



This report is published weekly on the [PHE website](#). For further information on the surveillance schemes mentioned in this report, please see the [PHE website](#) and the [related links](#) at the end of this document.

| [Summary](#) | [Community surveillance](#) | [GP consultation rates](#) | [Hospitalisations](#) | [All-cause mortality](#) | [Microbiological surveillance](#) | [Vaccination](#) | [International](#) | [Acknowledgements](#) | [Related links](#) |

Summary

At the start of the 2015/16 influenza season, activity is at low levels in week 42 (ending 18 October)

- [Community influenza surveillance](#)
 - In week 42 all respiratory syndromic indicators were within seasonally expected levels.
 - Seven new acute respiratory outbreaks have been reported in the past seven days: six in care homes (1 tested positive for rhinovirus and 1 for influenza A, other results were not available), and one in a hospital (testing positive for influenza A).
- [Overall weekly influenza GP consultation rates across the UK](#)
 - In week 42 overall weekly influenza-like illness GP consultations were low in England, Wales, Northern Ireland and Scotland and through the GP In Hours Surveillance system.
- [Influenza-confirmed hospitalisations](#)
 - Two new admissions to ICU/HDU with confirmed influenza (one influenza A(H1N1)pdm09 and one influenza A unknown subtype) were reported through the USSS mandatory ICU/HDU surveillance scheme across the UK (118 Trusts in England) in week 42, a rate of 0.01 compared to 0.01 per 100,000 the previous week.
 - Two new hospitalised confirmed influenza cases (two influenza A(H1N1pdm09)) were reported through the USSS sentinel hospital network across England (20 Trusts), a rate of 0.03 compared to 0.12 per 100,000 the previous week.
- [All-cause mortality data](#)
 - In week 42 2015, 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 through the English GP sentinel schemes.
 - 10 influenza positive detections were recorded through the DataMart scheme (4 influenza A(H1N1)pdm09, 2 influenza A(H3), 1 influenza A(not-subtyped) and 3 influenza B).
- [Vaccination](#)
 - Up to week 42 2015 in 86.9% GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2015/16 influenza vaccine in targeted groups was as follows: 22.3% in under 65 years in a clinical risk group, 21.9% in pregnant women, 43.1% in 65+ year olds, 4.6% in all 2 year olds, 5.1% in all 3 year olds and 3.9% in all 4 year olds.
- [International situation](#)
 - Globally, influenza activity generally decreased or remained low, with only a few countries reporting elevated respiratory illness levels. Influenza activity in the northern hemisphere continued at low, inter-seasonal levels with sporadic detections.

In week 42, respiratory indicators remained stable in line with seasonal expectations and six new acute respiratory outbreaks were reported in the last seven days.

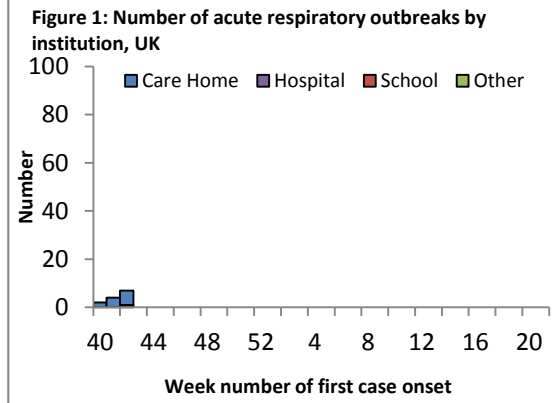
- PHE Real-time Syndromic Surveillance

-In week 42, respiratory indicators have remained stable in line with seasonal expectations. Acute respiratory infection indicators have continued to increase, particularly in those aged <1 year and 1-4 years.
 -For further information, please see the syndromic surveillance [webpage](#).

- Acute respiratory disease outbreaks

- Seven new acute respiratory outbreaks have been reported in week 42, six in care homes (1 tested positive for rhinovirus and 1 for influenza A, other results not available), and one in hospital (testing positive for influenza A).

