



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

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Summary

Indicators of influenza activity are at low levels of intensity with evidence of sporadic detections of influenza. RSV is continuing to circulate.

- Overall weekly influenza GP consultation rates across the UK
 - In week 51 (ending 22 December 2013), overall weekly influenza GP consultations remained low in England (6.7 per 100,000), Wales (3.9 per 100,000), Scotland (9.2 per 100,000) and Northern Ireland (9.9 per 100,000).
 - In week 51 national attendances for acute respiratory infection remained high as expected at this time of year. Selected indicators of ILI activity remain stable and below seasonally expected levels.
 - Three new acute respiratory outbreaks have been reported in the past seven days in a hospital (parainfluenza) and in two care homes (not tested) across the UK.
- Virology
 - In week 51 2013, 13 influenza positive detections were recorded through the Datamart scheme (four A(H1N1)pdm09, two A(H3), six A(not subtyped) and one B, positivity of 2.0% compared to 1.7% in week 50).
 - One sample was positive for influenza through the English sentinel schemes (one A(H3), positivity of 9.1%).
- Disease severity and mortality
 - 12 new admissions to ICU/HDU with confirmed influenza (four A(H1N1)pdm09, seven A unknown subtype and one A(H3N2)) were reported through the USISS mandatory ICU surveillance scheme across the UK (131 Trusts in England) in week 51. 11 new hospitalised confirmed influenza cases were reported through the USISS sentinel hospital network across England (17 Trusts).
 - In week 50 2013, no excess all-cause mortality was seen across the UK through the EuroMOMO algorithm and none has been reported since week 40 2013. This data is provisional due to the time delay in death registration.
- Vaccination
 - Up to week 51 2013 in 82.3% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2013/14 influenza vaccine in targeted groups was as follows: 41.0% in all 2 year olds, 37.7% in all 3 year olds, 49.5% in under 65 years in a clinical risk group, 38.5% in all pregnant women and 71.6% in 65+ year olds.
 - Provisional data from the second monthly collection of influenza vaccine uptake by frontline healthcare workers show 48.6% were vaccinated by 30 November 2013 from 95.9% of Trusts, compared to 40.8% vaccinated the previous season by 30 November 2012.
- International situation
 - Overall influenza activity in North America continued to increase.
 - European countries continue to report low levels of influenza activity.

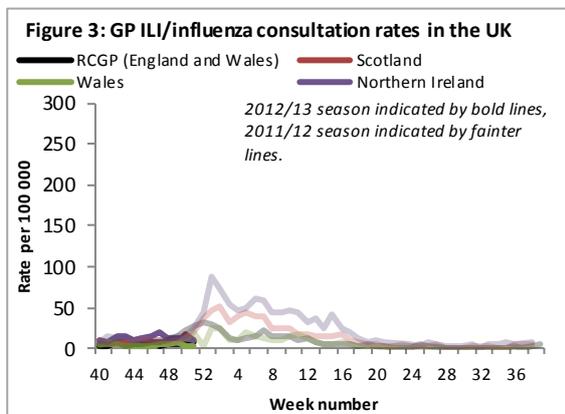
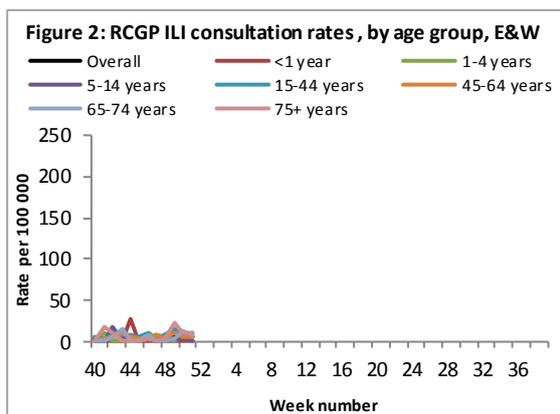
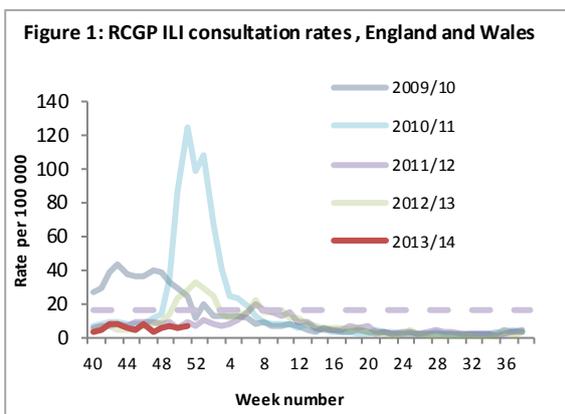
In week 51 (ending 22 December 2013), overall weekly influenza GP consultations remained low in England, Wales, Scotland and Northern Ireland.

