



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

In week 2 2015 (ending 11 January), across indicators influenza activity was at similar or lower levels than those reported the previous week. The Department of Health have issued an [alert](#) on the prescription of antiviral medicines by GPs.

- [Community influenza surveillance](#)

- In week 2 syndromic surveillance indicators for influenza-like illness showed little change relative to week 1. All other respiratory indicators remained high but showed signs of decrease across age groups.
- 120 new acute respiratory outbreaks were reported in the last seven days: 108 in care homes (20 A(untyped), three A(H3) and the rest not tested/results not available yet), eight in hospitals (seven A(untyped) and one no results available yet), two in schools (not tested) and two in other settings (not tested).

- [Overall weekly influenza GP consultation rates across the UK](#)

- In week 2, overall weekly influenza-like illness (ILI) GP consultations increased in Wales (21.5 per 100,000), Northern Ireland (47.6 per 100,000) and Scotland (27.6 per 100,000).
- The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system remained elevated in week 2 at 21.3 per 100,000.

- [Influenza-confirmed hospitalisations](#)

- 85 new admissions to ICU/HDU with confirmed influenza (52 A unknown subtype, 24 A(H3N2), six influenza A(H1N1)pdm09 and three influenza B) were reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (128 Trusts in England) in week 2, a rate of 0.19 per 100,000 compared to 0.26 per 100,000 the previous week.
- 164 new hospitalised confirmed influenza cases (135 influenza A(H3N2), 26 A unknown subtype and three influenza B) were reported through the USISS sentinel hospital network across England (25 Trusts), a rate of 1.64 per 100,000 compared to 1.74 per 100,000 the previous week.

- [All-cause mortality data](#)

- In week 2 2015, significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England in 65+ year olds. In the devolved administrations, no significant excess all-cause mortality was seen in week 2. Since week 40 2014, significant excess mortality has been seen in England from week 50 to 2 2015.

- [Microbiological surveillance](#)

- 110 samples were positive for influenza through the UK GP sentinel swabbing schemes in week 2 (92 A(H3), nine A(H1N1)pdm09, five A(not subtyped) and four B, positivity of 37.5% compared to 39.0% the previous week (updated)).
- In week 2 2015, 425 influenza positive detections were recorded through the DataMart scheme (355 A(H3), 51 A(not subtyped), eight A(H1N1)pdm09 and 11 B, a positivity of 24.4% compared to 31.2% the previous week, with the highest positivity by age group in 65+ year olds at 36.3%).
- The majority of influenza A(H3N2) viruses isolated and characterised by the PHE Respiratory Virus Unit were similar to the Northern Hemisphere 2014/15 vaccine strain, however 12 (21%) showed reduced reactivity and were similar to the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. PHE is continuing to monitor the situation.

- [Vaccination](#)

- Up to week 2 2015 in 83% 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: 71.9% in 65+ year olds, 49.0% in under 65 years in a clinical risk group, 43.3% in pregnant women, 37.0% in all 2 year olds, 39.7% in all 3 year olds and 31.5% in all 4 year olds.
- Provisional data from the second monthly collection of influenza vaccine uptake by frontline healthcare workers show 48.2% were vaccinated by 30 November 2014 from 97.0% of Trusts.

- [International situation](#)

- Globally, influenza activity continued to increase in the northern hemisphere with influenza A(H3N2) continuing to dominate. In the European Region, the influenza season has started, with influenza A(H3N2) viruses the predominant viruses detected across all surveillance systems.

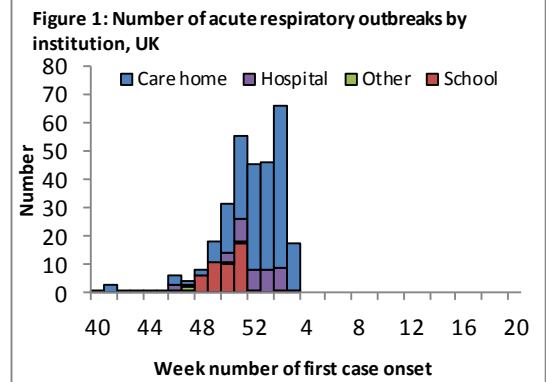
In week 2 syndromic indicators for influenza-like illness showed little change relative to the previous week and 120 new acute respiratory outbreaks were reported in the last seven days.

- PHE Real-time Syndromic Surveillance

-In week 2 syndromic surveillance indicators for influenza-like illness showed little change relative to week 1. All other respiratory indicators remained high but showed signs of decrease across age groups
 -For further information, please see the syndromic surveillance [webpage](#).