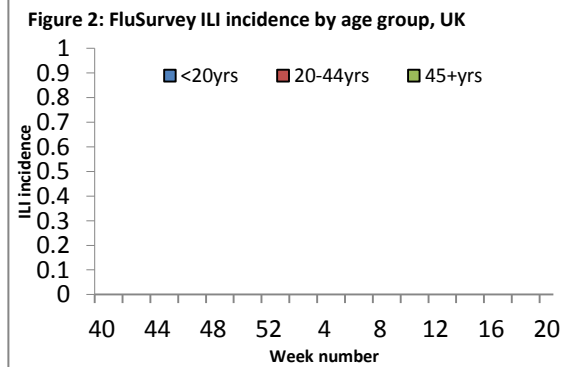
-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and Respscidsc@phe.gov.uk.



- FluSurvey

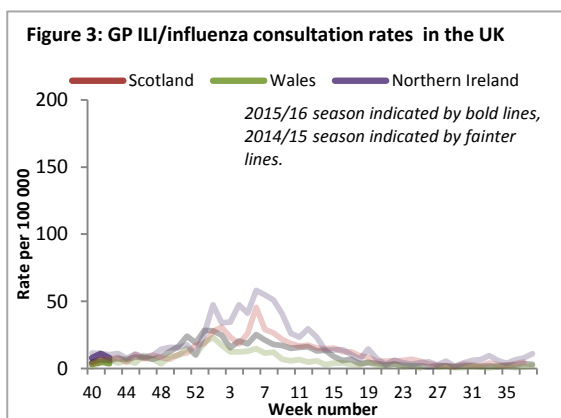
-Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey project (<http://flusurvey.org.uk>) run by the London School of Hygiene and Tropical Medicine.

-Data is expected later in the season.



Weekly consultation rates in national sentinel schemes

In week 42 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 low at 8.0 per 100,000 in week 42 (Figure 3) and below the pre-epidemic threshold (49 per 100,000).

-The highest rates were seen in 65-74 year olds (11.3 per 100,000), 45-64 year olds (9.6 per 100,000) and 15-44 year olds (8.8 per 100,000).

Wales

- The Welsh influenza rate was low at 4.0 per 100,000 in week 42 (Figure 3).
- The highest rates were seen in 45-64 year olds (7.5 per 100,000) and 65-74 year olds (5.0 per 100,000).

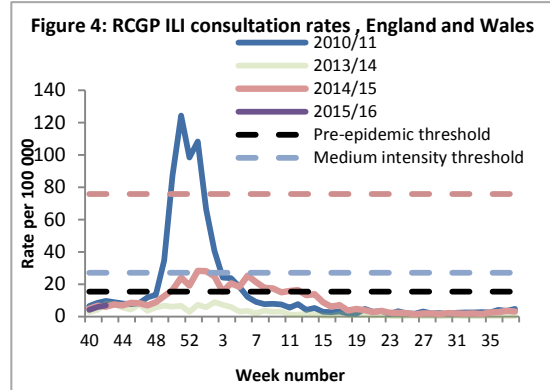
Scotland

- The Scottish ILI rate was low at 5.5 per 100,000 in week 42 (Figure 3) and below the pre-epidemic threshold (37 per 100,000).
- The highest rates were seen in 75+ year olds (10.8 per 100,000) and under 1 year olds (8.1 per 100,000).

RCGP (England and Wales)

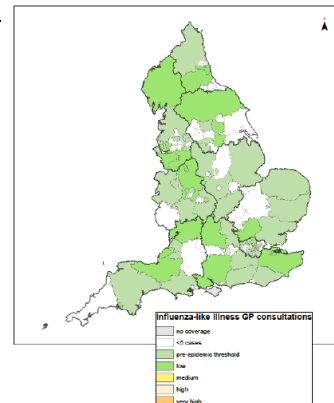
-The weekly ILI consultation rate through the RCGP surveillance system was low at 6.7 in week 42 (Figure 4*). By age group, the highest rate was seen in 15-44 year olds (8.5 per 100,000).

