A(H3), 4 influenza A(unknown subtype), and 2 influenza B) with a positivity of 0.6%. RSV positivity amongst the <5 year olds is elevated at 9.4%.

Secondary
Care



Vaccination

- Weekly uptake: Up to week 40 2018, in 41.1% of GP practices the provisional proportion of people in England who had received the 2018/19 influenza vaccine in targeted groups was: 12.5% in under 65 years in a clinical risk group, 13.9% in pregnant women and 21.8% in 65+ year olds. In 41.1% of GP practices reporting for the childhood collection the provisional proportion vaccinated was: 1.8% in 2 year olds and 2.1% in 3 year olds.
- Flu uptake data on 4 year olds will be collected through the school delivery programme and be published in the monthly report on 22 November 2018.

International situation

- In the temperate zone of the Southern hemisphere, influenza activity remained elevated in South America and continued to decrease in Southern Africa. Influenza activity remained at low seasonal levels in Australia and New Zealand. In the temperate zone of the northern hemisphere influenza activity was at inter-seasonal levels. Decreased influenza activity was reported in most countries of tropical America. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections

Key

Arrows (vs previous week):



Increase



Decrease



Stable/No trend

Colour (intensity according to MEM threshold):

Below Baseline

Low

Moderate

High

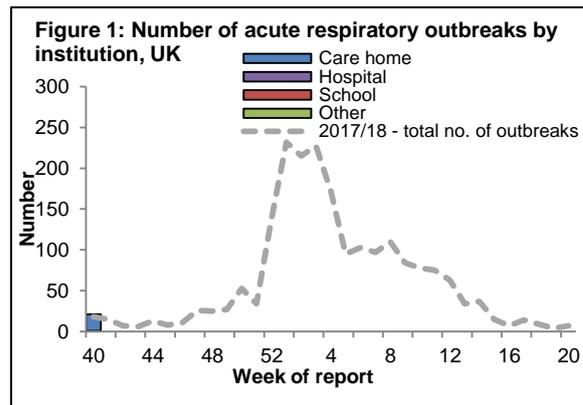
Very High

21 new acute respiratory outbreaks were reported in the past 7 days.

- Acute respiratory disease outbreaks

- 21 new acute respiratory outbreaks have been reported in the past 7 days. 20 out of the 21 outbreaks were reported from care homes where 3 tested positive for rhinovirus and 1 positive for parainfluenza. The remaining one outbreak was reported from a school with no test results available.

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

- 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 the FluSurvey. A project run by PHE as part of a European wide initiative

-Data will be reported from week 44.

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

In week 40, the overall weekly influenza-like illness (ILI) GP consultation rate remained low and below the baseline threshold in England. In the devolved administrations, ILI rates are below baseline levels.

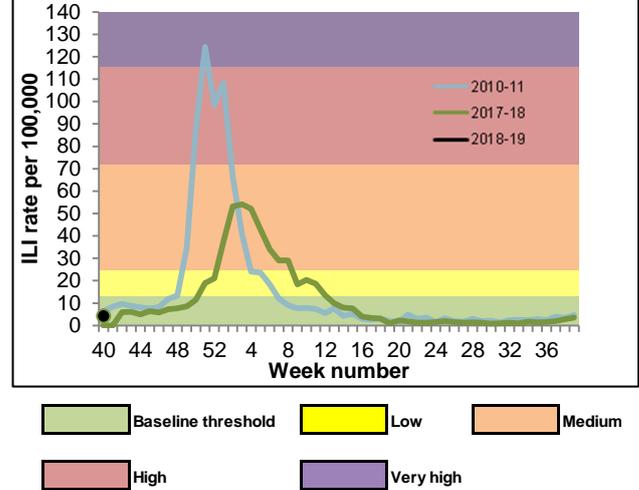
- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance was at 4.2 per 100,000 in week 40. This is below the baseline threshold (13.1 per 100,000) (Figure 4*). By age group, the highest rates were seen in 45-64 year olds (5.6 per 100,000) and 15-44 year olds (5.4 per 100,000).

