



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

**At the start of the 2016/17 influenza season, activity is at low levels in week 40 (ending 09 October 2016).**

- [Community influenza surveillance](#)
  - Six new acute respiratory outbreaks have been reported in the past 7 days. Five outbreaks were from care homes with no test results available and one outbreak was from a hospital with no test results available.
- [Overall weekly influenza GP consultation rates across the UK](#)
  - In week 40, the overall weekly influenza-like illness (ILI) GP consultation rate is 7.7 per 100,000 in England and is below the baseline threshold. In the devolved administrations, ILI rates are low.
  - Through the GP In Hours surveillance system, GP consultations for ILI are increasing.
- [Influenza-confirmed hospitalisations](#)
  - No admissions to ICU/HDU with confirmed influenza were reported across the UK (129 Trusts) through the USISS mandatory ICU scheme in week 40.
  - One new hospitalised confirmed influenza case (influenza A(H3N2)) was reported through the USISS sentinel hospital network (16 NHS Trusts across England) in week 40, a rate of 0.02 per 100,000.
  - No confirmed influenza admissions have been reported from the six Severe Respiratory Failure centres in the UK in week 40.
- [All-cause mortality data](#)
  - In week 40 2016, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England overall and by age group and across the devolved administrations.
- [Microbiological surveillance](#)
  - One sample tested positive for influenza (influenza B) through GP sentinel schemes across the UK, with an overall positivity of 1.1%.
  - Four influenza positive detections were recorded through the DataMart scheme (1 A(H1N1)pdm09, 1 A(H3N2), 1 A(not subtyped) and 1 influenza B). A positivity of 0.6% was seen in week 40, with the highest positivity seen in the 5-14 year olds (4.1%). This is below the all-age threshold for 2015/16 season of 8.6%.
- [Vaccination](#)
  - Up to week 40 2016, in 89.3% GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows: 18.2% in under 65 years in a clinical risk group, 18.3% in pregnant women, 33.6% in 65+ year olds, 4.9% in all 2 year olds, 5.5% in all 3 year olds and 4.0% in all 4 year olds.
- [International situation](#)
  - Influenza activity is low and at inter-seasonal levels in the Northern Hemisphere but showing signs of decreasing in the Southern hemisphere.

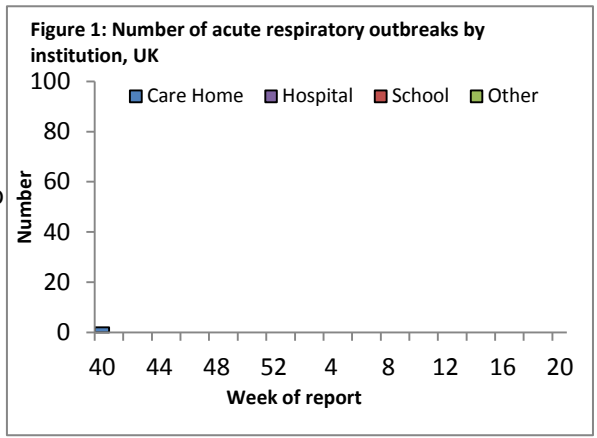
**During week 40, GP respiratory indicators increased but remain within seasonally expected levels. Six new acute respiratory outbreaks were reported in the past 7 days.**

- PHE Real-time Syndromic Surveillance

- During week 40 GP consultations for respiratory conditions including upper and lower respiratory tract infections continued to increase, but remain within seasonally expected levels.
- For further information, please see the syndromic surveillance [webpage](#).

