



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

Influenza activity is at low levels in week 47 2014 (ending 23 November), although influenza-confirmed outbreaks are starting to be reported in the community and influenza positivity is increasing through the DataMart scheme. RSV continues to circulate, predominantly in under five year olds.

- [Community influenza surveillance](#)
 - In week 47 syndromic surveillance indicators for influenza remained low. Selected respiratory indicators continued to rise across all systems during week 46, particularly in infants; in line with seasonal expectations and recent increases in laboratory reports for respiratory syncytial virus (RSV).
 - Four new acute respiratory outbreaks have been reported in the past seven days, two in care homes (both A(H3)) and two in schools (neither tested).
- [Overall weekly influenza GP consultation rates across the UK](#)
 - In week 47, overall weekly influenza-like illness GP consultations remained low in Wales (7.6 per 100,000), Scotland (10.5 per 100,000) and Northern Ireland (9.6 per 100,000).
 - Weekly GP In Hours influenza-like illness consultation rates for influenza are low in week 47.
 - There is no RCGP weekly data available because of continuing data quality issues. Work is being done to resolve these problems and it is hoped a normal service will resume in the coming weeks.
- [Influenza-confirmed hospitalisations](#)
 - Three new admissions to ICU/HDU with confirmed influenza (two influenza A(H3N2) and one A unknown subtype) were reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (137 Trusts in England) in week 47.
 - Seven new hospitalised confirmed influenza cases (six A(H3N2) and one B) were reported through the USISS sentinel hospital network across England (24 Trusts).
- [All-cause mortality data](#)
 - In week 47 2014, no excess all-cause mortality by week of death was seen across the UK through the EuroMOMO algorithm.
- [Microbiological surveillance](#)
 - One sample was positive for influenza through the UK GP sentinel swabbing schemes in week 47 (one A(not subtyped), positivity of 1.4%).
 - In week 47 2014, 43 influenza positive detections were recorded through the DataMart scheme (33 A(H3), nine A(not subtyped) and one B, an increased positivity of 5.4% compared to 1.8% the previous week). RSV positivity was elevated at 43.9% in week 47 in children <5 years of age.
- [Vaccination](#)
 - Up to week 47 2014 in 91% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2014/15 influenza vaccine in targeted groups was as follows: 42.4% in under 65 years in a clinical risk group, 36.6% in pregnant women, 66.7% in 65+ year olds, 28.5% in all 2 year olds, 30.5% in all 3 year olds and 23.9% in all 4 year olds.
 - Provisional data from the first monthly collection of influenza vaccine uptake by frontline healthcare workers show 36.8% were vaccinated by 31 October 2014 from 96.6% of Trusts, compared to 35.0% vaccinated the previous season by 31 October 2013.
 - Provisional data from the first monthly collection of influenza vaccine uptake up to 31 October 2014 by targeted groups has been published. The [report](#) provides uptake at national, area team and CCG level.
- [International situation](#)
 - Globally, influenza activity remained low, with the exception of some Pacific Islands.
 - In the European Region, although sporadic influenza virus detections are being reported in an increasing number of countries, there is no indication that the influenza season has started.

In week 47 influenza syndromic indicators remained low and four new acute respiratory outbreaks were reported in the last seven days.

- PHE Real-time Syndromic Surveillance

-In week 47 syndromic surveillance indicators for influenza remained low. Selected respiratory indicators continued to rise across all systems during week 47, particularly in infants; in line with seasonal expectations. This is consistent with increased RSV positivity in under five year olds through the Respiratory Datamart System (see page 5).

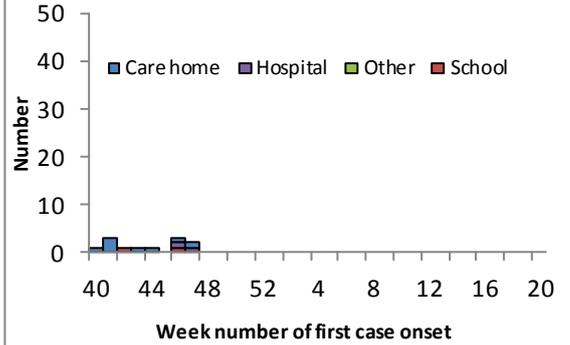
-For further information, please see the syndromic surveillance [webpage](#).