- Influenza/Influenza-Like-Illness (ILI)

RCGP (England and Wales)

-The overall ILI consultation rate from RCGP for England and Wales remained stable in week 51 2013 (6.7 per 100,000) compared to week 50 (6.0 per 100,000) (Figure 1*). ILI rates increased in the North (from 5.3 to 9.0 per 100,000), and remained stable in the Central region (3.3 per 100,000) in the South (8.7 per 100,000).

-In week 51 2013, the highest rates were seen in 75+ year olds (10.4 per 100,000) and 15-44 year olds (9.4 per 100,000).



Northern Ireland

-The Northern Ireland influenza rate decreased from 13.7 per 100,000 in week 50 to 9.9 per 100,000 in week 51 (Figure 3).

-In week 51 2013, the highest rates were seen in 15-44 year olds (from 18.9 to 12.8 per 100,000) and 45-64 year olds (from 18.0 to 12.3 per 100,000).

Wales

-The Welsh influenza rate remained stable from 3.6 per 100,000 in week 50 to 3.9 per 100,000 in week 51 (Figure 3).

-The highest rate was seen in 1-4 year olds (from 0.0 to 8.8 per 100,000) followed by 15-44 year olds (from 4.2 to 5.2 per 100,000).

Scotland

-The Scottish ILI rate decreased from 16.7 per 100,000 in week 50 to 9.2 per 100,000 in week 51 (Figure 3).

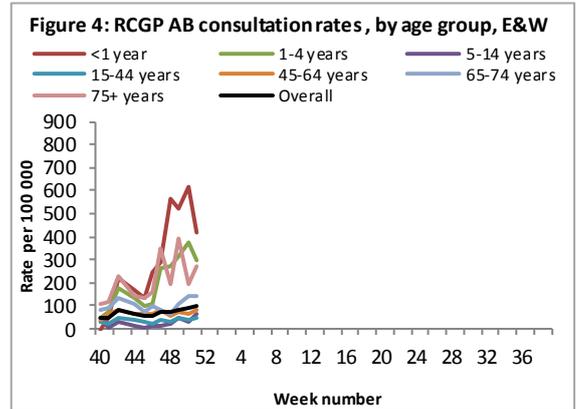
-The highest rate was seen in 15-44 year olds (from 20.1 to 11.3 per 100,000) followed by 75+ year olds (from 16.3 to 11.0 per 100,000).

*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 calculated for RCGP ILI consultation rates for 2013/14 is 15.6 per 100,000.

- Other respiratory indicators

Acute bronchitis (AB)

The overall weekly consultation rate for acute bronchitis (AB) in England and Wales through the RCGP scheme increased from 88.5 per 100,000 in week 50 to 101.0 per 100,000 in week 51 (Figure 4). The highest rates were seen in <1 year olds (417.5 per 100,000) and 1-4 year olds (297.2 per 100,000).



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In week 51 national attendances for acute respiratory infection remained high and three new acute respiratory outbreaks have been reported.