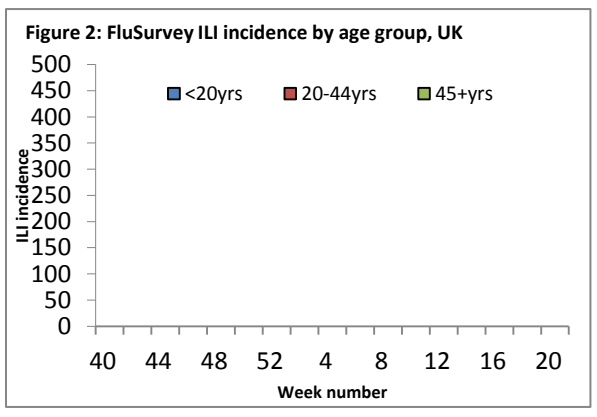
- Acute respiratory disease outbreaks

- Six new acute respiratory outbreaks have been reported in the past 7 days. Five outbreaks were from care homes where no test results were available. One outbreak was from a hospital but no test result was available.
- Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and [Respscidsc@phe.gov.uk](mailto:Respscidsc@phe.gov.uk).



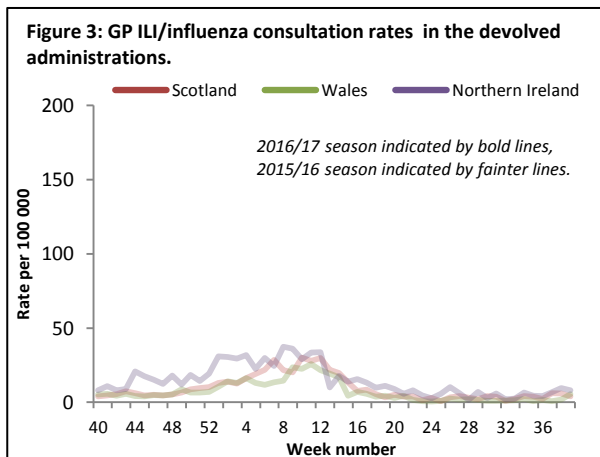
- FluSurvey

- Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey. A project run jointly by PHE and the London School of Hygiene and Tropical Medicine.
- Data is expected later in the season.
- If you would like to become a participant of the FluSurvey project please do so by visiting the <http://flusurvey.org.uk> website for more information.



**In week 40, overall weekly influenza-like illness GP consultations were low in England, Wales, Northern Ireland and Scotland.**

- Influenza/Influenza-Like-Illness (ILI)



Northern Ireland

- The Northern Ireland influenza consultation rate was at 12.2 per 100,000 in week 40 (Figure 3).
- The highest rates were seen in the 15-44 year olds (22.8 per 100,000) and 75+ year olds (15.7 per 100,000).

### Wales

-The Welsh influenza rates were not available for week 40.

### Scotland

-The Scottish ILI rate was at 7.7 per 100,000 in week 40 (Figure 3). This remains below baseline threshold (36.1 per 100,000).

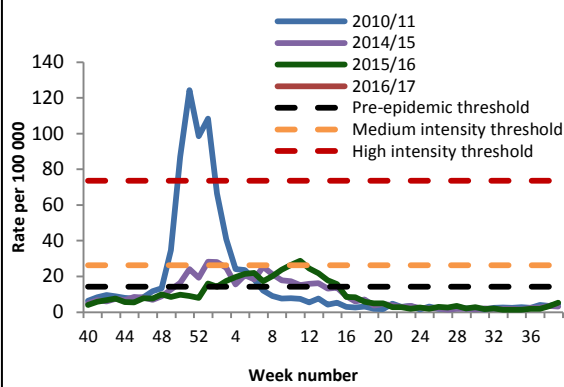
-The highest rates were seen in 15-44 year olds (10.5 per 100,000) and 45-64 year olds (9.1 per 100,000).

### RCGP (England and Wales)

- The weekly ILI consultation rate through the RCGP surveillance is 7.7 per 100,000 in week 40. This is below the baseline threshold (14.3 per 100,000) (Figure 4\*). By age group, the highest rates were seen in 15-44 year olds (9.9 per 100,000) and 75+ year olds (8.1 per 100,000).

*\*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.*

Figure 4: RCGP ILI consultation rates , England and Wales



### GP In Hours Syndromic Surveillance System (England)

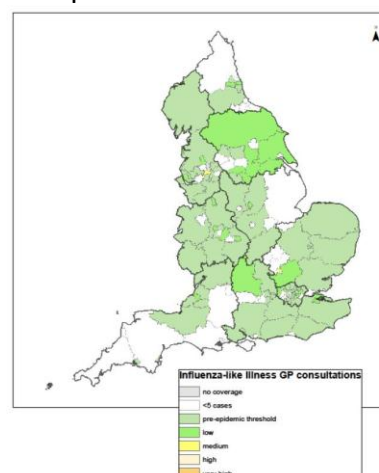
-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system has decreased at 4.9 per 100,000 in week 40 (Figure 5).