**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. The threshold to indicate a likelihood of influenza community circulation for as calculated through the Moving Epidemic Method is 15 per 100,000.*



GP In Hours Syndromic Surveillance System (England)

- The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system was low at 5.7 per 100,000 in week 42 (Figure 5).
- For further information, please see the syndromic surveillance [webpage](#).



Influenza confirmed hospitalisations

[Back to top](#)

In week 42, two new admissions to ICU/HDU with confirmed influenza (one influenza A(H1N1)pdm09 and one influenza A unknown subtype) were reported through the national USISS mandatory ICU scheme across the UK (118 Trusts in England). Two new hospitalised confirmed influenza cases (two influenza A(H1N1pdm09)) were reported through the USISS sentinel hospital network across England (20 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 42)

-In week 42, two new admissions to ICU/HDU with confirmed influenza (one influenza A(H1N1)pdm09 and one influenza A unknown subtype) were reported across the UK (118/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 6 and 7), a rate of 0.01 per 100,000 compared to 0.01 per 100,000 the previous week. No new confirmed influenza deaths were reported in week 42 2015. A total of nine admissions (three influenza A(H1N1)pdm09, one influenza A(H3N2), four influenza A unknown subtype and one influenza B) and no confirmed influenza deaths have been reported since week 40 2015.

Figure 6: Weekly ICU/HDU influenza admission rate per 100,000 trust catchment population, England, since week 40 2015

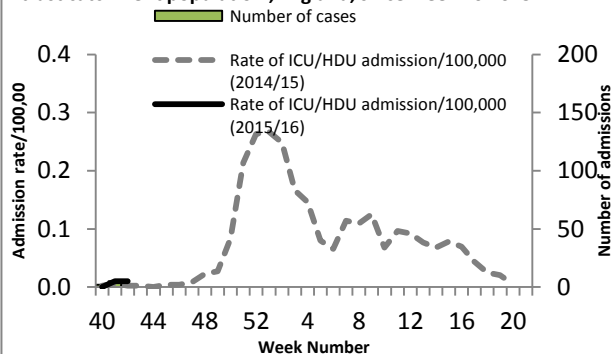
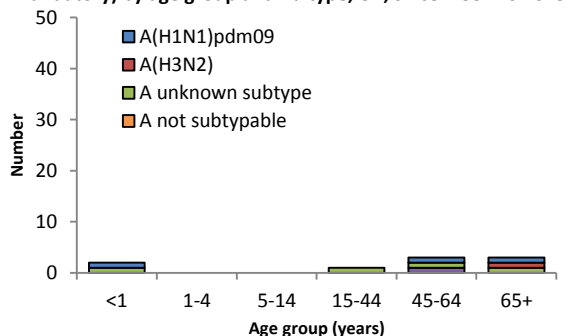


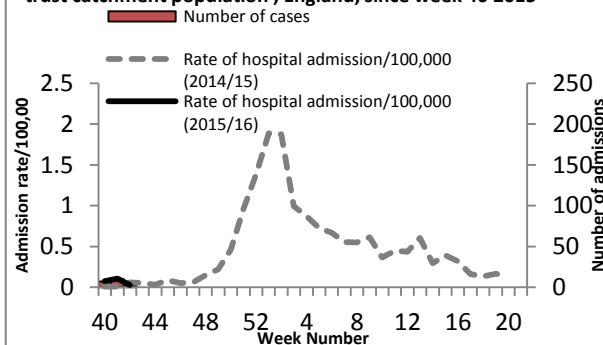
Figure 7: Cumulative ICU influenza admissions (USISS mandatory) by age group and flu type, UK, since week 40 2015



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 42)

-In week 42, two new hospitalised confirmed influenza cases (two influenza A(H1N1)pdm09) were reported through the USISS sentinel hospital network from 20 NHS Trusts across England (Figure 8), a rate of 0.03 per 100,000 compared to 0.12 per 100,000 the previous week. A total of nineteen hospitalised confirmed influenza admissions (11 A(H1N1)pdm09, three A(H3N2), four A unknown subtype and one B) have been reported since week 40.