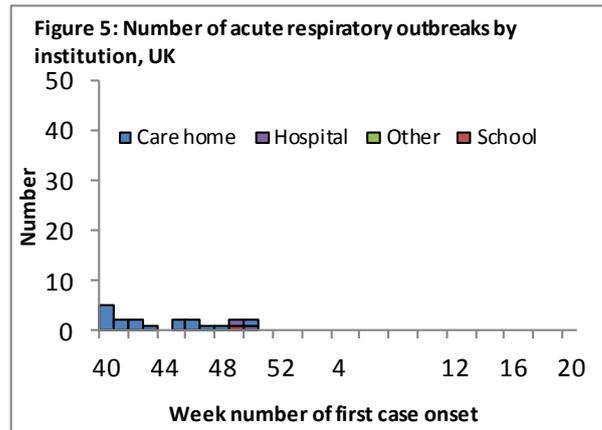
- PHE Real-time Syndromic Surveillance

-National attendances for acute respiratory infection remained high during week 51, as expected at this time of year. Selected indicators of ILI activity remain stable and below seasonally expected levels.
 -For further information, please see the syndromic surveillance [webpage](#).

- Acute respiratory disease outbreaks

-Three new acute respiratory outbreaks were reported in the last 7 days, two were in care homes (South of England (not tested) and Midlands and East of England (not tested)) and one in a hospital (Midlands and East of England (parainfluenza)). So far this season, 20 outbreaks have been reported in care homes, three in hospitals and one in schools (where tested, one influenza A not sub-typed, three rhinovirus, four RSV and three parainfluenza) (Figure 5).

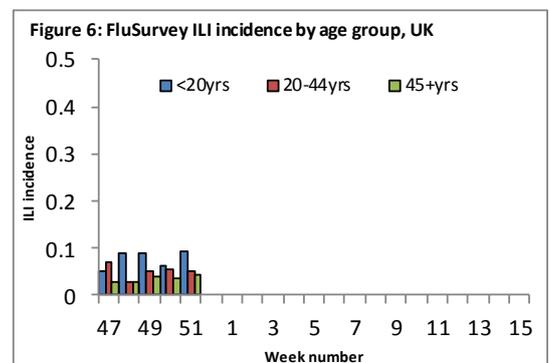
-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and Respcidsc@phe.gov.uk.



- 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.

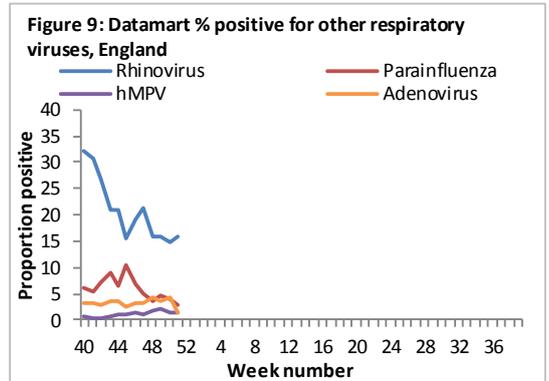
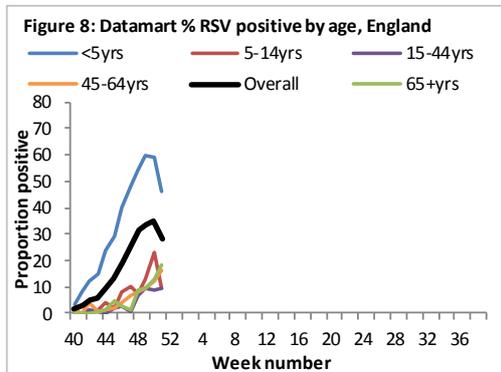
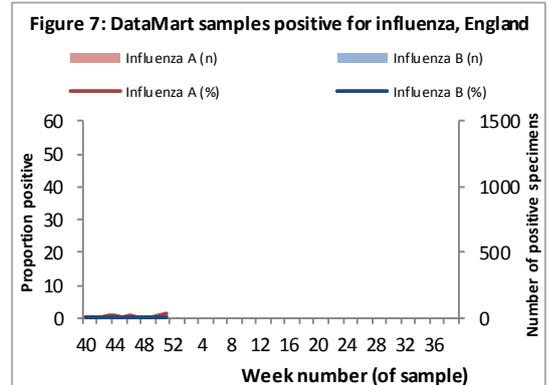
In week 51, the incidence of ILI reports was comparatively higher in <20 year olds than in week 50 (Figure 6).