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

Figure 4: RCGP ILI consultation rates, England



UK

- In week 40, overall weekly ILI consultation rates across the countries of the UK were all below their respective baseline thresholds (Table 1).
- By age group, the highest rates were seen in the 75+ year olds in Northern Ireland (7.5 per 100,000), 45-64 year olds in Scotland (9.6 per 100,000) and in the 15-44 year olds in Wales (5.9 per 100,000).

Table 1: GP ILI consultations in the UK for all ages with MEM thresholds applied*

GP ILI consultation rates (all ages)	Week number																
	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4
England (RCGP)	4.2																
Wales	5.9																
Scotland	7.1																
Northern Ireland	3.8																

*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 at 3.4 per 100,000 in week 40 (Figure 5).

During week 40, an increase in bronchitis/bronchiolitis ED attendances were noted in infants aged <1 year. NHS 111 calls for coughs continued to increase in children aged 1-4 years old.

Figure 5 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 consultation rates presented for each utLA on the map should be interpreted in context of regional and national ILI activity; as MEM thresholds are calculated (based on previous influenza seasons from 2012/13 onwards) separately for each of the nine PHE centres and utLA rates are then compared to Centre-level thresholds only, therefore utLAs with higher background rates than the Centre may appear to have higher ILI activity.

-For further information, please see the syndromic surveillance [webpage](#).

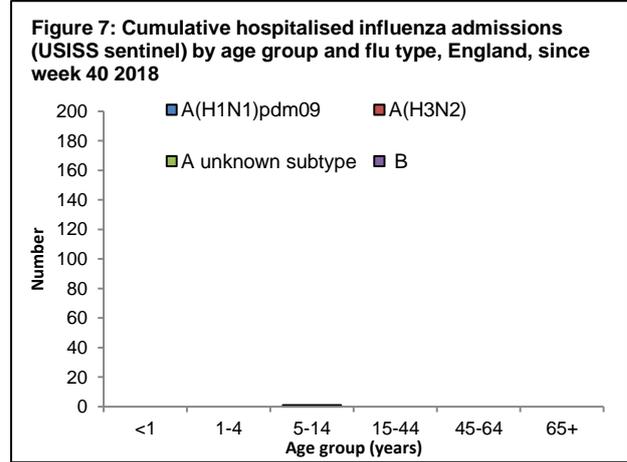
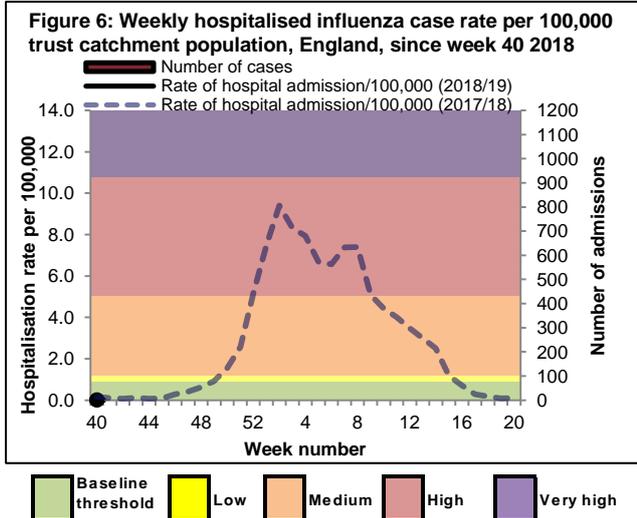
Figure 5: Map of GP ILI consultation rates in week 40



In week 40 2018, there was 1 hospitalised confirmed influenza case (1 influenza B) reported through the USISS sentinel hospital network across England (17 Trusts). There were 2 new admissions to ICU/HDU with confirmed influenza (1 influenza A(H1N1)pdm09 and 1 influenza A(unknown subtype)) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (135/143 Trusts in England).

