



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 50 (ending 15 December 2013), overall weekly influenza GP consultations remained low in England (6.2 per 100,000), Wales (3.7 per 100,000), Scotland (16.6 per 100,000) and Northern Ireland (13.7 per 100,000)).
 - In week 50 there have been further national increases in bronchitis/bronchiolitis in infants consistent with increasing respiratory syncytial virus (RSV) activity. Selected indicators of ILI activity remain stable and below seasonally expected levels.
 - Four new acute respiratory outbreaks have been reported in the past seven days in a school (not tested), a care home (RSV) and in two hospitals (one parainfluenza and one not tested) across the UK.
- Virology
 - In week 50 2013, 20 influenza positive detections were recorded through the DataMart scheme (seven A(H1N1)pdm09, nine A(H3), one A(not subtyped) and three B, positivity of 1.7% compared to 1.1% in week 49).
 - Four samples were positive for influenza through the English sentinel schemes (two A(H1N1)pdm09 and two A(H3), positivity of 8%).
- Disease severity and mortality
 - Three new admissions to ICU/HDU with confirmed influenza (one A(H1N1)pdm09 and two A unknown subtype) were reported through the USISS mandatory ICU surveillance scheme across the UK (144 Trusts in England) in week 50. Three new hospitalised confirmed influenza cases were reported through the USISS sentinel hospital network across England (26 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 50 2013 in 83.4% 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: 39.8% in all 2 year olds, 36.7% in all 3 year olds, 48.6% in under 65 years in a clinical risk group, 37.7% in all pregnant women and 71.0% 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 has increased.
 - European countries continue to report low levels of influenza activity.

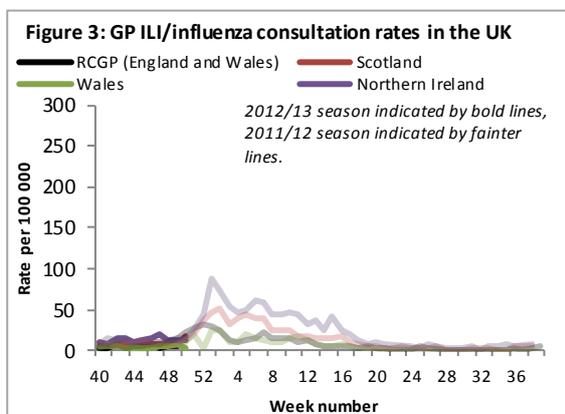
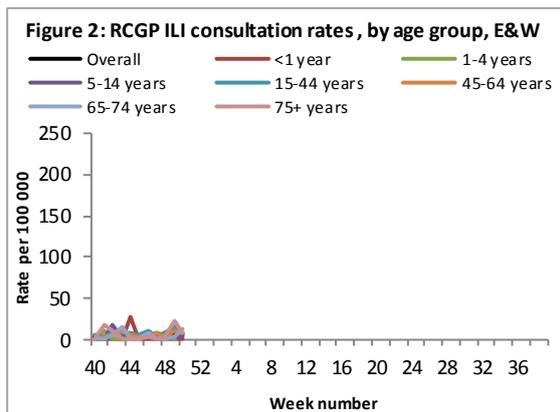
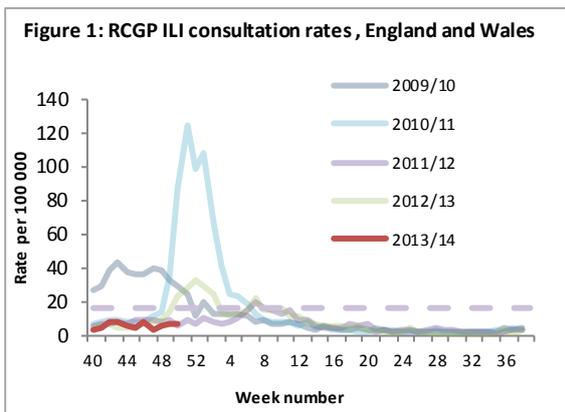
In week 50 (ending 15 December 2013), overall weekly influenza GP consultations remained low in England, Wales, Scotland and Northern Ireland.