- Acute respiratory disease outbreaks

-Four new acute respiratory outbreaks have been reported in the past seven days, two in care homes (both A(H3)) and two in schools (neither tested). So far in the 2014/15 flu season, 14 outbreaks (10 in care homes, five in schools and two in hospitals) have been reported in the UK including five with flu A(H3) infection, one flu A (untyped), three rhinovirus, one parainfluenza, one adenovirus/parainfluenza, one enterovirus and five not tested.

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

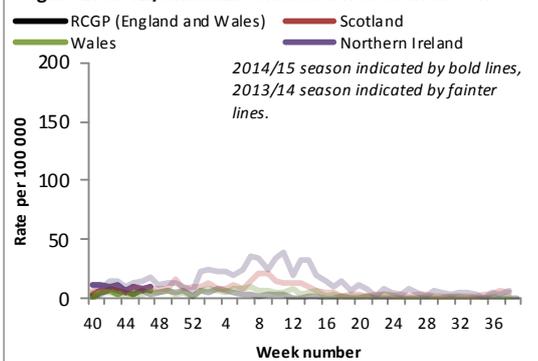
Figure 1: Number of acute respiratory outbreaks by institution, UK



In week 47 overall weekly influenza-like illness GP consultations remained low in England, Wales, Scotland and Northern Ireland.

- Influenza/Influenza-Like-Illness (ILI)

Figure 2: GP ILI/influenza consultation rates in the UK



Northern Ireland

-The Northern Ireland influenza rate was low at 9.6 per 100,000 in week 47 (Figure 2).

-The highest rates were seen in under one year olds (53.9 per 100,000), 1-4 year olds (20.7 per 100,000) and 65-74 year olds (12.1 per 100,000).

Wales

-The Welsh influenza rate was low at 7.6 per 100,000 in week 47 (Figure 2).

-The highest rates were seen in 5-14 year olds (12.2 per 100,000), 1-4 year olds (9.9 per 100,000) and 45-64 year olds (8.2 per 100,000).

Scotland

-The Scottish ILI rate was low at 10.5 per 100,000 in week 47 (Figure 2).

-The highest rates were seen in 1-4 year olds (12.9 per 100,000), 15-44 year olds (12.6 per 100,000) and 45-64 year olds (12.6 per 100,000).

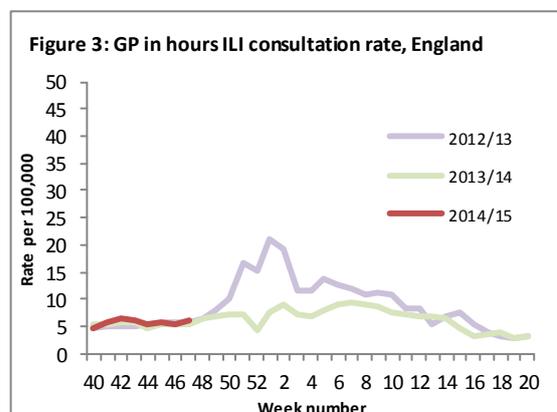
RCGP (England and Wales)

-There is no RCGP weekly data available this week because of continuing data quality issues. Work is being done to resolve these problems and it is hoped a normal service will resume in the coming weeks.

GP In Hours Syndromic Surveillance System (England)

-The weekly ILI consultation rate per 100,000 population through the GP In Hours Syndromic Surveillance system remained low in week 47 and similar to levels in previous years for the time of year (Figure 3).