Figure 5 represents a map of GP ILI consultation rates in Week 40 across England by Local Authorities, using influenza-like illness surveillance thresholds.

*Thresholds are calculated using a standard methodology for setting ILI thresholds across Europe (the "Moving Epidemic Method" (MEM)) and are based on six previous influenza seasons (excluding the 2009/10 H1N1 pandemic)*

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

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



## Influenza confirmed hospitalisations

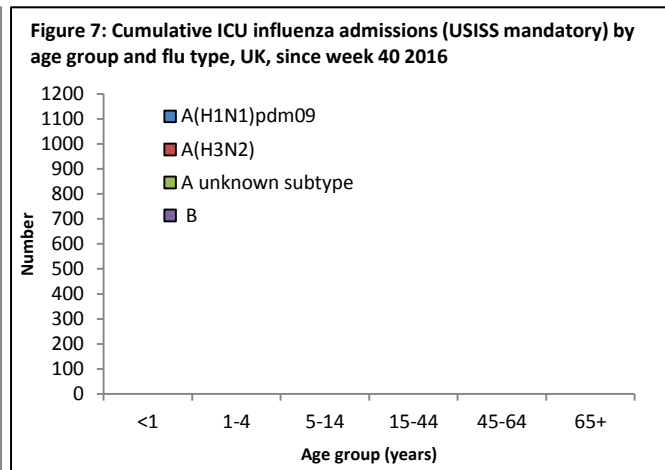
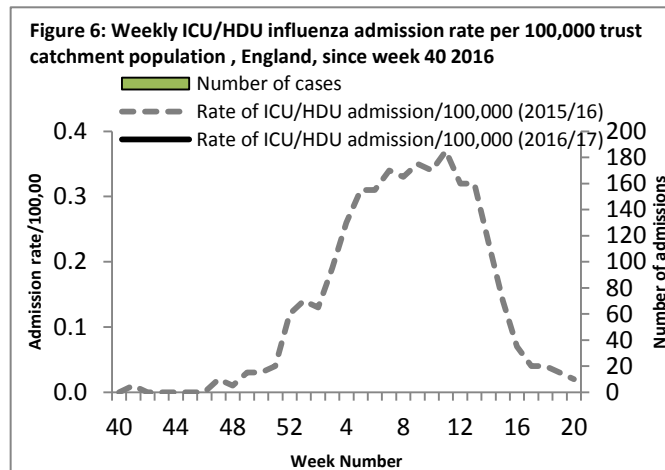
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**In week 40, there were no admissions to ICU/HDU with confirmed influenza reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (129 Trusts). One new hospitalised confirmed influenza case (influenza A(H3N2) was reported through the USISS sentinel hospital network across England (17 Trusts).**

A national mandatory collection (USISS mandatory ICU scheme) is operating in cooperation with the Department of Health to report the number of confirmed influenza cases admitted to Intensive Care Units (ICU) and High Dependency Units (HDU) and number of confirmed influenza deaths in ICU/HDU across the UK. A confirmed case is defined as an individual with a laboratory confirmed influenza infection admitted to ICU/HDU. In addition a sentinel network (USISS sentinel hospital network) of acute NHS trusts is established in England to report weekly laboratory confirmed hospital admissions. Further information on these systems is available through the [website](#). Please note data in previously reported weeks are updated and so may vary by week of reporting.