- Acute respiratory disease outbreaks

-120 new acute respiratory outbreaks have been reported in the past seven days, 108 in care homes (20 flu A(untyped), 3 flu A(H3) and the rest not tested/results not available yet), 8 in hospitals (7 flu A(untyped), and the other one no results yet), 2 in schools (not tested) and 2 in other settings (not tested). So far in the 2014/15 flu season, 320 outbreaks (224 in care homes, 54 in schools, 37 in hospitals and 4 in other settings) have been reported in the UK including 35 with flu A(H3) infection, 68 flu A (untyped), one flu B, one flu A(untyped)/flu B, five rhinovirus, three RSV, one parainfluenza, one adenovirus/parainfluenza, one enterovirus and 204 not tested (or test results not yet available).

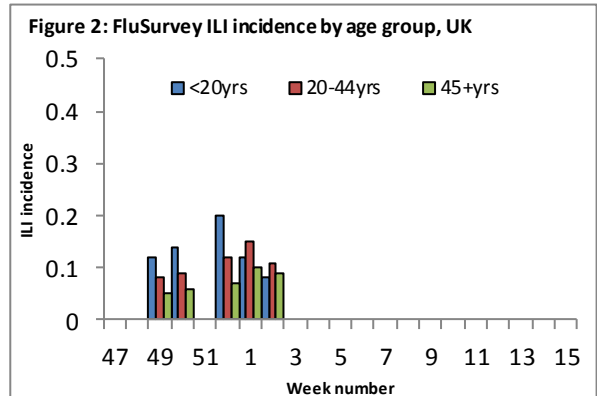


-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and Respscidsc@phe.gov.uk.

- FluSurvey

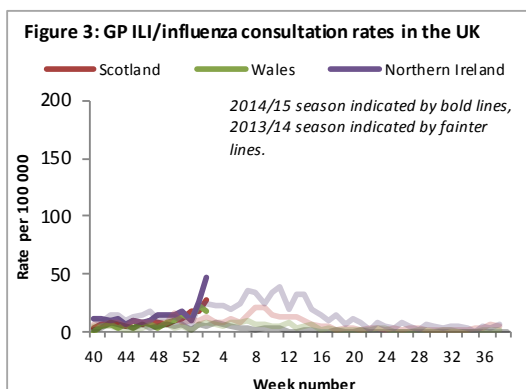
-Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey project (<http://flusurvey.org.uk>) run by the London School of Hygiene and Tropical Medicine. Please see the website for information on how to register.

-In week 2, the incidence of ILI reports by age group was highest in 20-44 year olds (Figure 2, NB. No data is currently available for week 51).



In week 2 overall weekly influenza-like illness GP consultations increased in England, Wales, and Northern Ireland and Scotland.

- Influenza/Influenza-Like-Illness (ILI)



Northern Ireland

-The Northern Ireland influenza rate increased from 26.1 to 47.6 per 100,000 in week 2 (Figure 3).

-The highest rates were seen in <1 year olds (102.7 per 100,000), 65-74 year olds (72.6 per 100,000) and 45-64 year olds (54.5 per 100,000).

Wales

-The Welsh influenza rate increased from 19.0 to 21.5 per 100,000 in week 2 (Figure 3).

-The highest rates were seen in 45-64 year olds (26.2 per 100,000), 65-74 year olds (25.5 per 100,000) and 15-44 year olds (23.1 per 100,000).

Scotland

-The Scottish ILI rate increased from 18.7 to 27.6 per 100,000 in week 2 (Figure 3).

-The highest rates were seen in 15-44 year olds (33.9 per 100,000), 75+ year olds (30.8 per 100,000) and 45-64 year olds (30.7 per 100,000).

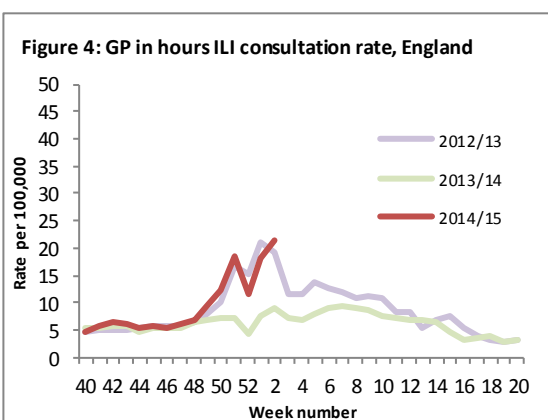
RCGP (England and Wales)

-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 through the GP In Hours Syndromic Surveillance system remained elevated at 21.3 per 100,000 population in week 2 (Figure 4).