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



Influenza confirmed hospitalisations

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In week 47, three new admissions of confirmed influenza cases (two influenza A(H3N2) and one A unknown subtype) to ICU/HDU were reported through the national USISS mandatory ICU scheme across the UK (137 Trusts in England). Seven new hospitalised confirmed influenza cases (six A(H3N2) and one B) have been reported through the USISS sentinel hospital network across England (24 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 has been 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 47)

-In week 47, three new admissions to ICU/HDU with confirmed influenza infection (two influenza A(H3N2) and one A unknown subtype) were reported across the UK (137/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 4 and 5) compared to four in week 46. One new confirmed influenza death was reported in week 47 2014. A total of 16 admissions (12 A unknown subtype, three A(H3) and one B) and two confirmed influenza deaths have been reported since week 40 2014.

Figure 4: Weekly ICU influenza admissions and deaths (USISS mandatory) by week of admission/death, UK, since week 40 2014

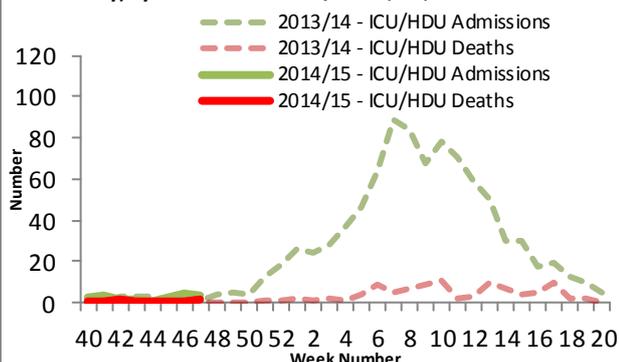
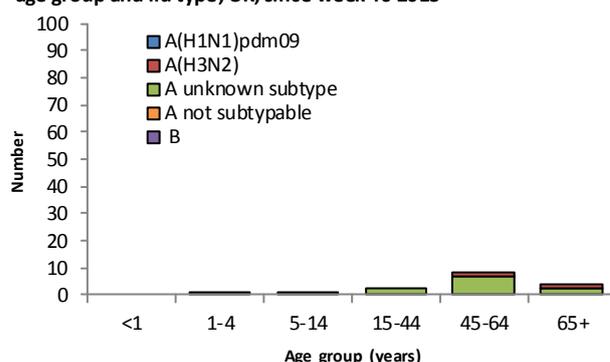


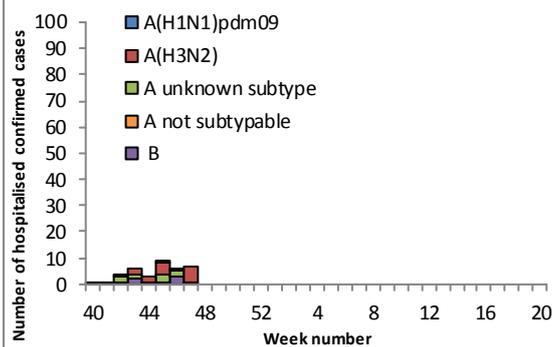
Figure 5: Cumulative ICU influenza admissions (USISS mandatory) by age group and flu type, UK, since week 40 2013



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 47)

-In week 47, seven new hospitalised confirmed influenza cases (six influenza A(H3N2) and one B) were reported through the USISS sentinel hospital network from 24 NHS Trusts across England (Figure 6). A total of 37 hospitalised confirmed influenza admissions (17 A(H3N2), 10 B, nine A unknown subtype and one A(H1N1pdm09)) have been reported since week 40.

Figure 6: Weekly hospitalised cases (USISS sentinel) by flu type, England, since week 40 2013



All-cause mortality data

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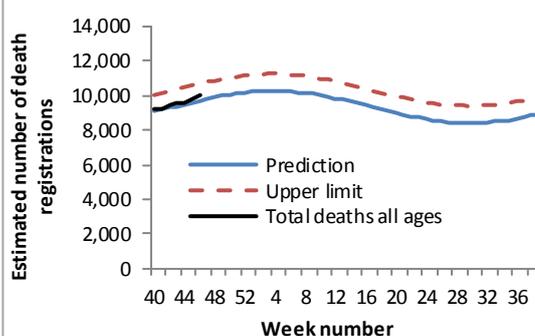
In week 47 2014, no excess all-cause mortality by week of death was seen in England through the EuroMOMO algorithm.