In week 51 2013, 13 influenza positive detections were recorded through the DataMart scheme (four A(H1N1)pdm09, two A(H3), six A(not subtyped) and one B) and one sample was positive through the English sentinel schemes for influenza (one A(H3)).

- Respiratory DataMart System (England)

-In week 51 2013, out of the 646 respiratory specimens reported through the Respiratory Datamart System, four (0.6%) positive for flu A (H1N1) pdm09, two (0.3%) positive for influenza A(H3), six (0.9%) positive for flu A (not subtyped) and one sample was positive for influenza B (Figure 7). The overall positivity for RSV started to decrease from 33.8% in week 50 to 28.4% in week 51, with the highest positivity reported in the <5 years where there was a decrease from 58.2% in week 50 to 46.4% in week 51 (Figure 8). Positivity for rhinovirus increased slightly from 14.5% in week 50 to 15.9% in week 51. Positivity for parainfluenza decreased slightly to 2.8% in week 51. Other respiratory viruses remained at low levels: adenovirus 1.3% and hMPV 1.3% (Figure 9).



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

-One sample from England was positive for influenza Flu A(H3) and one sample was positive from Scotland for A(H1N1)pdm09 in week 51 (Table 1). No sample was positive for Northern Ireland scheme and no samples were tested through the Welsh schemes.

Table 1: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
48	0/64 (0%)	1/45 (2.2%)	0/2 (-)	0/0 (-)
49	3/95 (3.2%)	2/38 (5.3%)	0/2 (-)	0/0 (-)
50	6/57 (10.5%)	3/66 (4.5%)	0/3 (-)	0/0 (-)
51	1/11 (9.1%)	1/30 (3.3%)	0/2 (-)	0/0 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Virus characterisation

-Since week 40 2013, the PHE Respiratory Virus Unit (RVU) has isolated and antigenically characterised 18 influenza A(H3N2) viruses, all similar to the A/Texas/50/2012 H3N2 2013/14 vaccine strain, and 12 influenza A(H1N1)pdm09 viruses similar to the A/California/07/2009 vaccine strain for 2013/14. One influenza B isolate, belonging to the B-Yamagata lineage has been characterised.

- Antiviral susceptibility

Since week 40 2013, fifteen and six influenza viruses have been tested for Osetamivir and Zanamivir susceptibility, respectively, in the UK, and no virus has been found to be resistant so far in this season.

- Antimicrobial susceptibility

-In the 12 weeks up to 15 December 2013, 83% or greater of all lower respiratory tract isolates of *Staphylococcus aureus*, *Streptococcus pneumoniae* and *Haemophilus influenzae* reported as tested were susceptible to the antibiotics tetracycline and co-amoxiclav (Table 2). There have been no significant changes in susceptibility in recent years.

Table 2: Antimicrobial susceptibility surveillance in lower respiratory tract isolates, 12 weeks up to 15 Dec 2013, E&W

Organism	Tetracyclines		Co-amoxiclav	
	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
<i>S. aureus</i>	3,169	92	183	88
<i>S. pneumoniae</i>	2,048	83	2,149*	90*
<i>H. influenzae</i>	8,050	99	7,541	92