Figure 8: Weekly hospitalised influenza case rate per 100,000 trust catchment population, England, since week 40 2015



All-cause mortality data

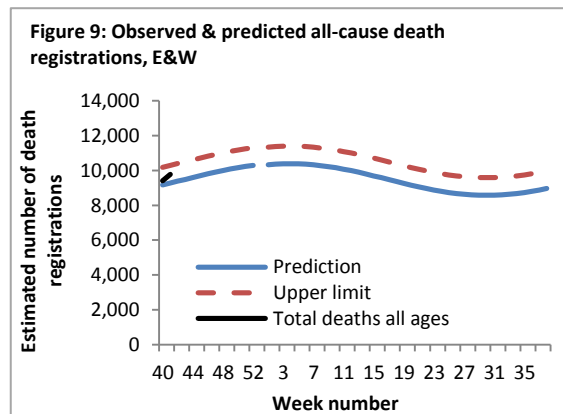
[| Back to top |](#)

In week 42 2015, 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.

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 41 2015, an estimated 9,776 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is an increase compared to the 9,410 estimated death registrations in week 40 and is below the 95% upper limit of expected death registrations for the time of year as calculated by PHE (Figure 9).



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

-In week 42 2015, 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 (Figure 10, Table 1). This data is provisional due to the time delay in registration; numbers may vary from week to week.

-No excess mortality above the threshold was seen across the Devolved Administrations in week 42 (Table 2).

Table 1: Excess mortality by age group, England*

| Age group (years) | Excess detected in week 42 2015? | Weeks with excess in 2015/16 |
|-------------------|----------------------------------|------------------------------|
| <5 | x | NA |
| 5-14 | x | NA |
| 15-64 | x | NA |
| 65+ | x | NA |

* Excess mortality is calculated as the observed minus the expected

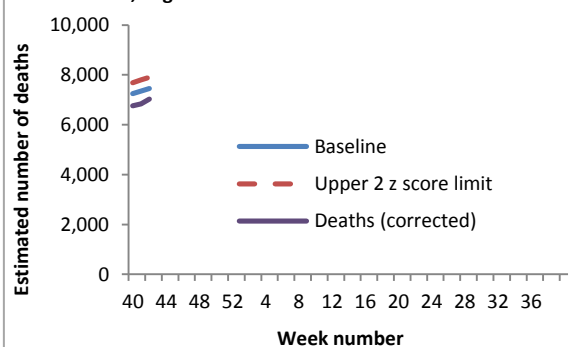
Table 2: Excess mortality by UK country*

| Country | Excess detected in week 42 2015? | Weeks with excess in 2015/16 |
|------------------|----------------------------------|------------------------------|
| England | x | NA |
| Wales | x | NA |
| Scotland | x | NA |
| Northern Ireland | x | NA |

* Excess mortality is calculated as the observed minus the

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

Figure 10: Excess mortality in 65+ year olds by week of death, EuroMOMO, England



Microbiological surveillance

[Back to top](#)

In week 42 2015, one sample tested for influenza through the English GP sentinel schemes was positive. 10 influenza positive detections were recorded through the DataMart scheme (4 influenza A(H1N1)pdm09, 2 influenza A(H3), 1 influenza A(not-subtyped) and 3 influenza B).

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

-In week 42, one sample was positive in Scotland, and none in England, Northern Ireland or Wales (Table 3).

