



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 suggesting minimal transmission at present, though RSV is continuing to circulate.

- Overall weekly influenza GP consultation rates across the UK
 - In week 49 (ending 8 December 2013), overall weekly influenza GP consultations remained low in England (6.6 per 100,000), Wales (8.1 per 100,000), Scotland (7.6 per 100,000) and Northern Ireland (12.7 per 100,000)).
 - In week 49 there have been further national increases in acute respiratory infection syndromic indicators, particularly in children <5 years old, in line with seasonal expectations. This is consistent with increasing respiratory syncytial virus (RSV) activity. Selected indicators of ILI activity remain stable and below seasonally expected levels.
 - One new acute respiratory outbreak has been reported in the past seven days in a care home (one RSV).
- Virology
 - In week 49 2013, 12 influenza positive detections were recorded through the DataMart scheme (seven A(H1N1)pdm09, four A(H3) and one B, positivity of 1.1% compared to 0.4% in week 48).
 - One sample was positive for influenza B through the UK sentinel schemes.
- Disease severity and mortality
 - Five new admissions to ICU/HDU with confirmed influenza (three 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 49. Seven new hospitalised confirmed influenza cases were reported through the USISS sentinel hospital network across England (29 Trusts).
 - In week 49 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 49 2013 in 82.5% 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: 38.2% in all 2 year olds, 35.2% in all 3 year olds, 47.3% in under 65 years in a clinical risk group, 36.8% in all pregnant women and 70.0% in 65+ year olds.
 - Provisional data from the first monthly collection of influenza vaccine uptake by frontline healthcare workers show 35.0% were vaccinated by 31 October 2013 from 94.9% of Trusts, compared to 28.4% vaccinated the previous season by 31 October 2012.
- International situation
 - 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.

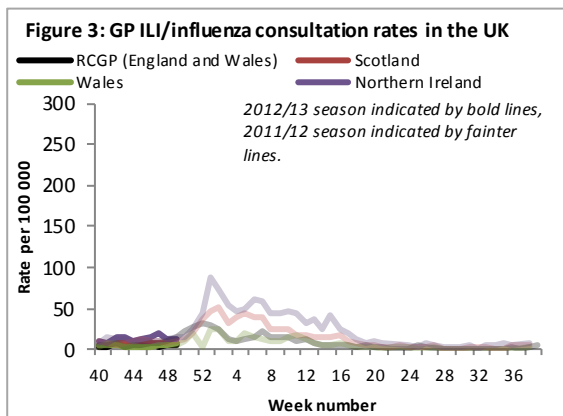
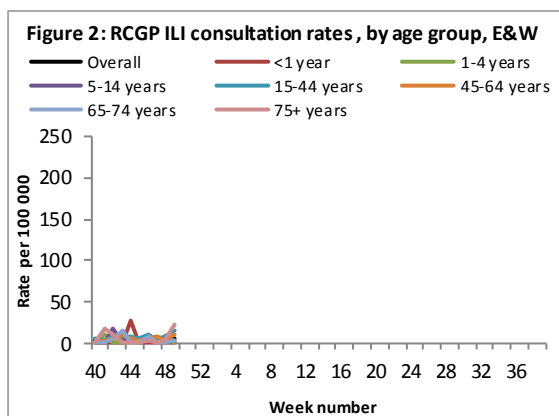
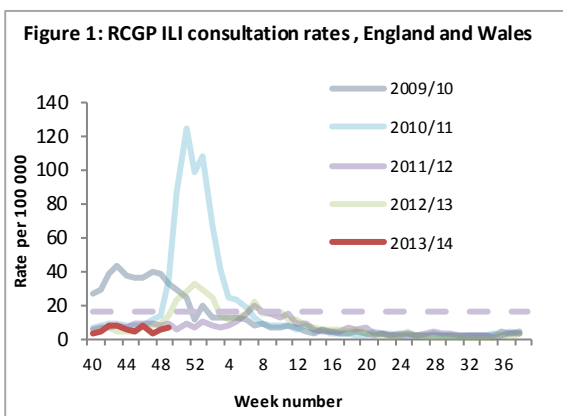
In week 49 (ending 8 December 2013), overall weekly influenza GP consultations remained low in England, Wales, Scotland and Northern Ireland.