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 40)

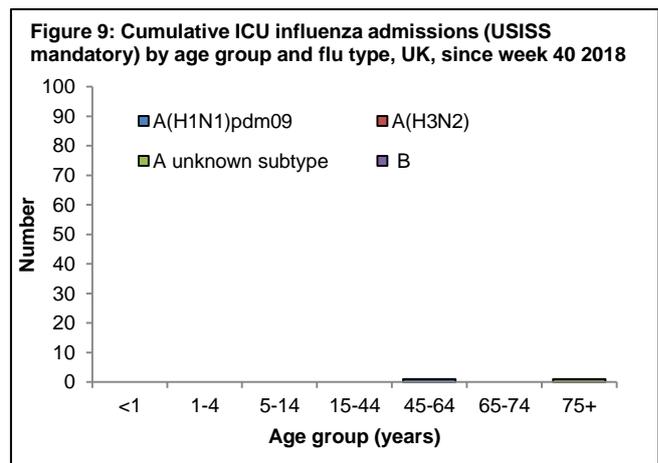
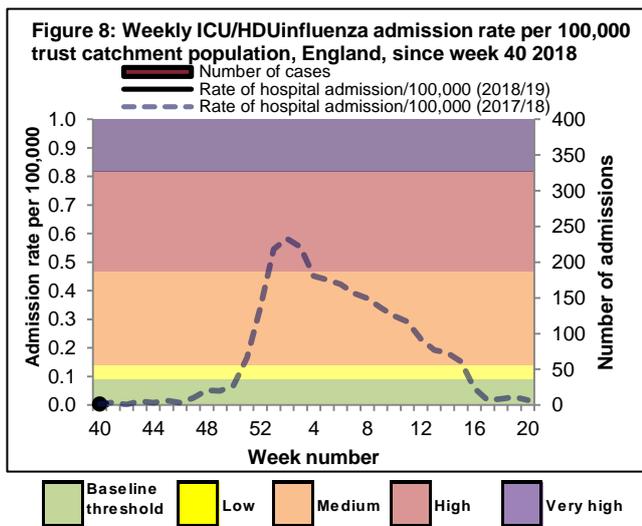
- In week 40, there was 1 hospitalised laboratory confirmed influenza case (1 influenza B) reported from 17 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 0.01 per 100,000 trust catchment population (Figures 6 and 7), this is below the baseline impact threshold of 0.89 per 100,000.



*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#disease-severity-and-mortality-data>

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 40)

- In week 40, there were 2 new admissions to ICU/HDU with confirmed influenza (1 influenza A(H1N1)pdm09 and 1 influenza A(unknown subtype)) reported across the UK (135/143 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.00 per 100,000 (Figures 8 and 9), this is below the baseline impact threshold of 0.09 per 100,000. No flu laboratory confirmed deaths were reported to have occurred in ICU week 40 in the UK.



*The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: <https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#disease-severity-and-mortality-data>

- USISS Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 40)

- In week 40, there were no new influenza admissions reported from the 6 Severe Respiratory Failure (SRF) centres in the UK.

All-cause mortality data

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In week 40 2018, no statistically significant excess all-cause mortality by week of death was observed overall and by age group in England, through the EuroMOMO algorithm. In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in Scotland, Wales and Northern Ireland in week 40 2018.

- All-cause death registrations, England and Wales

- In week 39 2018, an estimated 9,150 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a decrease compared to the 9,305 estimated death registrations in week 38 2018.

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

- In week 40 2018 in England, no statistically significant excess mortality by week of death above the upper 2 z-score threshold was seen overall, by age group and subnationally (all ages), after correcting ONS disaggregate data for reporting delay with the standardised [EuroMOMO](#) algorithm. This data is provisional due to the time delay in registration; numbers may vary from week to week.

- In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in Scotland, Wales and Northern Ireland in week 40 2018 (Table 2).