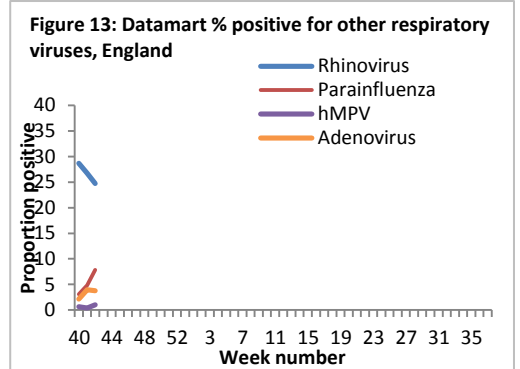
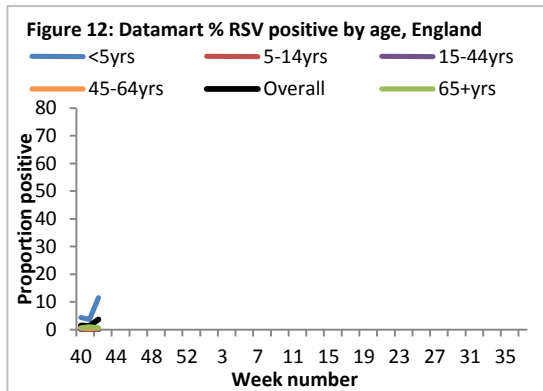
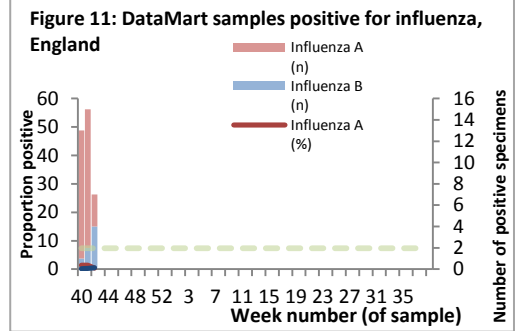
Table 3: Sentinel influenza surveillance in the UK

| Week | England | Scotland | Northern Ireland | Wales |
|------|-----------|-------------|------------------|---------|
| 40 | 1/7 (-) | 1/43 (2.3%) | 0/1 (-) | 0/0 (-) |
| 41 | 0/8 (-) | 1/52 (1.9%) | 0/2 (-) | 0/0 (-) |
| 42 | 0/20 (0%) | 1/61 (1.6%) | 0/0 (-) | 0/0 (-) |

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 42 2015, out of the 809 respiratory specimens reported through the Respiratory DataMart System, 10 samples (1.2%) were positive for influenza (2 A(H3), 1 A(not subtyped), 4 influenza A(H1N1)pdm09 and 3 flu B). Overall positivity for RSV was 3.7%; a slight increase from week 41 (1.6%). Positivity for parainfluenza increased from 4.7% in week 41 to 7.8% in week 42. Rhinovirus positivity decreased slightly (24.8%) compared to week 41(27.4%). Other respiratory viruses remained at low levels; adenovirus 3.8% and hMPV 0.4% (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 7.4% in 2015/16.

- Virus characterisation

The PHE Respiratory Virus Unit has isolated and antigenically characterised two A(H3N2) influenza viruses from week 38, prior to the start of the 2015/16 winter influenza season in week 40 2015. The two viruses were antigenically similar to the A/Switzerland/9715293/2013 H3N2 Northern Hemisphere 2015/16 vaccine strain. Genetic characterisation of the two viruses showed that they belong to genetic group 3C.2a, and are genetically similar to the majority of A(H3N2) viruses circulating in the 2014/15 season.

Nine A(H1N1)pdm09 influenza viruses have been isolated and antigenically characterised since the start of the 2015/16 winter influenza season in week 40 2015. These nine viruses were antigenically similar to the A/California/7/2009 Northern Hemisphere 2015/16 vaccine strain.

- Antiviral susceptibility

Since week 40 2015, five influenza A virus have been tested for oseltamivir susceptibility in the UK and were all found to be sensitive.