- Influenza/Influenza-Like-Illness (ILI)

RCGP (England and Wales)

-The overall ILI consultation rate from RCGP for England and Wales remained stable in week 50 2013 (6.2 per 100,000) compared to week 49 (6.6 per 100,000) (Figure 1*). ILI rates decreased in the North (from 8.8 to 5.3 per 100,000), increased in the Central region (5.3 per 100,000) and remained stable in the South (7.6 per 100,000).

-In week 50 2013, the highest rates were seen in 65-74 year olds (14.0 per 100,000) and 15-24 year olds (9.5 per 100,000).



Northern Ireland

-The Northern Ireland influenza rate remained stable from 12.7 per 100,000 in week 49 to 13.7 per 100,000 in week 50 (Figure 3).

-In week 50 2013, the highest rates were seen in 15-44 year olds (from 13.8 to 18.9 per 100,000) and 45-64 year olds (from 18.0 to 18.0 per 100,000).

Wales

-The Welsh influenza rate decreased from 7.2 per 100,000 in week 49 to 3.7 per 100,000 in week 50 (Figure 3).

-The highest rate was seen in 45-64 year olds (from 6.0 to 7.7 per 100,000) followed by 15-44 year olds (from 9.8 to 4.3 per 100,000).

Scotland

-The Scottish ILI rate increased from 7.7 per 100,000 in week 49 to 16.6 per 100,000 in week 50 (Figure 3).

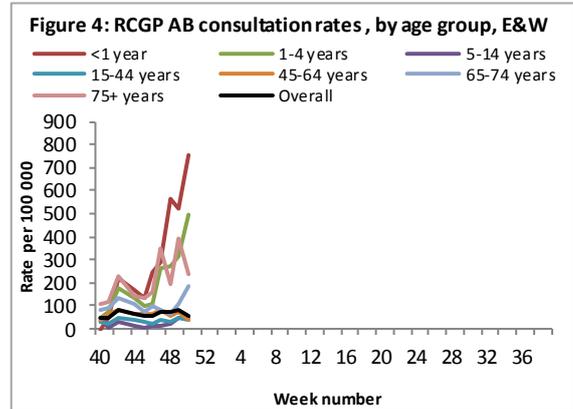
-The highest rate was seen in 15-44 year olds (from 8.1 to 19.8 per 100,000) followed by 45-64 year olds (from 8.9 to 17.9 per 100,000).

*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 decreased from 80.7 per 100,000 in week 49 to 55.0 per 100,000 in week 50 (Figure 4). The highest rates were seen in <1 year olds (754.7 per 100,000) and 1-4 year olds (495.6 per 100,000).



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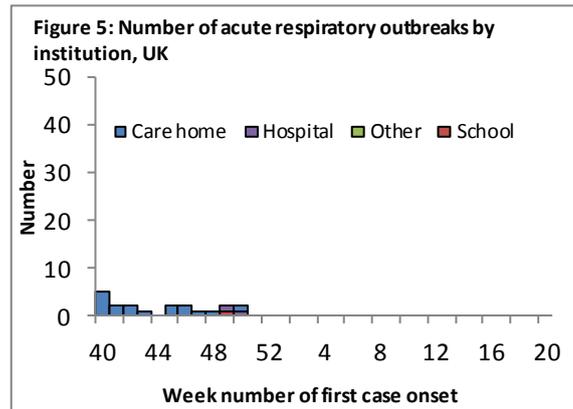
In week 50 there have been further national increases in bronchitis/bronchiolitis in infants and four new acute respiratory outbreaks have been reported.

- PHE Real-time Syndromic Surveillance

-In week 50 there have been further national increases in bronchitis/bronchiolitis in infants consistent with increasing respiratory syncytial virus (RSV) activity. Selected indicators of ILI activity remain stable and below seasonally expected levels.
 -For further information, please see the syndromic surveillance [webpage](#).