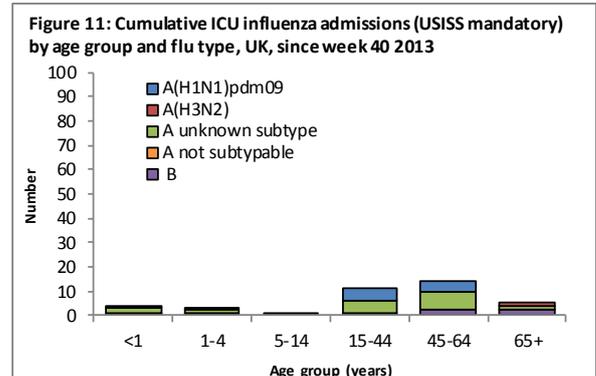
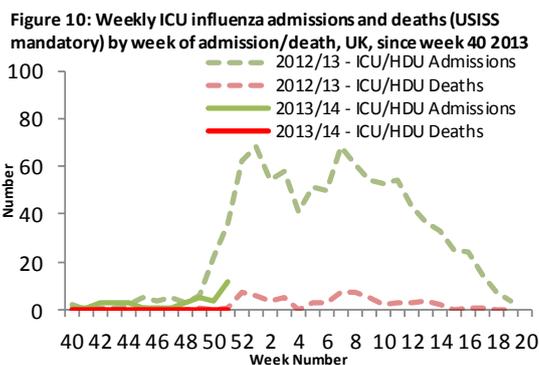
* *S. pneumoniae* isolates are not routinely tested for susceptibility to co-amoxiclav, however laboratory results for benzyl-penicillin are extrapolated to determine sensitivity to other beta-lactams such as co-amoxiclav.

In week 51, 12 new admissions of confirmed influenza cases to ICU/HDU (seven A unknown subtype, four A(H1N1)pdm09 and one A(H3N2)) and no confirmed influenza deaths in ICU/HDU have been reported through the national USISS mandatory ICU scheme across the UK (131 Trusts in England). 11 new hospitalised confirmed influenza cases have been reported through the USISS sentinel hospital network across England (17 Trusts).

A national mandatory collection (USISS mandatory ICU scheme) is operating in cooperation with the Department of Health to report the number of confirmed influenza cases admitted to Intensive Care Units (ICU) and High Dependency Units (HDU) and number of confirmed influenza deaths in ICU/HDU across the UK. A confirmed case is defined as an individual with a laboratory confirmed influenza infection admitted to ICU/HDU. In addition a sentinel network (USISS sentinel hospital network) of acute NHS trusts 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.

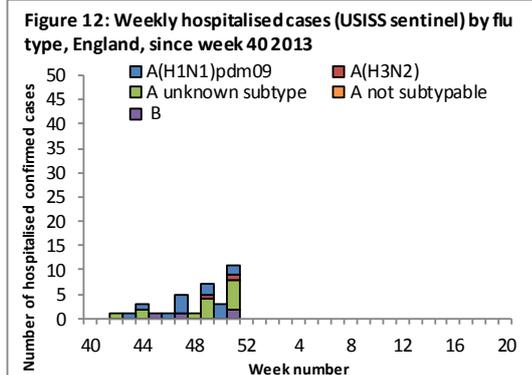
- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 51)

-In week 51, 12 new admissions to ICU/HDU with confirmed influenza infection (seven A unknown subtype, four A(H1N1)pdm09 and one A(H3N2)) were reported across the UK (131/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 10 and 11) compared to four in week 50. No new confirmed influenza deaths were reported in week 50 2013. A total of 38 admissions (12 A(H1N1)pdm09, 18 A(unknown), seven B and one A(H3N2)) and no confirmed influenza deaths have been reported since week 40 2013.



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 51)

-In week 51, 11 new hospitalised confirmed influenza case were reported through the USISS sentinel hospital network from 17 NHS Trusts across England (Figure 12) compared to three in week 50. A total of 34 hospitalised confirmed influenza admissions (14 A(H1N1)pdm09, 14 A unknown, four B and two A(H3N2)) have been reported since week 40 2013.



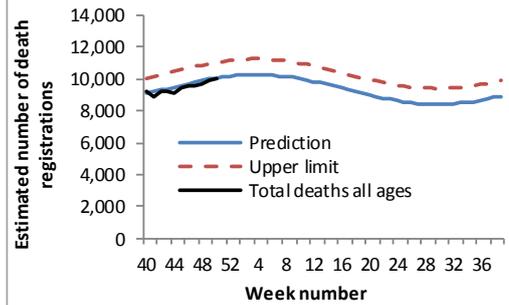
In week 50, no excess in all-cause mortality was seen across the UK overall, by age group or by region.