- Antimicrobial susceptibility

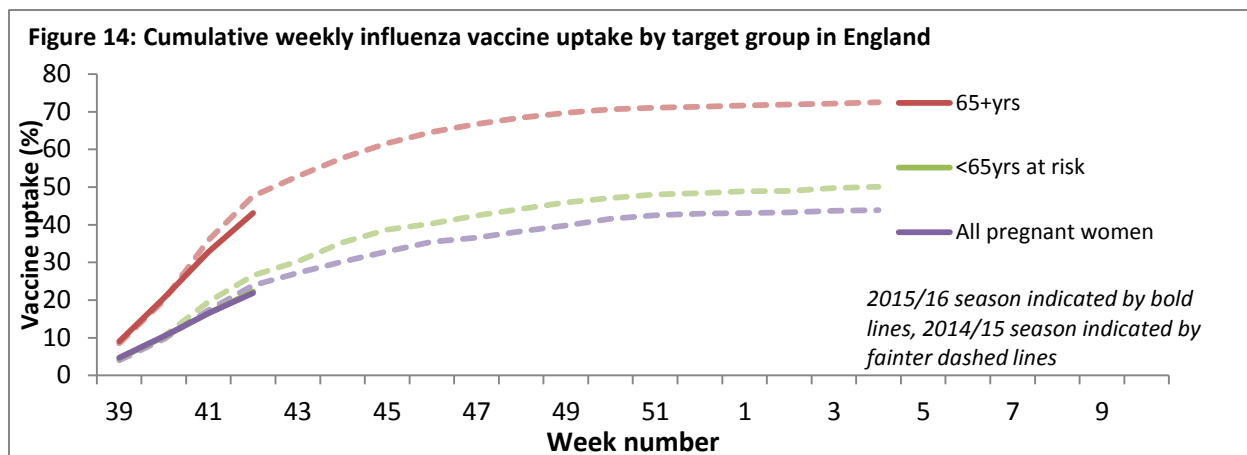
-Table 4 shows in the 12 weeks up to 18 October 2015, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired 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 18 October 2015, E&W

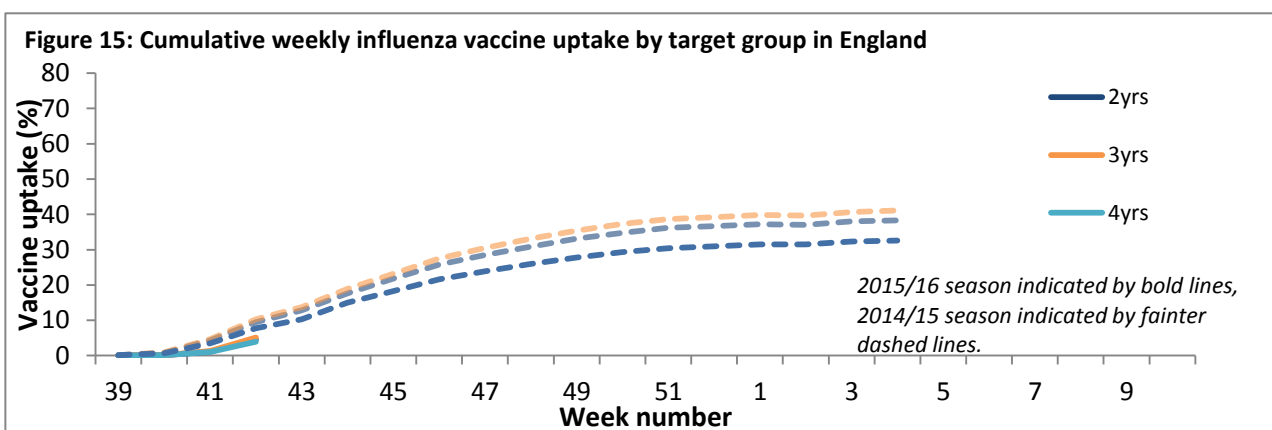
| Organism | Antibiotic | Specimens tested (N) | Specimens susceptible (%) |
|----------------------|------------------------|----------------------|---------------------------|
| <i>S. pneumoniae</i> | Penicillin | 1,931 | 91 |
| | Macrolides | 2,209 | 81 |
| | Tetracycline | 2,150 | 83 |
| | Amoxicillin/ampicillin | 8,637 | 73 |
| <i>H. influenzae</i> | Co-amoxiclav | 8,253 | 92 |
| | Macrolides | 2,749 | 18 |
| | Tetracycline | 8,479 | 99 |
| <i>S. aureus</i> | Methicillin | 3,757 | 89 |
| | Macrolides | 3,667 | 71 |
| MRSA | Clindamycin | 341 | 47 |
| | Tetracycline | 409 | 88 |
| MSSA | Clindamycin | 2,107 | 78 |
| | Tetracycline | 3,062 | 94 |