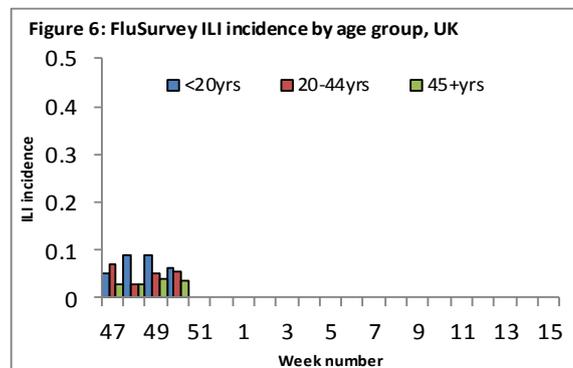
- Acute respiratory disease outbreaks

- Four new acute respiratory outbreaks were reported in the last 7 days, two were in hospitals (one in the Midlands and East of England (not tested) and one in Scotland with parainfluenza positive), one in a care home in Scotland (RSV), and one in a school in the South of England (not tested). So far this season, 18 outbreaks have been reported in care homes, two in hospitals and one in a school (where tested, one influenza A not sub-typed, three rhinovirus, three RSV and two 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 50, the incidence of ILI reports was comparatively higher in 20-44 year olds than in week 49 (Figure 6).



In week 50 2013, 20 influenza positive detections were recorded through the DataMart scheme (seven A(H1N1)pdm09, nine A(H3), one A(not subtyped) and three B) and four samples were positive through the UK sentinel schemes for influenza (two A(H3) and two A(H1N1)pdm09).

• Respiratory DataMart System (England)

-In week 50 2013, out of the 1165 respiratory specimens reported through the Respiratory Datamart System, seven (0.6%) positive for flu A (H1N1) pdm09, nine(0.8%) positive for influenza A(H3), one positive for flu A (not subtyped) and three samples were positive for influenza B (Figure 7). The overall positivity for RSV continued to increase from 33.0% in week 49 to 34.8% in week 50, with the highest positivity reported in the <5 years with an increase from 58.1% in week 49 to 59.3% in week 50 (Figure 8). Positivity for rhinovirus decreased slightly from 15.5% in week 49 to 14.8% in week 50. Positivity for parainfluenza remained stable at 4.0% in week 50. Other respiratory viruses remained at low levels: adenovirus 4.2% and hMPV 1.3% (Figure 9).

Figure 7: DataMart samples positive for influenza, England

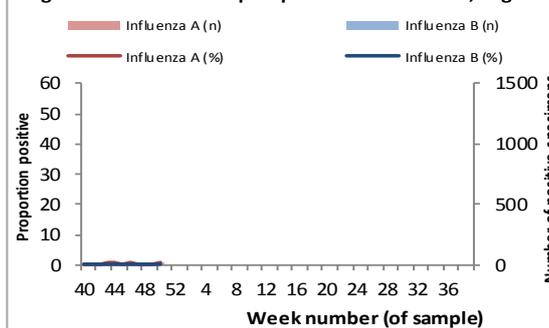


Figure 8: Datamart % RSV positive by age, England

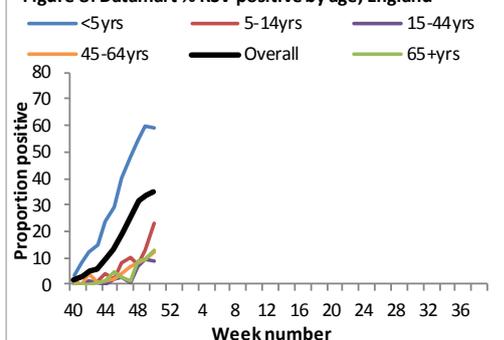
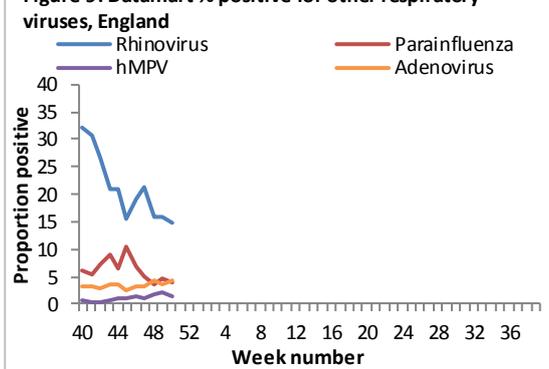