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 46 2014, an estimated 10,036 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is slightly higher than the 9,753 estimated death registrations in week 45 but remains below the 95% upper limit of expected death registrations for this time of year as calculated by PHE (Figure 7).

Figure 7: Observed & predicted all-cause death registrations, E&W



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

-In week 47 2014, no excess mortality by date of death above the upper 2 z-score threshold was seen in 65+ year olds in England after correcting ONS disaggregate data for reporting delay with the standardised EuroMOMO algorithm (Figure 8, Table 1), in other age groups or by PHE region. This data is provisional due to the time delay in registration; numbers may vary from week to week.

-No excess mortality above the threshold through the same standardised algorithm was seen across Wales, Scotland or Northern Ireland in week 47 (Table 2).

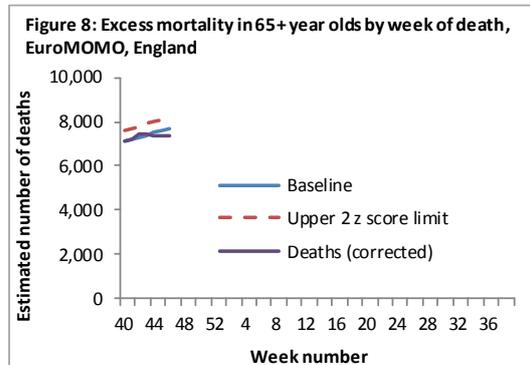


Table 1: Excess mortality by age group, England*

Age group (years)	Excess detected in week 47 2014?	Weeks with excess in 2014/15
<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 47 2014?	Weeks with excess in 2014/15
England	x	NA
Wales	x	NA
Scotland	x	NA
Northern Ireland	x	NA

* 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

Microbiological surveillance

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In week 47 2014, one sample was positive for influenza through the UK GP sentinel schemes (one A(not subtyped, positivity of 1.4%). 43 influenza positive detections were recorded through the DataMart scheme (33 A(H3), nine A(not subtyped) and one B).

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

-In week 47, no samples were positive for influenza in England. One sample was positive in Scotland (one A(not subtyped)) and no samples in Northern Ireland or Wales were positive for influenza (Table 3).

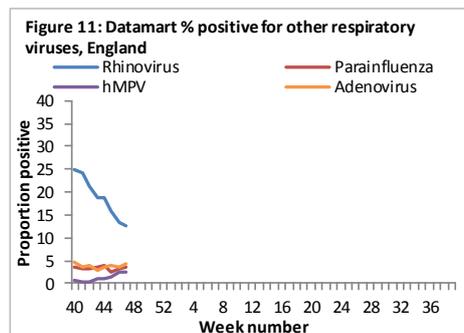
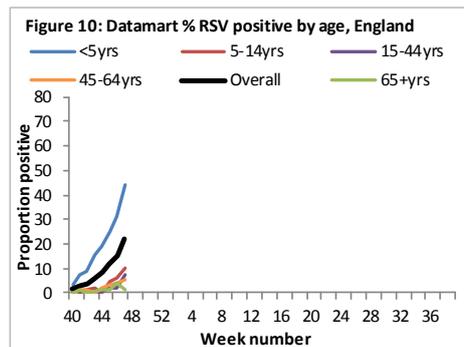
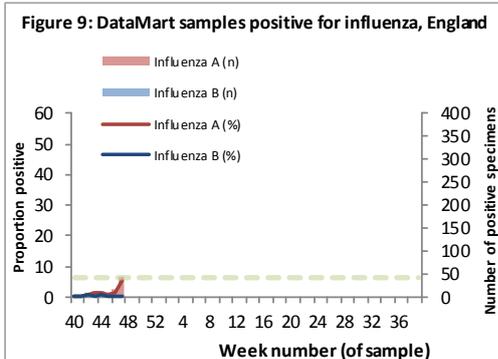
Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
44	3/70 (4.3%)	1/51 (2.0%)	3/4 (-)	0/0 (-)
45	0/63 (0.0%)	0/60 (0.0%)	0/1 (-)	0/0 (-)
46	3/41 (7.3%)	2/57 (3.5%)	0/1 (-)	0/0 (-)
47	0/29 (0.0%)	1/42 (2.4%)	0/0 (-)	0/0 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 47 2014, out of the 801 respiratory specimens reported through the Respiratory DataMart System, 43 samples (5.4%) were positive for influenza (33 A(H3), nine A(not subtyped) and 1 B, (Figure 9*).). The overall positivity for RSV was 22.3% in week 47, with the highest positivity reported in the <5 years (with an increase from 31.5% to 43.9% in week 47, Figure 10). Positivity for rhinovirus decreased to 12.5% in week 47, while other respiratory viruses remained at low levels: adenovirus 4.4%, parainfluenza 3.7% and hMPV 2.3%, Figure 11).