*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 42 2015 in 86.9% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2015/16 influenza vaccine in targeted groups was as follows (Figure 14)
 - 22.3% in under 65 years in a clinical risk group
 - 21.9% in pregnant women
 - 43.1% in 65+ year olds



- In 2015/16, 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 and 2 age. Up to week 42 2015 in 86.9% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2015/16 influenza vaccine in targeted groups was as follows (Figure 15)
 - 4.6% in all 2 year olds
 - 5.1% in all 3 year olds
 - 3.9% in all 4 year olds



Globally, influenza activity generally decreased or remained low, with only a few countries reporting elevated respiratory illness levels. Influenza activity in the northern hemisphere continued at low, inter-seasonal levels with sporadic detections.

- [Europe](#) updated on 16 October 2015 (Joint ECDC-WHO Influenza weekly update)

For week 41, influenza activity is at low levels in the 38 countries which reported.

For week 41/2015, one out of 324 (<1%) specimens from sentinel sources from 22 countries tested positive for influenza virus; the United Kingdom (Scotland) reported one influenza B virus detection, lineage unknown.

For week 41/2015, 21 of 4457 (0.5%) specimens from non-sentinel sources tested positive for influenza virus from eight countries where all three seasonal influenza viruses were detected (A(H1N1)pdm09, A(H3N2) and B).

- [United States of America](#) Updated on 16 October 2015 (Centre for Disease Control report)

Nationwide during week 40, 1.2% of patient visits reported through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI). This percentage is below the national baseline of 2.1%.

During week 40, 5.3% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 5.9% for week 40.

No influenza-associated paediatric deaths were reported to CDC during week 38. A total of 146 influenza-associated paediatric deaths have been reported during the 2014-2015 season.

- [Canada](#) Updated on 16 October 2015 (Public Health Agency report)

Overall, there is low influenza activity in Canada; however, influenza activity and detections are increasing, especially in British Columbia and Ontario. In week 40, sporadic and localised influenza activity were reported in the Western provinces, Ontario and in one region of Nova Scotia.

The number of positive influenza tests increased over the two week period, but the percent positive for influenza detections remained low at 2.1%; however, this is the highest recorded value compared the previous five seasons during the same period.

The national influenza-like-illness (ILI) consultation rate decreased from 19.1 consultations per 1,000 patient visits in week 39 to 17.1 per 1,000 visits in week 40. In week 40, the highest ILI consultation rate was found in the 5-19 age group and the lowest was found in the ≥65 age group.

In weeks 39 and 40, five new outbreaks of influenza were reported (4 in long-term care facilities(3 influenza A(H3) and one unknown), 1 in an institutional or community setting (influenza A(H3)).

- [Global influenza update](#) Updated on 19 October 2015 (WHO website)

Globally, influenza activity generally decreased or remained low in both hemispheres, with only a few countries reporting elevated respiratory illness levels.

In the Northern hemisphere, influenza activity continued at low, inter-seasonal levels with sporadic detections. Increased respiratory syncytial virus (RSV) activity was reported in the United States of America (USA).