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



Influenza confirmed hospitalisations

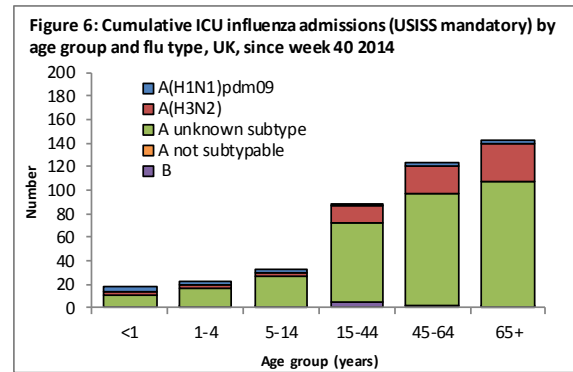
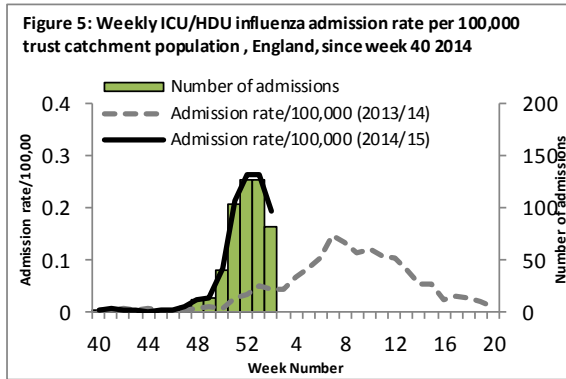
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In week 2, 85 new admissions to ICU/HDU with confirmed influenza (52 A unknown subtype, 24 A(H3N2), six influenza A(H1N1)pdm09 and three influenza B) were reported through the national USSS mandatory ICU scheme across the UK (128 Trusts in England). 164 new hospitalised confirmed influenza cases (135 influenza A(H3N2), 26 A unknown subtype and three influenza B) were reported through the USSS sentinel hospital network across England (25 Trusts).

A national mandatory collection (USSS 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 (USSS 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.

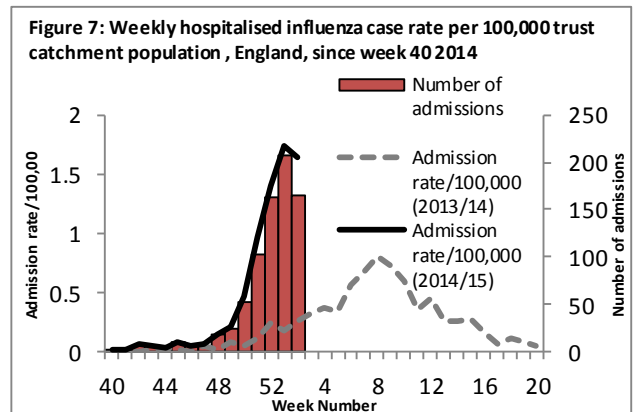
- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 2)

-In week 2, 85 new admissions to ICU/HDU with confirmed influenza (52 A unknown subtype, 24 A(H3N2), six influenza A(H1N1)pdm09 and three influenza B) were reported across the UK (127/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 5 and 6), a rate of 0.19 per 100,000 compared to 0.26 per 100,000 the previous week. Eight new confirmed influenza deaths were reported in week 2 2015. A total of 541 admissions (401 A unknown subtype, 98 A(H3N2), 30 A(H1N1)pdm09) and 51 confirmed influenza deaths have been reported since week 40 2014.



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 2)

-164 new hospitalised confirmed influenza cases (135 influenza A(H3N2), 26 A unknown subtype and three influenza B) were reported through the USISS sentinel hospital network from 25 NHS Trusts across England (Figure 7), a rate of 1.64 per 100,000 compared to 1.74 per 100,000 the previous week. A total of 772 hospitalised confirmed influenza admissions (557 A(H3N2), 181 A unknown subtype, 25 B and nine A(H1N1pdm09)) have been reported since week 40.



All-cause mortality data

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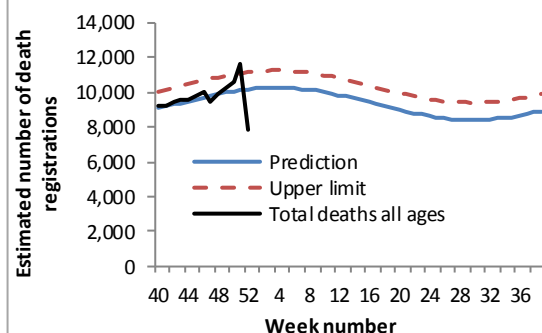
In week 2 2015, significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England in 65+ year olds. In the devolved administrations, no significant excess all-cause mortality was seen in week 2.

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 52 2014, an estimated 7,837 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is less than the 11,681 estimated death registrations in week 51, which was above the 95% upper limit of expected death registrations for the time of year as calculated by PHE (Figure 8). The sharp drop in number of deaths in week 52 corresponds to a week when there were bank holidays and fewer days when deaths were registered and so is likely to be artificial.

Figure 8: Observed & predicted all-cause death registrations, E&W



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

-Since week 40 2014 up to week 2 2015 in England, 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 in weeks 50 to 2 2015 (Figure 9, Table 1). This coincides with circulating influenza. No significant excess was seen in other age groups. This data is provisional due to the time delay in registration; numbers may vary from week to week.