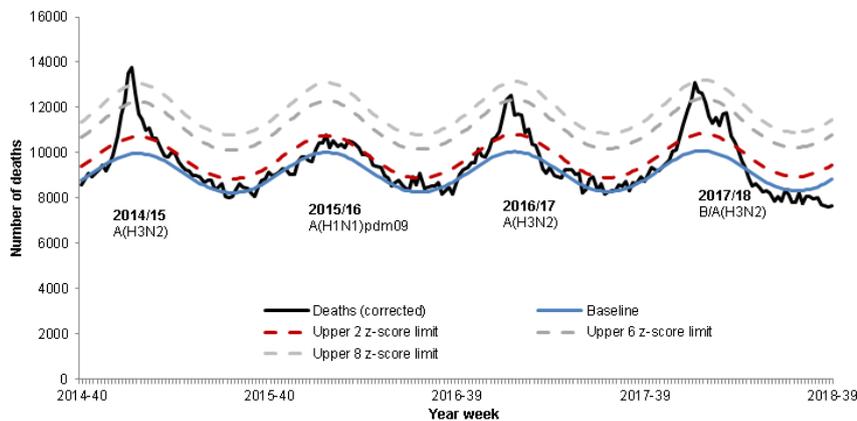
Table 2: Excess mortality by UK country, for all ages*

Country	Excess detected in week 40 2018?	Weeks with excess in 2018/19
England	×	NA
Wales	×	NA
Scotland	×	NA
Northern Ireland	×	NA

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

* NA refers to data not available for this week

Figure 10: Weekly observed and expected number of all-age all-cause deaths, with the dominant circulating influenza A subtype, England, 2014 to week 40 2018

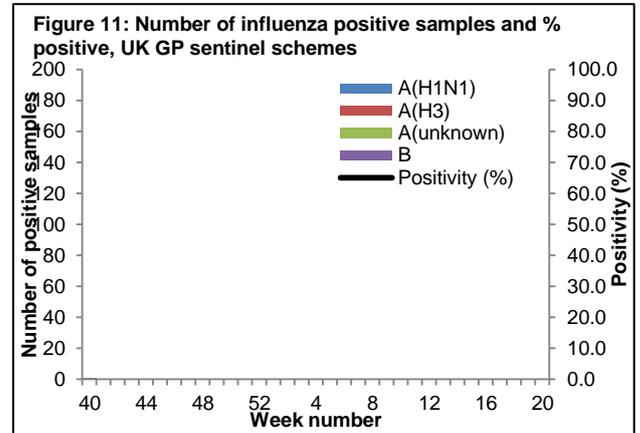


*Note: Delays in receiving all registered deaths from April 2018, following changes in IT systems at ONS, may result in some delays in the model to adjust for most recent deaths.

In week 40 2018, 1 sample tested positive for influenza (1 influenza B) through the UK GP sentinel schemes. 8 positive detections were recorded through the DataMart scheme (2 influenza A(H3), 4 influenza A(unknown subtype) and 2 influenza B) with a positivity of 0.6%, this is below the baseline threshold of 9.2%.

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

-In week 40, 1 sample tested positive for influenza (1 influenza B) through the UK GP sentinel swabbing scheme (Figure 11).