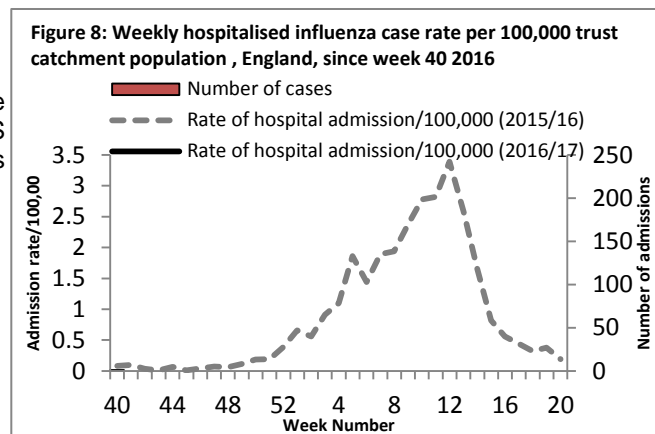
- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 40)

- In week 40, there were no admissions to ICU/HDU with confirmed influenza reported across the UK (129/156 Trust) through the USISS mandatory ICU scheme (Figures 6 and 7).



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

- In week 40, one hospitalised confirmed influenza case (influenza A(H3N2)) was reported through the USISS sentinel hospital network from 16 NHS Trusts across England (Figure 8), a rate of 0.02 per 100,000.



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

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

### All-cause mortality data

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**In week 40, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England. In the devolved administrations, no significant excess mortality was noted in week 40 2016.**

Seasonal mortality is seen each year in the UK, with a higher number of deaths in winter months compared to the summer. Additionally, peaks of mortality above this expected higher level typically occur in winter, most commonly the result of factors such as cold snaps and increased circulation of respiratory viruses, in particular influenza. Weekly mortality surveillance presented here aims to detect and report acute significant weekly excess mortality above normal seasonal levels in a timely fashion. Excess mortality is defined as a significant number of deaths reported over that expected for a given point in the year, allowing for weekly variation in the number of deaths. The aim is not to assess general mortality trends or precisely estimate the excess attributable to different factors, although some end-of-winter estimates and more in-depth analyses (by age, geography etc.) are undertaken.

- Excess overall all-cause mortality, England and Wales

-- In week 39 2016, an estimated 8,994 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a slight increase compared to the 8,945 estimated death registrations in week 38 2016.

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

-In week 40 2016 in England, no excess mortality by date of death above the upper 2 z-score threshold was seen in England after correcting ONS disaggregate data for reporting delay with the standardised [EuroMoMo](#) algorithm (Table 1). No significant excess was seen in any age groups or subnationally. This data is provisional due to the time delay in registration; numbers may vary from week to week.

- In the devolved administrations, no significant excess mortality above the threshold was seen in week 40 2016 (Table 2).

**Table 1: Excess mortality by age group, England\***

Age group (years)	Excess detected in week 40 2016?	Weeks with excess in 2016/17
<5	x	NA
5-14	x	NA
15-64	x	NA
65+	x	NA

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

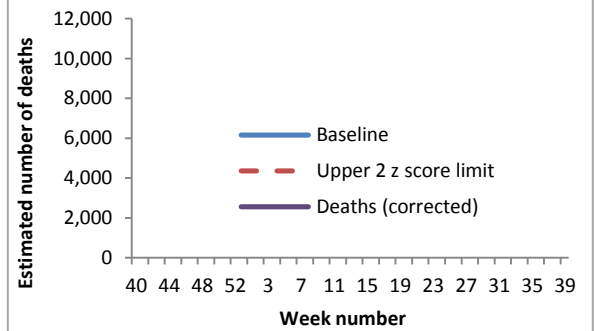
**Table 2: Excess mortality by UK country\***

Country	Excess detected in week 40 2016?	Weeks with excess in 2016/17
England	x	NA
Wales	x	NA
Scotland	x	NA
Northern Ireland	-	-

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

NB. Separate total and age-specific models are run for England which may lead to discrepancies between Tables 1 + 2

**Figure 9: Excess mortality in all ages by week of death, EuroMOMO, England**



## Microbiological surveillance

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**In week 40 2016, one sample tested for influenza through the UK GP sentinel schemes was positive. Thirty-two positive detections were recorded through the DataMart scheme (4 A(H1N1)pdm09, 2 A(H3), 3 A(not subtyped) and 23 influenza B).**

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

-In week 40, one sample tested positive for influenza through the UK GP sentinel swabbing schemes, an overall positivity of 1.1%. The sample tested positive for influenza B (Table 3).