-In the devolved administrations, up to week 2 2015, excess mortality above the threshold was seen in weeks 51 to 1 2015 in Scotland, week 50 in Wales (Table 2). No significant excess mortality was seen in Northern Ireland up to week 2.

Table 1: Excess mortality by age group, England*

Age group (years)	Excess detected in week 2 2015?	Weeks with excess in 2014/15
<5	×	NA
5-14	×	NA
15-64	×	NA
65+	✓	NA

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

Figure 9 Excess mortality in 65+ year olds, EuroMOMO, England

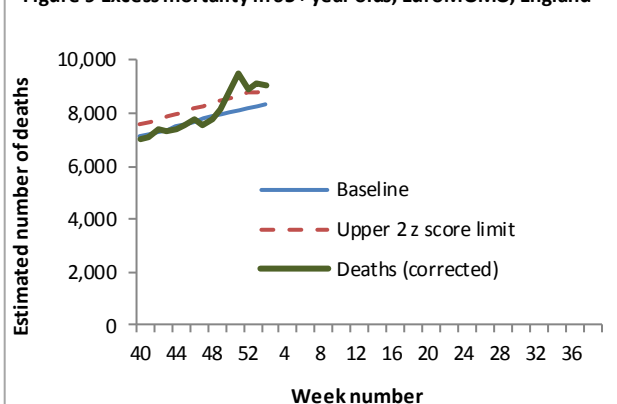


Table 2: Excess mortality by UK country*

Country	Excess detected in week 2 2015?	Weeks with excess in 2014/15
England	✓	50,51,52,1,2
Wales	×	42, 50
Scotland	×	51,52,1
Northern Ireland	×	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 2 2015, 110 samples were positive for influenza through the UK GP sentinel schemes (92 A(H3), nine A(H1N1)pdm09, five A(not subtyped) and four B, positivity of 37.5%). 425 influenza positive detections were recorded through the DataMart scheme (355 A(H3), 51 A(not subtyped), eight A(H1N1)pdm09 and 11 B, positivity of 24.4%).

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

-In week 2, 78 samples were positive for influenza in England (67 A(H3), eight A(H1N1)pdm09 and three B), 28 in Scotland (21 A(H3), five A(not subtyped), one A(H1N1)pdm09 and one B), three in Northern Ireland (three A(H3)) and one in Wales (one A(H3)) (Table 3).

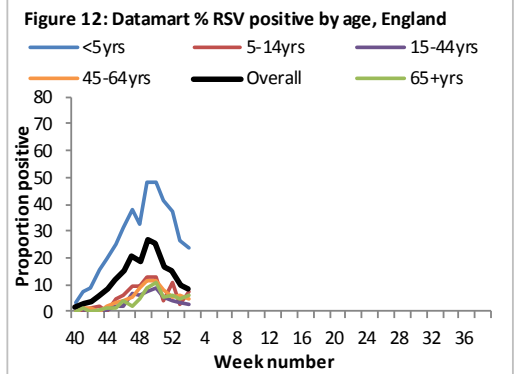
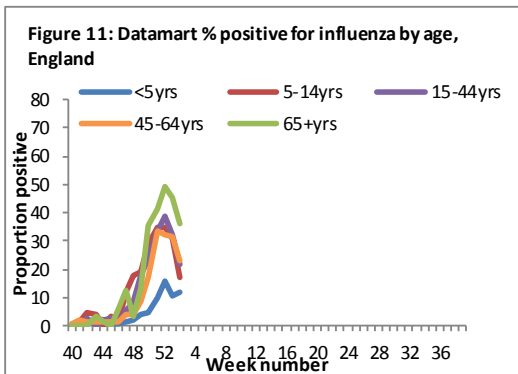
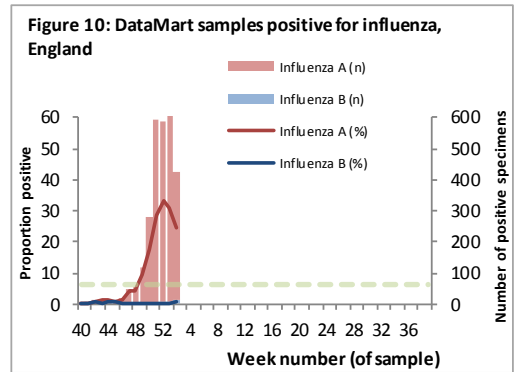
Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
51	47/112 (42.0%)	9/74 (12.2%)	0/2 (-)	6/7 (-)
52	40/88 (45.5%)	11/38 (28.9%)	0/2 (-)	2/4 (-)
1	77/185 (41.6%)	15/51 (29.4%)	0/5 (-)	6/10 (60.0%)
2	78/206 (37.9%)	28/72 (38.9%)	3/6 (-)	1/9 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 2 2015, out of the 1702 respiratory specimens reported through the Respiratory DataMart System, 425 samples (25.0%) were positive for influenza (355 A(H3), 51 A(not subtyped), 8 influenza A(H1N1)pdm09 and 11 B (Figure 10*)). The highest positivity by age group was reported in 65+ year olds (36.3%, Figure 11). The overall positivity for RSV continued to decrease remained similar to the previous week (8.4%). Positivity for other respiratory viruses remained at low levels: rhinovirus 7.3%, while other respiratory viruses remained at low levels: adenovirus 2.5%, parainfluenza 2.2% and hMPV 1.9%.