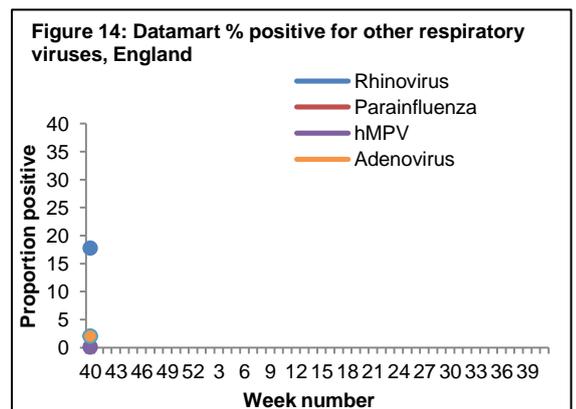
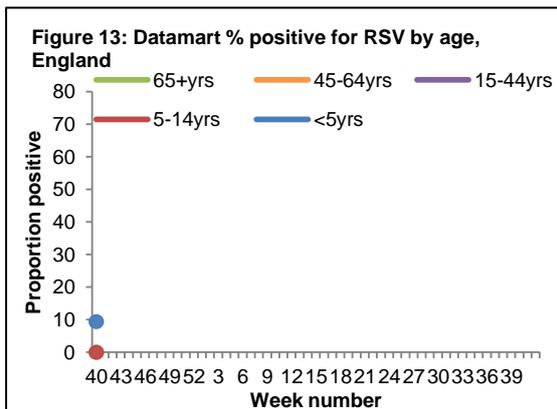
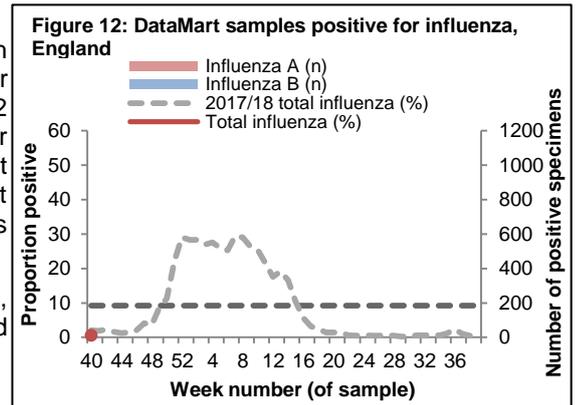


NB. Positivity (%) omitted when fewer than 10 specimens were tested

- Respiratory DataMart System (England)

In week 40 2018, out of the 1390 respiratory specimens reported through the Respiratory DataMart System, 8 samples (0.6%) were positive for influenza (2 influenza A(H3), 4 influenza A(unknown subtype) and 2 influenza B) (Figure 12), which is below the MEM baseline threshold for this season of 9.2%. The overall positivity for RSV is slightly elevated at 3.0% in week 40. There has been an increase in RSV positivity amongst the <5 year olds at 9.4% in week 40, the positivity in all other age groups was below 2% (Figure 13)

Rhinovirus positivity was elevated at 17.8% in week 40. Adenovirus, parainfluenza and human metapneumovirus (hMPV) positivity remained low (Figure 14).



*The Moving Epidemic Method has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity in a standardised approach across Europe. The threshold to indicate a likelihood of influenza community circulation for Datamart % positive as calculated through the Moving Epidemic Method is 8.6% in 2017/18.

- 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 40 2018, 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 40 2018, no influenza viruses were tested for antiviral susceptibility.