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 overall all-cause mortality, England and Wales

-In week 50 2013, an estimated 10,003 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is slightly more than the 9,908 estimated death registrations in week 49 but remains below the 95% upper limit of expected death registrations for this time of year as calculated by PHE (Figure 13).

Figure 13: Observed & predicted all-cause death registrations, E&W



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

-In week 50 2013, 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 14, Table 3). This data is provisional due to the time delay in registration and so numbers may vary from week to week.

-No excess mortality above the threshold through the same standardised algorithm was seen subnationally or in the devolved administrations (Table 4).

Table 3: Excess mortality by age group, England*

Age group (years)	Excess detected in week 50 2013?	Weeks with excess in 2013/14
<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

Figure 14: Excess mortality in 65+ year olds by week of death, EuroMOMO, England

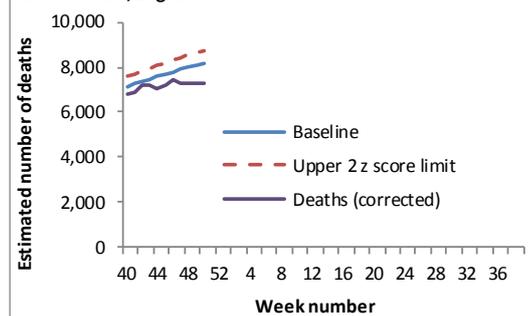


Table 4: Excess mortality by UK country*

Country	Excess detected in week 50 2013?	Weeks with excess in 2013/14
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

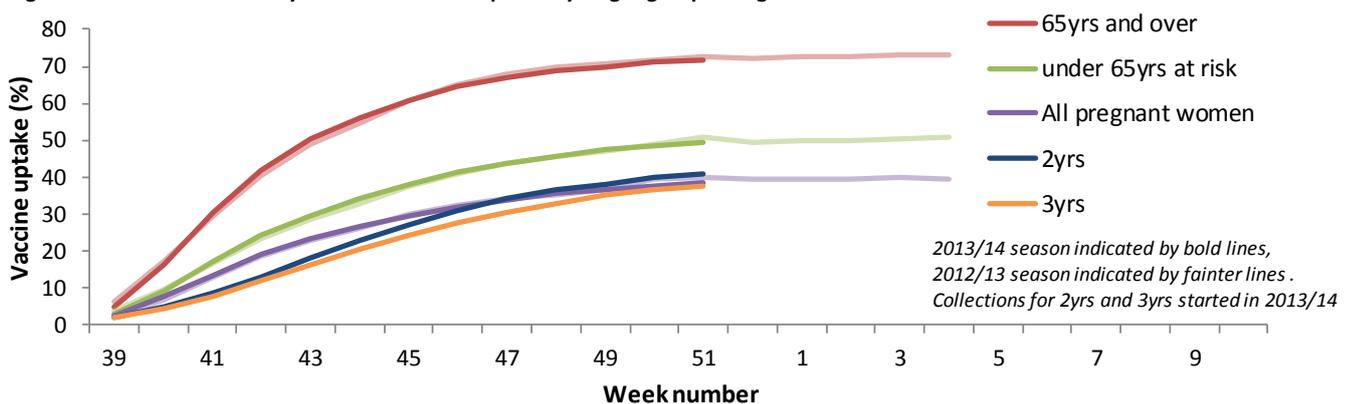
NB. Separate total and age-specific models are run for England which may lead to discrepancies between Tables 3 + 4

Vaccination

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- Up to week 51 2013 in 82.3% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2013/14 influenza vaccine in targeted groups was as follows (Figure 15):
 - 41.0% in all 2 year olds
 - 37.7% in all 3 year olds
 - 49.5% in under 65 years in a clinical risk group
 - 38.5% in all pregnant women
 - 71.6% in 65+ year olds