*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 6%.

- Virus characterisation

Since week 40 2014, the PHE Respiratory Virus Unit (RVU) has isolated and antigenically characterised 58 influenza A(H3N2) viruses. Of these, the majority were similar to the A/Texas/50/2012 H3N2 Northern Hemisphere 2014/15 vaccine strain, however twelve showed reduced reactivity in antigenic tests with A/Texas/50/2012 antiserum. These twelve isolates are antigenically similar to A/Switzerland/9715293/2013, the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. Further characterization of these isolates by genetic analysis is ongoing.

Two influenza B viruses have been isolated and antigenically characterised as belonging to B/Yamagata/16/88 lineage, the influenza B component of the 2014-2015 Northern Hemisphere trivalent and quadrivalent vaccines.

- Antiviral susceptibility

Since week 40 2014, 25 influenza viruses (9 A(H3N2), 13 A(H1N1)pdm09 and 3 B) have been tested for oseltamivir susceptibility in the UK and all but one H3N2 are sensitive. The nine flu A(H3N2) and the three flu B were also tested against zanamivir and all but one H3N2 are sensitive. The resistant H3N2 influenza virus has an R292K amino acid substitution in the neuraminidase. This sample was taken from a child who had received oseltamivir treatment. The R292K substitution is known to cause resistance to oseltamivir and also reduces susceptibility to zanamivir.

- Antimicrobial susceptibility

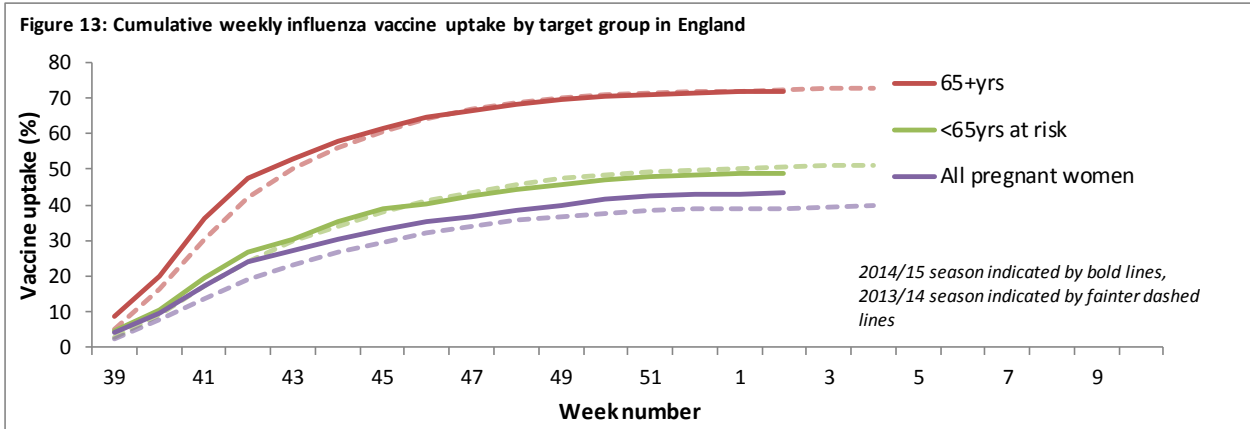
-Table 4 shows in the 12 weeks up to 4 January 2015, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenzae*, *Staphylococcus aureus*, MRSA and MSSA tested and susceptible to antibiotics. These organisms are the key causes of community acquired pneumonia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