*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 circulation for Datamart % positive as calculated through the Moving Epidemic Method is 6%.

- Virus characterisation

Since week 40 2014, the PHE Respiratory Virus Unit (RVU) has isolated and antigenically characterised five influenza A(H3N2) viruses, all of which were similar to the A/Texas/50/2012 H3N2 Northern Hemisphere 2014/15 vaccine strain.

- Antiviral susceptibility

Since week 40 2014, four influenza viruses (2 A(H3N2), 1 A(H1N1)pdm09 and 1B) have been tested for oseltamivir susceptibility in the UK and all are sensitive. The two flu A(H3N2) and the flu B virus were also tested against zanamivir and are all sensitive.

- Antimicrobial susceptibility

-Table 4 shows in the 12 weeks up to 16 November 2014, 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 16 Nov 2014, E&W

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	1,894	90
	Macrolides	1,943	79
	Tetracycline	1,832	82
<i>H. influenzae</i>	Amoxicillin/ampicillin	7,798	73
	Co-amoxiclav	7,261	93
	Macrolides	2,250	12
	Tetracycline	7,601	98
<i>S. aureus</i>	Methicillin	3,694	92
	Macrolides	3,496	67
MRSA	Clindamycin	165	42
	Tetracycline	272	84
MSSA	Clindamycin	1,438	80
	Tetracycline	2,686	93

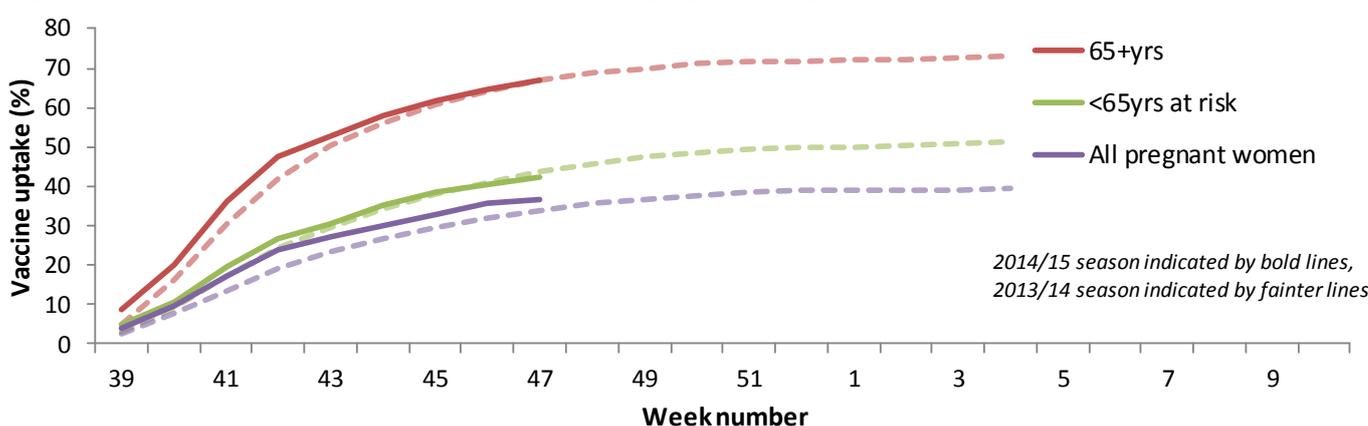
*Macrolides = erythromycin, azithromycin and clarithromycin