Few influenza detections were reported by countries in Africa. In countries with reported influenza in both Eastern and Western Africa, influenza type A viruses predominated.

In tropical countries of the Americas, Central America and the Caribbean, influenza activity remained at low levels, with the exception of Cuba, where high numbers of severe acute respiratory infections (SARI) were still reported, associated with influenza A(H1N1)pdm09 virus and RSV. In Columbia, acute respiratory activity (ARI) has started to decrease in recent weeks but RSV activity remains high compared to previous years.

In tropical Asia, countries in Southern and South East Asia reported low influenza activity overall except in India and Lao People's Democratic Republic where increased activity mainly due to A(H1N1)pdm09 virus in India and A(H3N2) virus in Lao PDR continued to be reported. Influenza activity declined in southern China.

In temperate South America, respiratory virus activity continued to decrease in recent weeks after RSV activity peaked in early July and influenza virus activity peaked at the end of August. In Chile, after a later than usual increase and peak in influenza activity in August and early September, ILI activity decreased in recent weeks with decreased influenza A and RSV detections.

In South Africa, the influenza season ended by mid-September with only sporadic detections of influenza B viruses in recent weeks. ILI and RSV activity also remain low.

In Australia and New Zealand, influenza activity continued to decrease after peaks in mid-August. Recent influenza virus detections were predominantly influenza B viruses. In New Zealand, ILI activity was just above the seasonal threshold.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 49,103 specimens between 21 September and 4 October 2015. 2,240 were positive for influenza viruses, of which 1,495 (66.7%) were typed as influenza A and 745 (33.3%) as influenza B. Of the sub-typed influenza A viruses, 350 (29.8%) were influenza A(H1N1)pdm09 and 824 (70.2%) were influenza A(H3N2). Of the characterized B viruses, 138 (66.7%) belonged to the B-Yamagata lineage and 69 (33.3%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 15 October 2015 (WHO website)

Influenza A(H7N9) latest update on 16 July 2015

On [16 July 2015](#), the National Health and Family Planning Commission (NHFPC) of China notified WHO of 5 additional laboratory-confirmed cases of human infection with avian influenza A (H7N9) virus, including 3 deaths.

For further updates and WHO travel and clinical management advice, please see the [WHO website](#).

Influenza A(H5N1)

From 2003 through 15 October 2015, 844 laboratory-confirmed human cases of H5N1 avian influenza have been officially reported to [WHO](#) from 16 countries, of which 449 (53.2%) have died. Since the last WHO Influenza update on 4 September 2015, no new laboratory-confirmed human cases of avian influenza A(H5N1) virus infection were reported to WHO. Various influenza A(H5) subtypes, such as influenza A(H5N1), A(H5N2), A(H5N3), A(H5N6) and A(H5N8), continue to be detected in birds in West Africa, and Asia, according to recent reports received by OIE. Although these influenza A(H5) viruses might have the potential to cause disease in humans, so far no human cases of infection have been reported, with exception of the human infections with influenza A(H5N1) viruses and the four human infections with influenza A(H5N6) virus detected in China since 2014. Overall, the public health risk assessment for avian influenza A(H5) viruses remains unchanged since the assessment of [17 July 2015](#).

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 12 October 2015

Between [27 September and 1 October 2015](#), the National IHR Focal Point for the Kingdom of Saudi Arabia notified WHO of 1 additional case of Middle East respiratory syndrome coronavirus (MERS-CoV) infection.

On [7 October 2015](#), the National IHR Focal Point of Jordan notified WHO of 1 additional case of MERS-CoV infection.

Up to 19 October 2015, a total of four cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (two imported and two linked cases) have been confirmed in England. On-going surveillance has identified 452 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

Globally, WHO has been notified of 1,595 laboratory-confirmed cases of infection with MERS-CoV, including at least 571 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

[| Back to top |](#)

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Related links

[| Back to top |](#)

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](#))
- 2014/15 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))