Figure 9: Datamart % positive for other respiratory viruses, England



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

-Two samples from England was positive for influenza A(H1N1)pdm09 and two positive for Flu A(H3) in week 50 (Table 1). No samples were positive for Scotland and 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
47	0/43 (0%)	0/52 (0%)	1/8 (-)	0/0 (-)
48	0/64 (0%)	1/45 (2.2%)	0/2 (-)	0/0 (-)
49	3/95 (3.2%)	2/37 (5.4%)	0/2 (-)	0/0 (-)
50	4/50 (8%)	0/33 (0%)	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 14 influenza A(H3N2) viruses, all similar to the A/Texas/50/2012 H3N2 2013/14 vaccine strain, and 8 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, thirteen 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 8 December 2013, 82% 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 8 Dec 2013, E&W

Organism	Tetracyclines		Co-amoxiclav	
	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
<i>S. aureus</i>	3,225	92	182	88
<i>S. pneumoniae</i>	1,981	82	2077*	90*
<i>H. influenzae</i>	7,966	99	7,460	92

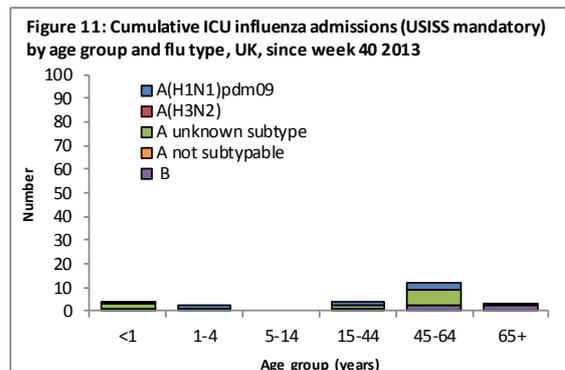
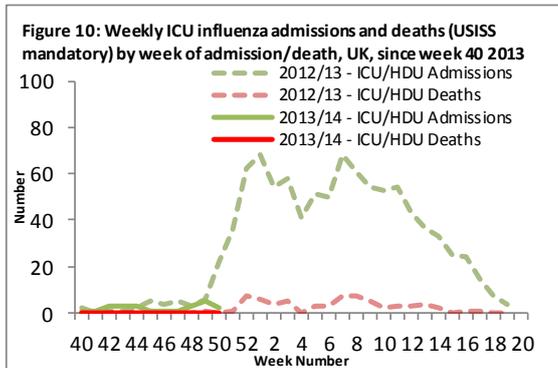
* *S. pneumoniae* isolates are not routinely tested for susceptibility to co-amoxiclav, however laboratory results for benzyl-penicillin are extrapolated to determine sensitivity to other beta-lactams such as co-amoxiclav.

In week 50, three new admissions of confirmed influenza cases to ICU/HDU (one A(H1N1)pdm09 and two A unknown subtype) and no confirmed influenza deaths in ICU/HDU have been reported through the national USISS mandatory ICU scheme across the UK (144 Trusts in England). Three new hospitalised confirmed influenza cases have been reported through the USISS sentinel hospital network across England (26 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.

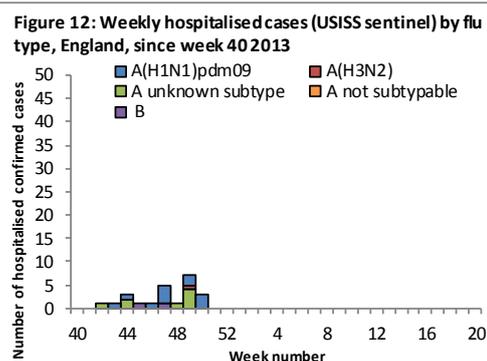
- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 50)

-In week 50, three new admissions to ICU/HDU with confirmed influenza infection (one A(H1N1)pdm09 and two A unknown subtype) were reported across the UK (144/156 Trusts in England) through the USISS mandatory ICU scheme (Figures 10 and 11) compared to five in week 49. No new confirmed influenza deaths were reported in week 50 2013. A total of 25 admissions (seven A(H1N1)pdm09, 11 A(unknown) and seven B) and no confirmed influenza deaths have been reported since week 40 2013.



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 50)

-In week 50, three new hospitalised confirmed influenza case were reported through the USISS sentinel hospital network from 26 NHS Trusts across England (Figure 12) compared to seven in week 49. A total of 23 hospitalised confirmed influenza admissions (12 A(H1N1)pdm09, eight A unknown, two B and one H3N2) have been reported since week 40 2013.