Vaccination

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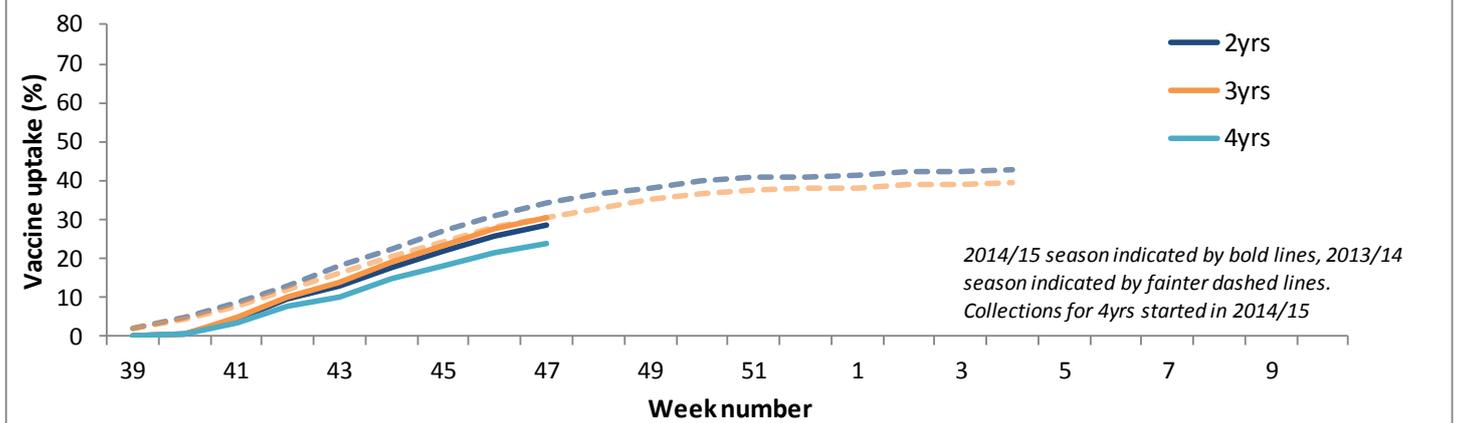
- Up to week 47 2014 in 91% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2014/15 influenza vaccine in targeted groups was as follows (Figure 12):
 - 42.4% in under 65 years in a clinical risk group
 - 36.6% in pregnant women
 - 66.7% in 65+ year olds

Figure 12: Cumulative weekly influenza vaccine uptake by target group in England



- The childhood universal influenza vaccination programme has extended from 2-3 year olds in 2013/14 to 2-4 year olds in 2014/15. Up to week 47 2014 in 91% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2014/15 influenza vaccine in targeted groups was as follows (Figure 13):
 - 28.5% in all 2 year olds
 - 30.5% in all 3 year olds
 - 23.9% in all 4 year olds

Figure 13: Cumulative weekly influenza vaccine uptake by target group in England



- Provisional data from the first monthly collection of influenza vaccine uptake by frontline healthcare workers show 36.8% were vaccinated by 31 October 2014 from 96.6% of Trusts, compared to 35.0% vaccinated the previous season by 31 October 2013. The [report](#) provides uptake at national, geographical area, area team (on behalf of primary care and independent sector healthcare providers) and individual Trust level.
- Provisional data from the first monthly collection of influenza vaccine uptake up to 31 October 2014 by targeted groups has been published. The [report](#) provides uptake at national, area team and CCG level.