- Antimicrobial susceptibility

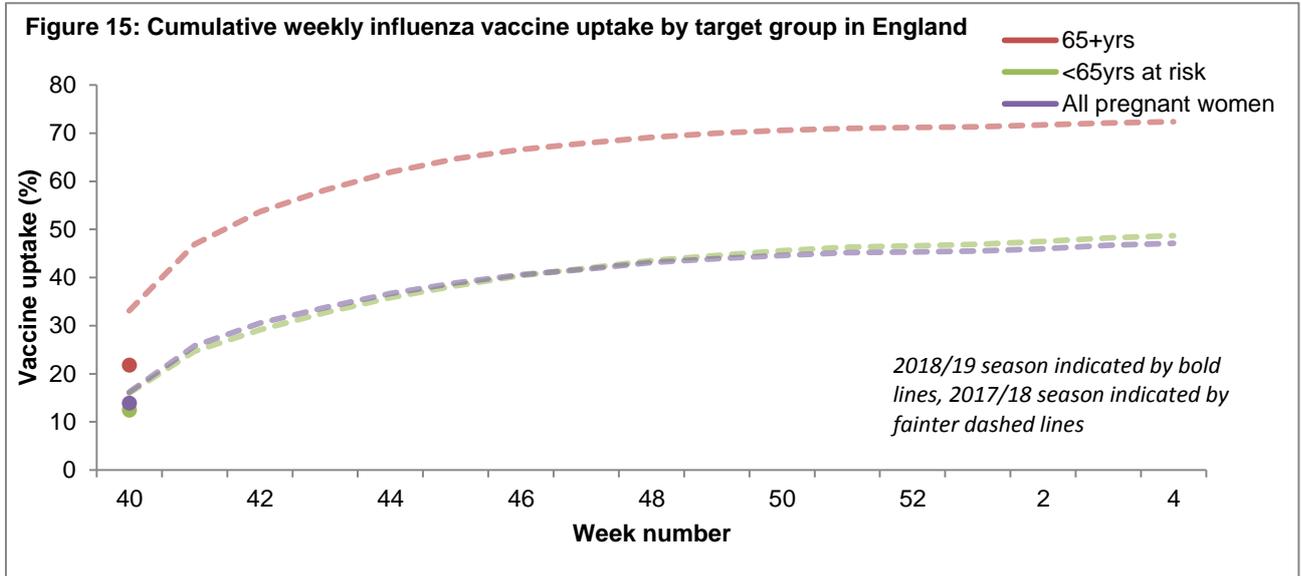
-Table 4 shows in the 12 weeks up to 07 October 2018, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired pneumonia (CAP) and the choice of antibiotics reflects the British Thoracic Society empirical guidelines for management of CAP in adults.

Table 4: Antimicrobial susceptibility surveillance in lower respiratory tract isolates, 12 weeks up to 07 October 2018, E&W

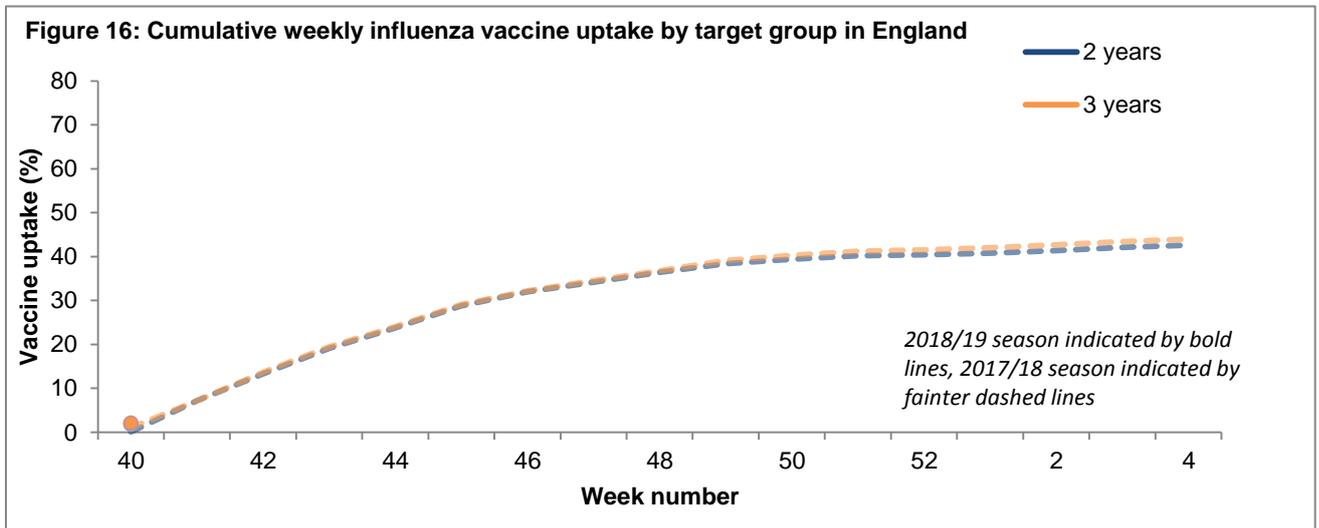
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	2492	89
	Macrolides	2728	82
	Tetracycline	2670	84
<i>H. influenzae</i>	Amoxicillin/ampicillin	11283	69
	Co-amoxiclav	12070	83
	Macrolides	2851	4
	Tetracycline	12087	98
<i>S. aureus</i>	Methicillin	5861	90
	Macrolides	6497	66
MRSA	Clindamycin	411	45
	Tetracycline	558	80
MSSA	Clindamycin	3746	78
	Tetracycline	4865	93