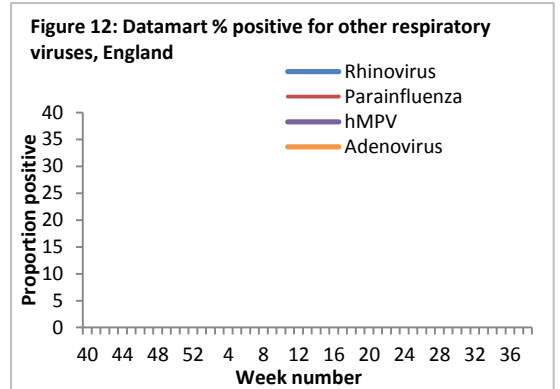
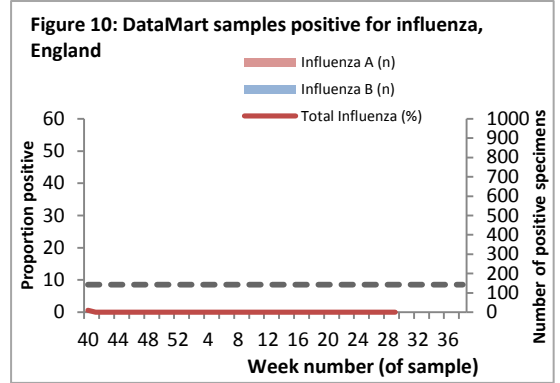
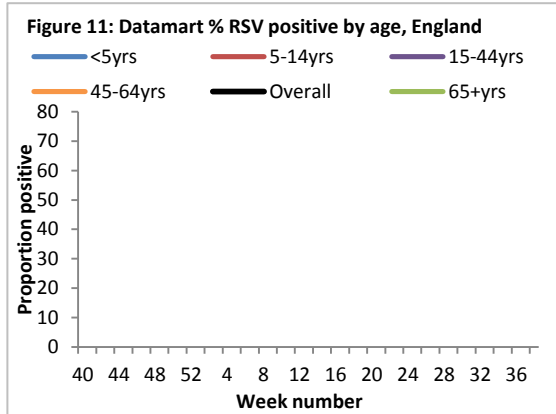
**Table 3: Sentinel influenza surveillance in the UK**

Week	England	Scotland	Northern Ireland	Wales
40	0/42 (0%)	1/46 (2.2%)	0/2 (-)	0/0 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 40 2016, out of the 695 respiratory specimens reported through the Respiratory DataMart System, four samples (0.6%) were positive for influenza (1 A(H1N1)pdm09, 1 A(H3N2), 1 A(not subtyped) and 1 B) (Figure 10). The highest positivity was in the 5-14 year olds at 4.1%. The overall positivity for RSV remained low at 1.9% in week 40 (Figure 11). Positivity for rhinovirus remained high at 24.6%. Positivities for other viruses were low, parainfluenza at 1.1%; adenovirus at 3.1% and hMPV at 0.9% (Figure12).



\*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 2016/17.

- Virus characterisation

In week 40 2016, no influenza viruses were isolated or characterised by PHE Respiratory Virus Unit (RVU).

- Antiviral susceptibility

Since week 40 2016, no influenza samples have been tested for oseltamivir and zanamivir susceptibility.