International Situation

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Globally, influenza activity remained low, with the exception of some Pacific Islands. In the European Region, although sporadic influenza virus detections are being reported in an increasing number of countries, there is no indication that the influenza season has started.

- [Europe](#) 21 November 2014 (Joint ECDC-WHO Influenza weekly update)

Although sporadic influenza virus detections are being reported in an increasing number of countries, there is no indication that the influenza season has started in the Region, which is normal for this time of year.

In week 46/2014, influenza activity remained low across the WHO European Region. Fourteen countries reported sporadic influenza activity and eight reported increasing trends in consultations for influenza-like illness (ILI) and acute respiratory infection (ARI). Of the 634 sentinel ILI and ARI specimens tested across 35 countries, only 14 (2%) from eight countries tested positive for influenza virus. Currently circulating viruses include A(H1N1)pdm09, A(H3N2) and influenza B viruses. Hospitalized cases remain low and stable, with one country reporting four hospitalized laboratory-confirmed influenza cases for week 46/2014. All were admitted to intensive care units. Forty-five of the 46 countries submitting data for week 46/2014 reported low intensity of influenza activity, and one (Malta) reported medium intensity. Fourteen countries reported sporadic influenza activity. Eight countries (Albania, Belarus, Bulgaria, the Netherlands, Poland, the Russian Federation, the United Kingdom (Wales) and Uzbekistan), mostly in the eastern part of the Region, reported increasing trends while the remainder reported stable trends.

Since week 40/2014, 12 antigenic characterizations of influenza viruses have been reported: two A(H1N1)pdm09 A/California/7/2009-like, six A(H3N2) A/Texas/50/2012-like, one B/Massachusetts/02/2012 and one B/Wisconsin/1/2010 (both B/Yamagata/16/88-lineage). Two A(H3N2) viruses could not be categorized in any of the known categories. Twenty viruses have been genetically characterized, 19 belonging to the A(H3N2) A/Texas/50/2012 subgroup (3C) and one belonging to the B/Wisconsin/1/2010 clade.

No indications of increased mortality due to influenza have been reported through the European monitoring of excess mortality for public health action (EuroMOMO – <http://www.euromomo.eu>).

- [United States of America](#) 21 November 2014 (Centre for Disease Control report)

During week 46 (November 9 - 15, 2014), influenza activity was low in the United States. The proportion of outpatient visits for influenza-like illness (ILI) was 1.6%, which is below the national baseline of 2.0%. All 10 regions reported ILI below region-specific baseline levels. Puerto Rico experienced high ILI activity; two states experienced low ILI activity; New York City and 48 states experienced minimal ILI activity; and the

District of Columbia had insufficient data. The geographic spread of influenza in Puerto Rico and five states was reported as regional; 21 states reported local activity; the District of Columbia, the U.S. Virgin Islands, and 23 states reported sporadic activity; one state reported no influenza activity; and Guam did not report.

During week 46, 5.0% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.4% for week 46.

Of 10,304 specimens tested and reported during week 46, 955 (9.3%) were positive for influenza. (579 influenza A subtype not performed, 119 influenza B, 279 influenza A(H3) and zero influenza A(H1N1)pdm09).

No influenza-associated paediatric deaths were reported to CDC during week 46. To date, one influenza-associated paediatric death has been reported for the 2014-2015 season.

- [Canada](#) 21 November 2014 (Public Health Agency report)

In week 46, overall influenza activity increased from the previous week with sporadic activity reported in six provinces and one territory. Low-level activity started earlier this season than in the previous two years, but the geographic spread of influenza is as expected, with regions of western and central Canada most affected to date. A (H3N2) continues to be the most common type of influenza affecting Canadians. To date, 40-50% of influenza laboratory detections and hospitalizations have been in seniors ≥65 years of age. In week 46, three regions, two in Ontario and one in Alberta, reported localized activity and 18 regions reported sporadic activity.