Figure 15: Cumulative weekly influenza vaccine uptake by target group in England



- In the second monthly collection up to 30 November 2013, provisional cumulative seasonal influenza vaccine uptake from 95.6% of GP practices was 68.8% in 65 years and over, 45.8% in under 65 year olds at risk, 35.8% in all pregnant women, 36.5% in all 2 year olds and 33.6% in all 3 year olds. The [report](#) provides uptake to Area Team level, CCG level and in key targeted groups.
- Provisional data from the second monthly collection of influenza vaccine uptake by frontline healthcare workers show 48.6% were vaccinated by 30 November 2013 from 95.9% of Trusts, compared to 40.8% vaccinated the previous season by 30 November 2012. The [report](#) provides uptake to Trust level.

International Situation

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Overall influenza activity in North America has increased. European countries continue to report low levels of influenza activity.

- [Europe](#) 20 December 2013 (European Centre for Disease Prevention and Control report)

For week 50/2013, clinical data were reported by 29 countries. Bulgaria reported medium-intensity influenza activity while the other reporting countries experienced low intensity, the lowest category of reporting. Geographic patterns of influenza activity were reported as sporadic by 13 countries, compared to eight in week 49/2013. All other countries reported no activity. Increasing trends were reported by Bulgaria, Greece, Ireland, Malta, Poland and Spain. All other countries reported stable trends. Among countries reporting influenza-virus-positive sentinel specimens, substantial increases in clinical rates were observed in Bulgaria and France only. Since both countries use the ARI case definition, known to be less influenza-specific, this may reflect the contribution of other respiratory pathogens.

For week 50/2013, 24 countries tested a total of 561 sentinel specimens, of which 45 (8%) from nine countries were positive for influenza virus. Since week 40/2013, of 121 sentinel specimens positive for influenza, 107 (88%) were type A and 14 (12%) were type B. Of 86 subtyped influenza viruses, 38 (44%) were A(H1)pdm09 and 48 (56%) were A(H3). Since week 40/2013, none of the 29 antigenically characterised viruses have differed substantially from the current vaccine strains.

Since week 40/2013, five countries have reported 40 hospitalised laboratory-confirmed influenza cases, of which seven were reported in week 50/2013 by four countries. One fatal case was reported by France for week 49/2013. Of the 40 hospitalised laboratory-confirmed influenza cases reported since week 40/2013, 29 were related to infection with influenza virus type A and 11 to infection with influenza virus type B.

- [United States of America](#) 20 December 2013 (Centre for Disease Control report)

During week 50 2013, influenza activity continued to increase in the United States.

Nationwide during week 50, 2.3% 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 above the national baseline of 2.0%. (*ILI is defined as fever (temperature of 100°F [37.8°C] or greater) and cough and/or sore throat.*) On a regional level, the percentage of outpatient visits for ILI ranged from 0.8% to 5.8% during week 50. Five regions (Regions 4, 5, 6, 7, and 8) reported a proportion of outpatient visits for ILI at or above their region-specific baseline level. Four states experienced high ILI activity, one state experienced moderate ILI activity; six states and New York City experienced low ILI activity, 37 states experienced minimal ILI activity and the District of Columbia and two states had insufficient data.

During week 50, 6.6% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.9% for week 50. Two influenza-associated pediatric deaths were reported to CDC during week 50. One death was associated with a 2009 H1N1 virus and occurred during the week ending December 14, 2013 (week 50). A total of four influenza-associated pediatric deaths for the 2013-2014 season have been reported. One death was associated with an influenza A virus for which no subtyping was performed and occurred during the 2012-13 season. This death brings the total number of reported pediatric deaths for that season to 170.

Of 7,294 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 50, 1,301 (17.8%) were positive for influenza. By type, 1,261 (96.9%) were influenza A (559 (44.3%) A(H1N1)pdm09, 686 subtyping not performed and 16 (1.3%) A(H3)) and 40 (3.1%) were influenza B.