- Antimicrobial susceptibility

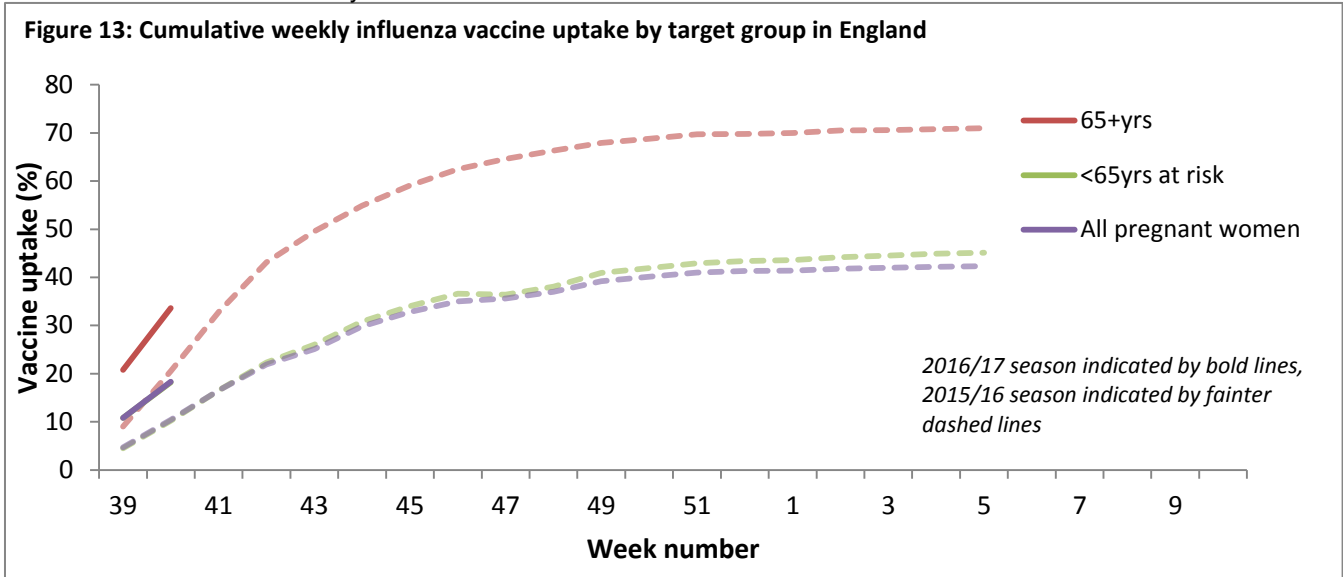
-Table 4 shows in the 12 weeks up to 09 October 2016, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired 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 09 October 2016, E&W

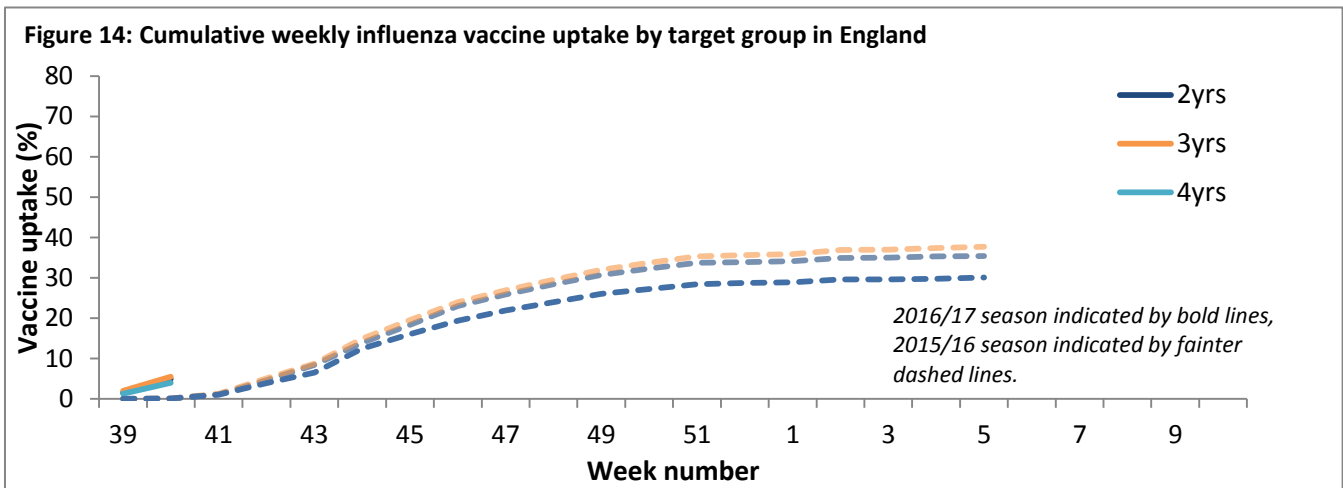
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	2,294	89
	Macrolides	2,564	81
	Tetracycline	2,504	82
<i>H. influenzae</i>	Amoxicillin/ampicillin	11,606	72
	Co-amoxiclav	11,841	89
	Macrolides	4,719	13
<i>S. aureus</i>	Tetracycline	11,671	98
	Methicillin	5,270	92
	Macrolides	5,578	71
MRSA	Clindamycin	285	39
	Tetracycline	435	77
MSSA	Clindamycin	2,661	79
	Tetracycline	4,415	93