The number of positive influenza tests increased sharply to 106 influenza detections (3.5% of tests) in week 45. To date, 85% of influenza detections have been influenza A, and the vast majority of those subtyped have been A (H3). Among cases of influenza A with reported age, the largest proportion was in adults ≥65 years of age (44%). Cases of influenza B have been reported among younger age-groups, with 28% being children <5 years of age.

The national influenza-like-illness (ILI) consultation rate increased in week 46 to 41.1 consultations per 1,000 (Figure 5). To date this season, the rates have been highest among those <20 years of age.

Since the start of the 2014-15 season, 110 laboratory-confirmed influenza-associated hospitalizations have been reported from participating provinces and territories*; 102 were cases of influenza A, of which 80% were A(H3N2); 49% were patients ≥65 years of age (Table 6). One ICU admission was reported in an adult ≥45 years of age. Ten deaths with influenza A have been reported: one child <5 years of age, one adult 45-64 years and eight adults ≥65 years of age. Detailed clinical information (e.g. underlying medical conditions) is not known for these cases. Further data is available [here](#).

- [Global influenza update](#) 17 November 2014 (WHO website)

Globally, influenza activity remained low, with the exception of some Pacific Islands.

In North America, influenza activity continued to increase slightly but remained low.

In Europe overall influenza activity remained at inter-seasonal levels.

In tropical countries of the Americas, influenza detections remained low, with respiratory syncytial virus (RSV) causing most influenza-like illness (ILI) and severe acute respiratory infections (SARI) activity.

In Africa and western and eastern Asia, influenza activity was low.

In tropical Asia, influenza activity was low with influenza B predominant in Viet Nam.

In the southern hemisphere, influenza activity remained low except in several Pacific Islands where ILI activity remained high.

- Enterovirus D68 (EV-D68) 20 November 2014

From mid-August to 20 November 2014, CDC or state public health laboratories have confirmed a total of [1,121 persons](#) in 47 states and the District of Columbia with respiratory illness caused by EV-D68. Reports from most states over the last couple months have indicated reduced EV-D68-like illness activity. However, EV-D68 infections could continue through late fall. Over the last two weeks that CDC obtained reports, some states reported increasing respiratory illness activity. However, since other seasonal respiratory viruses, such as influenza and respiratory syncytial virus, are starting to circulate now, we are not sure if this increase is caused by these seasonal viruses or EV-D68.

ECDC have published an updated [rapid risk assessment](#). Based on information currently available to ECDC, the risk of increased severe cases of EV-D68 in EU/EEA countries is assessed as moderate, in light of

recent reports of such cases and because the circulation of this strain in the population seems to be geographically widespread in the EU. In the UK, PHE have detected 14 cases of laboratory confirmed EV-D68 infection from 2012 to date. Two of these cases have been detected since 1 September 2014, one a child presenting with viral meningitis and the other an adult presenting with a respiratory tract infection.

- [Avian Influenza](#) 15 November 2014 (WHO website)

Influenza A(H7N9)

The most recent human infections with influenza A(H7N9) were reported by WHO on [15 November 2014](#) (three cases). So far, the overall risk associated with the H7N9 virus has not changed. WHO does not advise special screening at points of entry with regard to this event, nor does it currently recommend any travel or trade restrictions. For further updates please see the WHO website and for advice on clinical management please see information available [online](#).

Influenza A (H5N1)

From 2003 through 2 October 2014, 668 human cases of H5N1 avian influenza have been officially reported to [WHO](#) from 16 countries, of which 393 (59%) died.

- Novel coronavirus 21 November 2014

Up to 5 November 2014, 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 224 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

A further 914 confirmed cases have been reported internationally, resulting in a current global total of [914 cases](#), with the most recent cases reported from Kingdom of Saudi Arabia. Further information on management and guidance of possible cases is available [online](#).

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[®] and EMIS and EMIS practices contributing to the QSurveillance[®] 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](#))
- 2014/15 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))