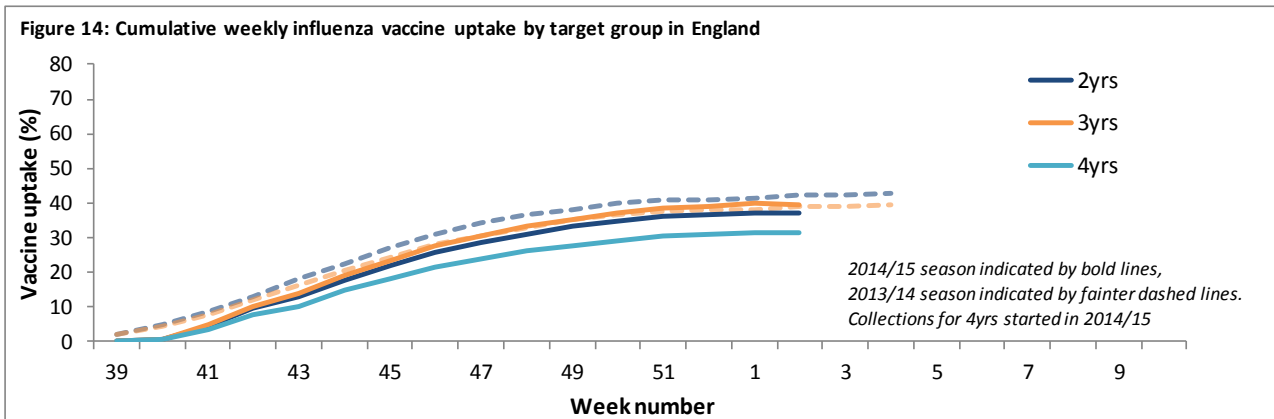
Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	2,451	91
	Macrolides	2,620	81
	Tetracycline	2,491	84
<i>H. influenzae</i>	Amoxicillin/ampicillin	9,649	73
	Co-amoxiclav	8,936	94
	Macrolides	3,635	18
<i>S. aureus</i>	Tetracycline	9,705	98
	Methicillin	3,749	86
MRSA	Macrolides	3,662	72
	Clindamycin	423	46
MSSA	Tetracycline	506	83
	Clindamycin	1,745	79
	Tetracycline	2,796	92

*Macrolides = erythromycin, azithromycin and clarithromycin

- Up to week 2 2015 in 83% 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):
 - 49.0% in under 65 years in a clinical risk group
 - 43.3% in pregnant women
 - 71.9% in 65+ year olds



- 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 2 2015 in 83% 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 14):
 - 37.0% in all 2 year olds
 - 39.7% in all 3 year olds
 - 31.5% in all 4 year olds



- Provisional data from the second monthly collection of influenza vaccine uptake by frontline healthcare workers show 48.2% were vaccinated by 30 November 2014 from 97.0% of Trusts, compared to 48.6% vaccinated the previous season by 30 November 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 second monthly collection of influenza vaccine uptake up to 30 November 2014 by targeted groups has been published. The [report](#) provides uptake at national, area team and CCG level.

Globally, influenza activity continued to increase in the northern hemisphere with influenza A(H3N2) continuing to dominate. In the European Region, the influenza season has started, with influenza A(H3N2) viruses the predominant viruses detected across all surveillance systems.

- [Europe](#) 09 January 2015 (Joint ECDC-WHO Influenza weekly update)

In week 01/2015, influenza activity remained low in most countries in the WHO European Region, but the number of countries with increased activity continued to rise compared to those in previous weeks. The level of influenza activity increased to medium in seven of the 35 reporting countries, while the proportion of sentinel specimens positive for influenza virus was 16% overall – similar to that in the previous week (17%) – but with a higher proportion positive (26%) in the western parts of the Region. The predominant influenza virus was type A, with A(H3N2) viruses predominating in primary care, among laboratory-confirmed hospitalized cases and other sources of information. Eleven of 13 countries reported A(H3N2) as the dominant type. The number of specimens tested was lower than in the previous week due to the holiday season.

Thirty-five countries reported epidemiological data in week 01/2015; 28 and Northern Ireland and Wales (United Kingdom), reported low intensity of influenza activity for week 01/2015. Of these, two (Germany and Slovenia) reported patterns of regional influenza activity, and 17 countries and Northern Ireland and Wales (United Kingdom) reported patterns of sporadic activity. Norway reported local activity and seven countries (Bulgaria, Cyprus, Hungary, the Republic of Moldova, Romania, Serbia and Ukraine) reported no influenza activity. Seven countries (Albania, Iceland, Malta, the Netherlands, Portugal, Sweden and the United Kingdom (England and Scotland)) reported medium intensity of influenza activity. Four of these (the Netherlands, Portugal, Sweden and the United Kingdom (England)) reported patterns of widespread activity, with laboratory-confirmed influenza cases in 50% or more of their administrative units (or reporting sites). Albania and Malta reported sporadic activity, while Iceland and the United Kingdom (Scotland) reported local influenza activity. Fourteen countries and Northern Ireland, Scotland and Wales (United Kingdom), an increase of 11 from the previous week, reported increasing influenza activity, while 17 and four countries reported stable and decreasing trends, respectively.

Since week 40/2014, the antigenic characteristics of 67 influenza viruses have been reported (Table 1). All 16 A(H1N1)pdm09 viruses characterized were A/California/7/2009-like. Of 35 A(H3N2) viruses characterized, 17 were A(H3N2) A/Texas/50/2012-like and 18 were A/Switzerland/9715293/2013-like; two viruses could not be ascribed to an antigenic category and further analyses will be conducted. Of the 16 influenza B viruses characterized, 14 were of the B/Yamagata/16/88-lineage (nine were B/Massachusetts/02/2012-like viruses, one B/Wisconsin/1/2010-like and four B/Phuket/3073/2013-like) and two were B/Brisbane/60/2008-like viruses of the Victoria lineage. Circulating A(H3N2) viruses appear to have drifted antigenically from the virus used in the vaccine. Although this does not change the recommendation to vaccinate groups at risk, the situation should be monitored carefully, and treatment guidelines must be disseminated to clinicians, including on use of antivirals. A(H3N2) is susceptible to the antivirals oseltamivir and zanamivir currently licensed in Europe.