\*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 40 2016 in 89.3% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows, with vaccination activity starting earlier than last season (Figure 13):
  - 18.2% in under 65 years in a clinical risk group
  - 18.3% in pregnant women
  - 33.6% in 65+ year olds



- In 2016/17, all two-, three- and four-year-olds continue to be eligible for flu vaccination. In addition, the programme has been extended to children of school years 1, 2 and 3 age. Up to week 40 2016 in 89.3% of GP practices reporting weekly to Immform, the provisional proportion of children in England who had received the 2016/17 influenza vaccine in targeted groups was as follows (Figure 14):
  - 4.9% in all 2 year olds
  - 5.5% in all 3 year olds
  - 4.0% in all 4 year olds





**Influenza activity is low and at inter-seasonal levels in the Northern Hemisphere but showing signs of decreasing in the Southern hemisphere.**

- [Europe](#) updated on 07 October 2016 (Joint ECDC-WHO Influenza weekly update)

In week 36-39/2016, influenza activity in the WHO European Region has remained at low levels with all countries reporting low intensity.

During weeks 36–39/2016, only one sentinel-source specimen tested positive for influenza virus.

For weeks 36–39/2016, 10 countries or regions in the eastern part of the Region reported data on cases of severe acute respiratory infection (SARI) from sentinel systems, with no influenza virus detected.

- [United States of America](#) updated on 07 October 2016 (Centre for Disease Control report)

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

Nationwide during week 39, the proportion of outpatient visits for influenza-like illness (ILI) was 1.3%, which is below the national baseline of 2.1%.

During week 39, 5.7% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 5.8% for week 39.

- [Canada](#) updated on 30 September 2016 (Public Health Agency report)

Influenza activity is at inter-seasonal levels with the majority regions of Canada reporting low or no influenza activity.

In week 38, localized activity was reported in three regions across three provinces (BC, AB, and ON).

A total of 73 positive influenza detections were reported in weeks 37 and 38; influenza A(H3N2) was the most common subtype detected.

In week 38, 1% of visits to sentinel healthcare professionals were due to ILI.

The first laboratory-confirmed influenza outbreak this season was reported in week 37. A total of five outbreaks were reported in weeks 37 and 38.

Low numbers of hospitalizations were reported in weeks 37 and 38.

- [Global influenza update](#) updated on 03 October 2016 (WHO website)

Influenza activity varied in countries of temperate South America was ongoing in South Africa and decreased in Oceania. Influenza activity in the temperate zone of the northern hemisphere was at inter-seasonal levels.

In temperate South America, influenza and respiratory syncytial virus (RSV) activity decreased throughout most of the sub-region. In Chile, influenza-like illness (ILI) and laboratory confirmed influenza and RSV virus detections remained elevated; influenza A(H1N1)pdm09 was predominant with co-circulation of A(H3N2)viruses and influenza B viruses. In Paraguay, ILI and severe acute respiratory infection (SARI) cases remained elevated. Respiratory syncytial virus activity remained elevated in the region.

In South Africa, influenza detections continued, with mainly influenza A(H1N1)pdm09 virus detections following a predominance of influenza B and then A(H3N2) viruses earlier in the season.

In Oceania, influenza virus activity decreased in the last weeks. Influenza A(H3N2) remained the dominant circulating influenza virus. In Australia, activity decreased but was still high, while in New Zealand ILI consultation rates remained below the seasonal baseline level.