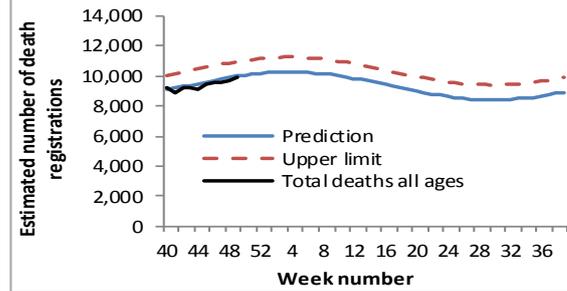
In week 50, no excess in all-cause mortality was seen across the UK overall, by age group or by region.

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 49 2013, an estimated 9,908 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is slightly more than the 9,636 estimated death registrations in week 48 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

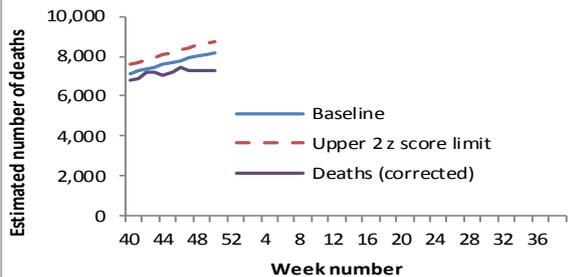
Table 4: Excess mortality by UK country*

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

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

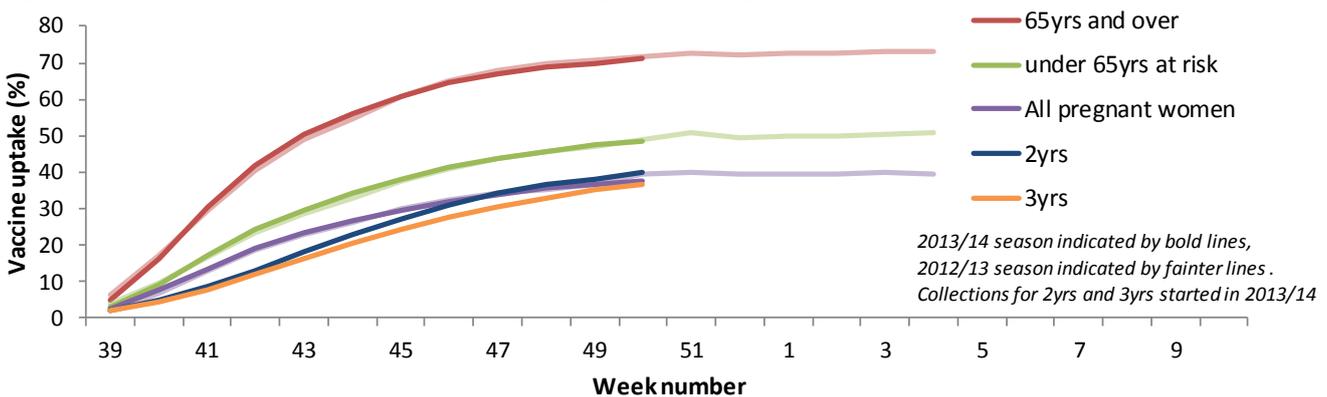


Vaccination

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- Up to week 50 2013 in 83.4% 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):
 - 39.8% in all 2 year olds
 - 36.7% in all 3 year olds
 - 48.6% in under 65 years in a clinical risk group
 - 37.7% in all pregnant women
 - 71.0% 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](#) 13 December 2013 (European Centre for Disease Prevention and Control report)

For week 49/2013, clinical data were reported by 29 countries, all of which experienced low-intensity influenza activity, the lowest category of reporting. Geographic patterns of influenza activity were reported as sporadic by eight countries. All other countries reported no activity. Increasing trends were reported by Bulgaria, Lithuania, Poland, and Romania. All other countries reported stable trends.

In week 49/2013, 24 countries tested a total of 428 sentinel specimens, of which 13 (3%) were positive for influenza viruses in five countries: France, Ireland, Italy, Spain and the UK (Scotland). Since week 40/2013, of 66 sentinel specimens positive for influenza virus, 54 (82%) were type A and 12 (18%) were type B. Of 42 subtyped influenza A viruses, 23 (55%) were A(H1N1)pdm09 and 19 (45%) were A(H3). Since week 40/2013, none of the 27 antigenically characterised viruses have differed substantially from the current vaccine strains recommended by WHO.