Since week 40/2014, five countries (France, Ireland, Spain, Sweden and the United Kingdom) have reported a total of 516 laboratory-confirmed hospitalized influenza cases, 498 of which were in ICUs (428 cases reported in the United Kingdom, 59 in France, eight in Spain and three in Sweden). In addition to the patients admitted to ICUs, Ireland reported four and Spain 14 laboratory-confirmed hospitalized influenza cases in other hospital wards. Of the 516 confirmed cases, 492 (95%) were positive for influenza A virus (123 subtyped: 89 A(H3N2) and 34 A(H1N1)pdm09) and 24 for influenza B virus. This season, France, Spain and Sweden have reported six fatal influenza cases. Two of these cases were due to influenza A(H3N2), two to A(H1N1)pdm09, one to unsubtyped influenza A and one to influenza B virus. None of the fatal cases had been vaccinated against seasonal influenza. The age profiles of the fatal cases ranged from 30 to 86 years (median: 62 years).

- [United States of America](#) 09 January 2015 (Centre for Disease Control report)

During week 53 (December 28, 2014-January 3, 2015), influenza activity continued at elevated levels in the United States. The proportion of outpatient visits for influenza-like illness (ILI) was 5.6%, above the national baseline of 2.0%. All 10 regions reported ILI at or above region-specific baseline levels. Puerto Rico and 26 states experienced high ILI activity; New York City and eight states experienced moderate ILI activity; seven states experienced low ILI activity; eight states experienced minimal ILI activity; and the District of Columbia and one state had insufficient data. The geographic spread of influenza in Guam and 46 states was reported as widespread; Puerto Rico, the U.S. Virgin Islands and three states reported regional activity; and the District of Columbia and one state reported local activity. During week 53, 7.0% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was above the epidemic threshold of 6.9% for week 53.

Of 30,469 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 53, 7,515 (24.7%) were positive for influenza. (4,724 influenza A subtype not performed, 2,486 influenza A (H3), 297 influenza B and eight influenza A(H1N1)pdm09).

Five influenza-associated paediatric deaths were reported to CDC during week 53. All five deaths were associated with an influenza A virus for which no subtyping was performed and occurred during weeks 50, 51, 52, and 53 (weeks ending December 13, December 20, December 27, 2014, and January 3, 2015, respectively). A total of 26 influenza-associated deaths have been reported during the 2014-2015 season, reported from 13 states and New York City. Additional data can be found at: <http://gis.cdc.gov/GRASP/Fluview/PedFluDeath.html>.

CDC has characterized 355 influenza viruses [10 A(H1N1)pdm09, 288 A(H3N2), and 57 influenza B viruses] collected by U.S. laboratories since October 1, 2014. All 10 H1N1 viruses tested were characterized as A/California/7/2009-like, the influenza A (H1N1) component of the 2014-2015 Northern Hemisphere influenza vaccine. 91 (31.6%) of the 288 H3N2 viruses tested have been characterized as A/Texas/50/2012-like, the influenza A (H3N2) component of the 2014-2015 Northern Hemisphere influenza vaccine. 197 (68.4%) of the 288 viruses tested showed either reduced titres with antiserum produced against A/Texas/50/2012 or belonged to a genetic group that typically shows reduced titres to A/Texas/50/2012. Among viruses that showed reduced titres with antiserum raised against A/Texas/50/2012, most were antigenically similar to A/Switzerland/9715293/2013, the H3N2 virus selected for the 2015 Southern Hemisphere influenza vaccine. A/Switzerland/9715293/2013 is related to, but antigenically and genetically distinguishable, from the A/Texas/50/2012 vaccine virus. A/Switzerland-like H3N2 viruses were first detected in the United States in small numbers in March of 2014 and began to increase through the spring and summer.

- [Canada](#) 09 January 2015 (Public Health Agency report)

The percent positive for laboratory detections of influenza increased in week 52 but remained stable in week 53; perhaps indicating that we are nearing the peak in laboratory detections for the season. The majority of laboratory detections continued to be reported in AB, ON and QC; but with increasing activity in BC and MB. A(H3N2) continues to be the most common type of influenza affecting Canadians. In both laboratory detections, hospitalizations and deaths, the majority of cases have been among seniors ≥65 years of age. There were a large number of newly-reported laboratory-confirmed outbreaks of influenza over the two-week period (n=309). In week 53, there were 166 influenza outbreaks in 8 provinces, of which 122 were in long-term care facilities (LTCF).