In the Caribbean countries, influenza and other respiratory virus activity remained low throughout most of the sub-region. The exception was Cuba with a slight increase of influenza B virus detections in the recent weeks. In Central America, influenza virus activity remained low but in most of the countries, detections of non-influenza respiratory viruses stayed elevated with RSV predominating.

In tropical South America, influenza A(H1N1)pdm09 and RSV virus detections generally decreased in recent weeks or remained low in most of the countries. In Colombia, influenza activity remained low while RSV activity increased. In Peru, influenza activity continued to decrease, with influenza A(H1N1)pdm09 and influenza B viruses co-circulating.

In West, Central and temperate East Asia, influenza activity remained low. In tropical countries of South Asia, influenza activity was generally low with seasonal influenza A and B viruses co-circulating in the region.



In South East Asia, there was a decreasing trend in influenza detection in recent weeks, although some countries in the region reported ongoing activity of co-circulating seasonal influenza A and B viruses.

Sporadic cases of influenza A(H3N2) and influenza B virus infection were reported by northern, middle and western Africa in recent weeks, among the few countries reporting data during this period. In East Africa, Madagascar continued to report influenza B detections.

In North America and Europe, influenza activity was low with few influenza virus detections. ILI levels were below seasonal thresholds. In the United States, other respiratory virus activity increased with RSV predominating.

Influenza activity was low in temperate Asia.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 44,178 specimens between 05 September 2016 and 18 September 2016. 2,763 were positive for influenza viruses, of which 2,260 (81.8%) were typed as influenza A and 503 (18.2%) as influenza B. Of the sub-typed influenza A viruses, 246 (12.0%) were influenza A(H1N1)pdm09 and 1,812 (88.0%) were influenza A(H3N2). Of the characterized B viruses, 31 (24.6%) belonged to the B-Yamagata lineage and 95 (75.4%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 03 October 2016 (WHO website)

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

Since 2003, a total of 856 laboratory-confirmed cases of human infection with avian influenza A(H5N1) virus, including 452 deaths, have been reported to WHO from 16 countries. Although other influenza A(H5) viruses have the potential to cause disease in humans, no human cases have been reported so far. According to reports received by the World Organisation for Animal Health (OIE), various influenza A(H5) subtypes, such as influenza A(H5N1), A(H5N2), A(H5N6), A(H5N8) and A(H5N9), continue to be detected in birds in West Africa, Europe and Asia.

### **Influenza A(H7N9)**

Since the last update on 19 July 2016, China reported five laboratory-confirmed human cases of A(H7N9) virus infection to WHO on [11 August 2016](#), including one fatal case. One cluster of three cases was reported for which the possibility of human-to-human transmission for two cases in the cluster cannot be excluded.

A total of 798 laboratory-confirmed cases of human infection with avian influenza A(H7N9) viruses, including at least 320 deaths, have been reported to WHO.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 21 September 2016

Between [23 August and 11 September 2016](#) the National IHR Focal Point of Saudi Arabia reported five (5) additional cases of Middle East Respiratory Syndrome (MERS).

Up to 12 October 2016, a total of four cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (two imported and two linked cases) have been confirmed in the UK. On-going surveillance has identified 861 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

Globally, since September 2012, WHO has been notified of 1,806 laboratory-confirmed cases of infection with MERS-CoV, including at least 643 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 low.

## **Acknowledgements**

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This report was prepared by the Influenza section, Respiratory Diseases Department, 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, NHS Direct, 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<sup>®</sup> and EMIS and EMIS practices contributing to the QSurveillance<sup>®</sup> database.

## **Related links**

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### **Weekly consultation rates in national sentinel schemes**

- [Sentinel schemes operating across the UK](#)
- [RCGP scheme](#)
- Northern Ireland surveillance ([Public Health Agency](#))
- Scotland surveillance ([Health Protection Scotland](#))

- Wales surveillance ([Public Health Wales](#))
- [Real time syndromic surveillance](#)
- MEM threshold [methodology paper](#) and [UK pilot paper](#)

#### **Community surveillance**

- [Outbreak reporting](#)
- [FluSurvey](#)
- [MOSA](#)

#### **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](#))
- 2016/17 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))