*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 40 2018 in 41.1% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2018/19 influenza vaccine in targeted groups was as follows (Figure 15):
 - 12.5% in under 65 years in a clinical risk group
 - 13.9% in pregnant women
 - 21.8% in 65+ year olds



- In 2018/19, all 2 and 3 year-olds continue to be eligible for flu vaccination, through their GPs. Up to week 40 2018 in 41.1% of GP practices reporting weekly to Immform, the provisional proportion of children in England who had received the 2017/18 influenza vaccine in targeted groups was as follows (Figure 16):
 - 1.8% in 2 year olds
 - 2.1% in 3 year olds



- In addition, the childhood programme has been extended to children of school years Reception (4 year olds), 1, 2, 3, 4 and 5 age. The data for the school programme, including 4 year olds, will be included in the monthly report to be published on 22 November 2018.

In the temperate zone of the Southern hemisphere, influenza activity remained elevated in South America and continued to decrease in Southern Africa. Influenza activity remained at low seasonal levels in Australia and New Zealand. In the temperate zone of the northern hemisphere influenza activity was at inter-seasonal levels. Decreased influenza activity was reported in most countries of tropical America. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections

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

This is the last report for the 2017-2018 season. Flu News Europe will begin weekly reporting of the influenza situation as of reporting week 40 2018.

Influenza was at out-of-season levels in all countries during week 35-39/2018

Of 65 specimens from primary health care settings, none tested positive for influenza virus.

- [United States of America](#) updated on 29 September 2018 (Centre for Disease Control report)

During week 39, influenza activity was low in the United States.

Nationwide, the proportion of outpatient visits for influenza-like illness (ILI) was 1.2%, which is below the national baseline of 2.2%.

One influenza-associated pediatric death was reported to CDC during week 39. The death occurred during week 38 and was associated with influenza B virus.

- [Canada](#) updated on 08 September 2018 (Public Health Agency report)

Overall, influenza activity remains at inter-seasonal levels across the country, with the majority of regions reporting no influenza activity.

All indicators of influenza activity were at low levels.

Influenza A was the most common influenza virus circulating.

- [Global influenza update](#) updated on 01 October 2018 (WHO website)

In the temperate zone of the Southern hemisphere, influenza activity remained elevated in South America and continued to decrease in Southern Africa. Influenza activity remained at low seasonal levels in Australia and New Zealand. In the temperate zone of the northern hemisphere influenza activity was at inter-seasonal levels. Decreased influenza activity was reported in most countries of tropical America. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections

In temperate South America, influenza and respiratory syncytial virus (RSV) activity decreased in most countries of the sub region. In Chile and Paraguay, influenza activity appeared to have peaked. Influenza and severe acute respiratory infection (SARI) levels remained elevated in Uruguay, with all seasonal influenza subtypes co-circulating.

In Southern Africa, in the recent weeks a second wave of influenza activity was reported with influenza B virus (both lineages) most frequently detected.

In Oceania, influenza activity increased in Australia but remained generally low. In New Zealand, influenza activity remained below seasonal threshold. Influenza A(H1N1)pdm09 was the most frequently detected influenza virus.