- [Canada](#) 20 December 2013 (Public Health Agency report)

Influenza activity in Canada continued to increase in week 50. The number of regions that reported sporadic or localized influenza/ILI activity increased, with activity reported in 8 of the 10 provinces. Influenza A(H1N1)pdm09 remains the predominant influenza virus type this season. In week 50, four regions (in AB(1), ON(2) and QC(1)) reported localized activity and 25 regions (in BC(5), AB(4), SK(3), MB(1), ON(5), QC(4), NS(1), and NL(2)) reported sporadic activity. The national influenza-like-illness (ILI) consultation rate increased from 19.2/1,000 in week 49 to 25.7/1,000 in week 50. In week 50, 14 new laboratory-confirmed influenza-associated paediatric (≤ 16 years of age) hospitalizations were reported by the Immunization Monitoring Program Active (IMPACT) network. Thirteen were cases of influenza A: five A(H1N1)pdm09 and eight A(unknown subtype). Three cases were children under 6 months of age, two were 6-23 months of age, five were 2-4 years of age, one was 5-9 years of age and three were 10-16 years of age. Two ICU admissions were reported in week 50, one child 5-9 years of age with influenza B, and one 10-16 years of age with A(H1N1)pdm09. To date this season, a total of 53 influenza-associated paediatric hospitalizations have been reported by the IMPACT network, the majority of which have been influenza A. Eighteen (34%) of cases have been children under 2 years of age. Five ICU admissions have been reported: two cases with influenza B and three with A(H1N1)pdm09, all children 2 years of age or older. No deaths have been reported.

- [Global influenza update](#) 20 December 2013 (WHO website)

In North America the influenza season has started. The predominant subtype of influenza viruses detected was influenza A(H1N1)pdm09. For the rest of the northern hemisphere as well as in the southern hemisphere influenza activity remained low.

In countries of tropical areas variable influenza activity was reported.

Based on FluNet reporting (as of 19 December 2013, 07:15 UTC), during weeks 48 to 49 (24 November 2013 to 7 December 2013), National Influenza Centres (NICs) and other national influenza laboratories from 89 countries, areas or territories reported influenza surveillance data. The WHO GISRS laboratories tested more than 42 360 specimens. 3304 were positive for influenza viruses, of which 2816 (85.3%) were typed as seasonal influenza A and 487 (14.7%) as influenza B. Of the sub-typed seasonal influenza A viruses, 1166 (66.4%) were influenza A(H1N1)pdm09 and 591 (33.6%) were influenza A(H3N2). Of the characterized B viruses, 39 (70.9%) belonged to the B-Yamagata lineage and 16 (29.1%) to the B-Victoria lineage.

- [Avian Influenza](#) 17 December 2013 (WHO website)

Influenza A(H7N9)

Up to 17 December 2013, [143](#) cases of human infection with influenza A(H7N9) from China have been reported by WHO, including 45 deaths (case fatality ratio=32%). Two new laboratory-confirmed cases of human infection have been reported in the past week. The first patient is a 39-year-old man from Guangdong Province. He became ill on 6 December 2013 and was admitted to hospital on 11 December 2013. He is currently in critical condition. The second patient is a 65-year-old woman from Guangdong Province. She was exposed to live poultry and became ill on 11 December 2013 and was admitted to hospital on 15 December 2013. She is currently in critical condition. 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 to 10 December 2013, 648 human cases of H5N1 avian influenza have been officially reported to [WHO](#) from 15 countries, of which 384 (59%) died.

- Novel coronavirus 22 December 2013

Up to 22 December 2013, 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 108 suspect cases in the UK that have been investigated for MERS-CoV and tested negative. A further 159 confirmed cases have been reported internationally. This results in a current global total of [166 cases](#), 71 of which have died (case fatality ratio=43%). Further information on management and guidance of possible cases is available [online](#).

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

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

Community surveillance

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

Disease severity and mortality data

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

Vaccination

- 2012/13 seasonal influenza vaccine programme ([Department of Health Green Book](#))
- Childhood flu programme Q&A for healthcare professionals ([Public Health England](#))
- 2013/14 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))