To date, the NML has found that the majority of A(H3N2) influenza specimens are not optimally matched to the vaccine strain. This may result in reduced vaccine effectiveness against the A(H3N2) virus. However, the vaccine can still provide some protection against A(H3N2) influenza illness and can offer protection against other influenza strains such as A(H1N1) and B

The number of positive tests increased during weeks 52 and 53. In week 53, the number of positive influenza tests increased to 5,550 influenza detections from 3,723 in week 52. The percent positive for influenza A detections rose to 34.6% in week 52 and stayed relatively stable in week 53 at 34.2%. To date, 98% of influenza detections have been influenza A, and 99.8% of those subtyped have been A(H3). The timing of the season and predominant A(H3N2) subtype is similar to the pattern observed during the 2012-13 influenza season when percent positive for influenza peaked in week 52 (35%). To date, among the cases of influenza with reported age, the largest proportion was in adults ≥65 years of age (62%). The national influenza-like-illness (ILI) consultation increased in week 52 and 53 to 69.1 consultations per 1,000, which is above expected levels for week 53. In week 52, the rates were highest among the 20 to 64 years of age group (76.0 consultations per 1,000) and in week 53, the rates were highest among the adults ≥65 years of age (216.3 consultations per 1,000).

In week 53, 358 laboratory-confirmed influenza-associated hospitalizations were reported from participating provinces and territories; all but four with influenza A, and 70% were patients ≥65 years of age. Since the start of the 2014-15 season, 1302 hospitalizations have been reported; 1276 (98%) with influenza A. Among cases for which the subtype of influenza A was reported, 99% (660/662) were A(H3N2). The majority of cases (65%) were ≥65 years of age. A total of 50 ICU admissions have been reported and the majority (54%) have been in adults ≥65 years of age. A total of 69 deaths have been reported since the start of the season: one child <5 years of age, one adult 20-44 years, three adults 45-64 years and 64 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](#) 12 January 2015 (WHO website)

Globally influenza activity continued to increase in the northern hemisphere with influenza A(H3N2) viruses predominating so far this season. Antigenic characterization of most recent A(H3N2) viruses so far indicated differences from the A(H3N2) virus used in the influenza vaccines for the northern hemisphere 2014-2015. The tested influenza A(H3N2) viruses so far did show sensitivity to neuraminidase inhibitors.

In North America, the influenza season was ongoing with influenza activity still increasing in most areas. Influenza A(H3N2) was the predominant virus.

In Europe influenza activity was still low, but the season seemed to have started.

In eastern Asia, influenza activity increased with influenza A(H3N2) virus predominated.

In northern and western Africa influenza activity increased with influenza B virus predominant.

In tropical countries of the Americas, influenza activity increased in some countries of the Caribbean, decreased in Central America and was low in the tropical countries of South America.

In tropical Asia, influenza activity increased slightly but remained low with influenza B predominating.

In the southern hemisphere, influenza activity remained at low levels, though ILI activity remained high in several Pacific Islands.

- Enterovirus D68 (EV-D68) 08 January 2015

From mid-August to 8 January 2015, CDC or state public health laboratories have confirmed a total of [1,153 persons](#) in 49 states and the District of Columbia with respiratory illness caused by EV-D68. Almost all of the confirmed cases were among children, many whom had asthma or a history of wheezing. Additionally, there were likely millions of mild EV-D68 infections for which people did not seek medical treatment and/or get tested.

ECDC have published a [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.

The UK has an enhanced enterovirus surveillance system established as part of poliovirus elimination. Samples from individuals who present with neurological symptoms (such as acute flaccid paralysis or meningitis) and in whom enterovirus is detected should be sent for sub-typing at the reference laboratory. From 2012 to 1 September 2014, a total of 12 EV-D68 cases had been diagnosed, mainly in children. Following the reports from North America, guidance was developed highlighting that EV-D68 should be considered as a possible cause of disease in children with severe acute respiratory infections and/or with unexplained neurological symptoms, when all other respiratory virus screens are negative and if a rhinovirus/enterovirus positive PCR is initially detected. Although no unexplained clusters of severe respiratory or neurological disease have been reported, since September 2014, a total of 33 sporadic cases have been detected in children and adults. From the information available to date, the majority seem to have presented with respiratory symptoms, with two children presenting with neurological symptoms.

- [Avian Influenza](#) 07 January 2015(WHO website)

Influenza A(H7N9)

The most recent human infections with influenza A(H7N9) were reported by WHO on [27 December 2014](#) (13 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 6 January 2015, 694 human cases of H5N1 avian influenza have been officially reported to [WHO](#) from 16 countries, of which 402 (59%) died.

- Novel coronavirus 07 January 2015

Up to 22 December 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 937 confirmed cases have been reported internationally, resulting in a current global total of 941 cases, with the most recent cases reported on 26 December from [Kingdom of Saudi Arabia](#). Further information on management and guidance of possible cases is available [online](#).

Acknowledgements

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

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Disease severity and mortality data

- [USISS](#) system
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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](#))