In the Caribbean, influenza detections and RSV activity remained low in general. In Central American countries, influenza activity increased in El Salvador and Nicaragua, with influenza A(H1N1)pdm09 virus predominantly detected. RSV activity remained elevated in Guatemala and Panama.

In the tropical countries of South America, influenza and RSV activity were low in most of the countries, though RSV continued to increase in Peru.

In Western Africa, influenza activity remained low across reporting countries. In Middle Africa, increased detections of influenza A(H3N2) were reported in Central African Republic. In Eastern Africa, influenza detections remained low in reporting countries.

In Southern Asia, influenza activity remained low across reporting countries with the exception of India where were influenza A(H1N1)pdm09 detections increased.

In South East Asia, influenza activity continued to be reported in some countries. A decrease in influenza detections was reported in Cambodia and the Philippines.

The WHO GISRS laboratories tested more than 68,731 specimens between 03 September 2018 and 16 September 2018. 2,512 were positive for influenza viruses, of which 2,120 (84.4%) were typed as influenza A and 392 (15.6%) as influenza B. Of the sub-typed influenza A viruses, 1,104 (65.3%) were influenza A (H1N1)pdm09 and 586 (34.7%) were influenza A (H3N2). Of the characterized B viruses, 54 (55.1%) belonged to the B-Yamagata lineage and 44 (44.9%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 20 July 2018 (WHO website)

Influenza A(H5) viruses

Between [29 May 2018 and 20 July 2018](#), no new laboratory-confirmed human case of influenza A(H5) virus infection were reported to WHO.

According to reports received by the World Organisation for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in Africa, Europe and Asia. Influenza A(H5N6) viruses have recently been detected in parts of Europe and Asia, however these A(H5N6) viruses are different from the A(H5N6) influenza viruses which have infected humans in China

Influenza A(H7N9)

Between [29 May 2018 and 20 July 2018](#) no new laboratory-confirmed human case of influenza A(H7N9) have been reported to WHO

According to reports received by the World Organisation for Animal Health (OIE), A(H7N9) avian influenza viruses continue to be detected by agricultural authorities in China. A nationwide domestic poultry vaccination plan is underway.

Since 2013, a total of 1,567 laboratory-confirmed cases of human infection with avian influenza A(H7N9) viruses, including at least 615 deaths, have been reported to WHO.

Influenza A (H3N2) variant viruses

On 30 June 2018, the U.S IHR National Focal Point reported the first case of human infection with an influenza(H3N2)v virus in 2018.

Since 2011, 427 human infections with influenza A(H3N2)v viruses have been reported to the U.S. CDC. Most cases are associated with mild illness, although several have been hospitalised and 1 has been reported

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 10 October 2018

Up to 10 October 2018, a total of five cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (three imported and two linked cases) have been confirmed in the UK. On-going surveillance has identified 1,322 suspected cases in the UK that have been investigated for MERS-CoV and tested negative.

Between [01 June 2018 and 16 September 2018](#), the National IHR Focal Point of The Kingdom of Saudi Arabia reported 32 additional cases of Middle East Respiratory Syndrome (MERS), including 10 deaths.

Globally, since September 2012 through to 16 September 2018, WHO has been notified of 2,254 laboratory-confirmed cases of infection with MERS-CoV, including 800 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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This report was prepared by the Influenza section, Immunisations and Countermeasures Division, Centre for Infectious Disease Surveillance and Control, 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

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Sources of flu data

- [Clinical surveillance through primary care in the UK](#)
- [Outbreak reporting](#)
- [FluSurvey](#)
- [MOSA](#)
- [Real time syndromic surveillance](#)
- MEM threshold [methodology paper](#) and [UK pilot paper](#)

Disease severity and mortality data

- [USISS](#) system
- [EuroMOMO](#) mortality project

Vaccination

- Seasonal influenza vaccine programme ([Department of Health Book](#))
- Childhood flu programme information for healthcare practitioners ([Public Health England](#))
- 2018/19 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))