Since week 40/2013, five countries have reported 30 hospitalised laboratory-confirmed influenza cases, of which eight were reported by four countries in week 49/2013. Of the 30 hospitalised laboratory-confirmed influenza cases reported since week 40/2013, 19 cases were related to infection with influenza virus type A and 11 to infection with influenza virus type B

- [United States of America](#) 13 December 2013 (Centre for Disease Control report)

During week 49 2013, influenza activity continued to increase in the United States

Nationwide during week 49, 2.1% 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 5.2% during week 49. Three regions (Regions 4, 6, and 8) reported a proportion of outpatient visits for ILI above their region-specific baseline level. The proportion of outpatient visits for influenza-like illness (ILI) was 2.1%, above the national baseline of 2.0%. Three regions reported ILI above region-specific baseline levels. Four states experienced high ILI activity, five states and New York City experienced low ILI activity, 41 states experienced minimal ILI activity and the District of Columbia had insufficient data.

During week 49, 6.2% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.8% for week 49. No influenza-associated pediatric deaths were reported to CDC during week 49. A total of three influenza-associated pediatric deaths for the 2013-2014 season have been reported.

Of 6,219 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 49, 830 (13.3%) were positive for influenza. By type, 780 (94.0%) were influenza A (381 (48.8%) A(H1N1)pdm09, 385 subtyping not performed and 14 (1.8%) A(H3)) and 50 (6.0%) were influenza B.

- [Canada](#) 12 December 2013 (Public Health Agency report)

Influenza activity in Canada continued to increase in week 49 with three regions reporting localized influenza/ILI activity and 23 reporting sporadic activity. Influenza A remains the predominant influenza virus type this season (87%), and among subtyped influenza A specimens, 83% were A(H1N1)pdm09. In week 49, two regions in Ontario and one in Quebec reported localized activity and 23 regions (in BC(5), AB(4),

SK(3), MB(1), ON(5), QC(4) and YT(1)) reported sporadic activity. The national influenza-like-illness (ILI) consultation rate decreased from 24.9/1,000 in week 48 to 18.7/1,000 in week 49. In week 49, one new influenza outbreak was reported in a hospital and one outbreak of influenza/ILI was reported in a school. To date this season, a total of 38 influenza-associated paediatric hospitalizations have been reported by the IMPACT network, the majority of which have been influenza A. Twelve (31.6%) of cases have been children under 2 years of age. Three ICU admissions have been reported, two children 2-4 years of age, one with influenza A(H1N1)pdm09 and one with influenza B; and one child 10-16 years of age with A(H1N1)pdm09. No deaths have been reported

- [Global influenza update](#) 9 December 2013 (WHO website)

Overall influenza activity worldwide remained low. Influenza activity in North America remained low in general. Low levels of influenza activity in the WHO European Region continued with sporadic detections of influenza viruses reported from a few countries. In Asia, influenza activity slightly increased in Mongolia and the north of China. While in the south of China, slightly increased activity was observed. In Southeast Asia, influenza activity decreased in Lao People's Democratic Republic, Thailand and Viet Nam. In this area, low levels of co-circulation of influenza A(H1N1)pdm09, influenza A(H3N2) and influenza B virus was reported.

In the Caribbean region of Central America and tropical South America countries, reported cases of influenza A infection remained at low levels. Respiratory syncytial virus (RSV) continued to predominate in certain countries, but within expected seasonal levels.

Influenza activity in the southern hemisphere is largely over.

- [Avian Influenza](#) 10 December 2013 (WHO website)

Influenza A(H7N9)

Up to 10 December 2013, [141](#) 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 were reported. The first patient is a 57-year-old man from Zhejiang Province. He became ill on 20 November 2013 and was admitted to hospital on 25 November 2013. He is currently in critical condition. The second patient is a 30-year-old man from Zhejiang Province. He became ill on 29 November 2013 and was admitted to hospital on 5 December 2013. He is currently in critical condition. He is the son-in-law of the 57-year-old male from Zhejiang Province with onset on 20 November 2013, reported above. 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 17 December 2013

Up to 17 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 [165 cases](#), 71 of which have died (case fatality ratio=43%). 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.

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 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](#))