- Influenza/Influenza-Like-Illness (ILI)

RCGP (England and Wales)

-The overall ILI consultation rate from RCGP for England and Wales remained stable in week 49 2013 (6.6 per 100,000) compared to week 48 (5.5 per 100,000) (Figure 1*). ILI rates increased in the North (from 3.2 to 8.8 per 100,000) and remained stable in the South (9.0 per 100,000) and Central regions (2.7 per 100,000).

-In week 49 2013, the highest rates were seen in 75+ year olds (21.5 per 100,000) and 15-44 year olds (14.2 per 100,000).



Northern Ireland

-The Northern Ireland influenza rate remained stable from 11.9 per 100,000 in week 48 to 12.7 per 100,000 in week 49 (Figure 3).

-In week 49 2013, the highest rates were seen in 45-64 year olds (from 12.2 to 18.0 per 100,000) and 15-44 year olds (from 10.3 to 13.8 per 100,000).

Wales

-The Welsh influenza rate increased from 4.9 per 100,000 in week 48 to 8.1 per 100,000 in week 49 (Figure 3).

-The highest rate was seen in 15-44 year olds (from 8.1 to 10.9 per 100,000) followed by 65-74 year olds (from 0.0 to 10.1 per 100,000).

Scotland

-The Scottish ILI rate remained stable from 8.7 per 100,000 in week 48 to 7.6 per 100,000 in week 49 (Figure 3).

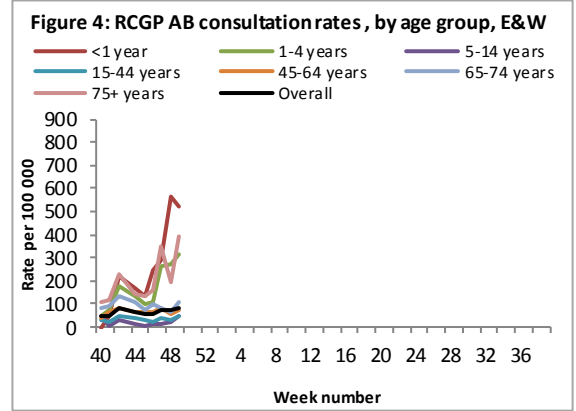
-The highest rate was seen in 75+ year olds (from 11.5 to 8.8 per 100,000) followed by 45-64 year olds (from 9.6 to 8.6 per 100,000).

*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 slightly from 70.6 per 100,000 in week 48 to 80.7 per 100,000 in week 49 (Figure 4). The highest rates were seen in <1 year olds (525.8 per 100,000) and 75+ year olds (391.3 per 100,000).



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In week 49 there have been further national increases in acute respiratory infection syndromic indicators and one new acute respiratory outbreak has been reported.

- PHE Real-time Syndromic Surveillance

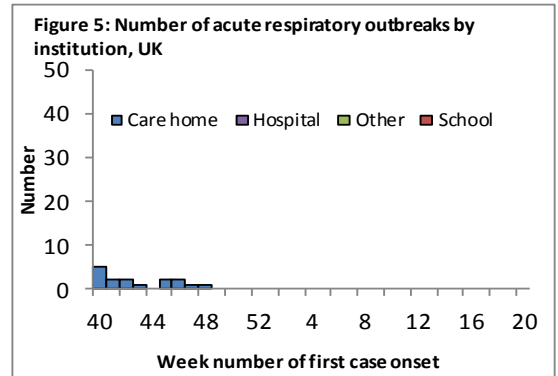
-In week 49 there have been further national increases in acute respiratory infection syndromic indicators, particularly in children <5 years old, in line with seasonal expectations. This is consistent with increasing respiratory syncytial virus (RSV) activity. Selected indicators of ILI activity remain stable and below seasonally expected levels.

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

- Acute respiratory disease outbreaks

-One new acute respiratory outbreak was reported in the last 7 days in a care home in South of England and it tested positive for RSV. So far this season, all 17 outbreaks have been reported in care homes (where tested, one influenza A not sub-typed, three rhinovirus, two RSV and one parainfluenza) (Figure 5).

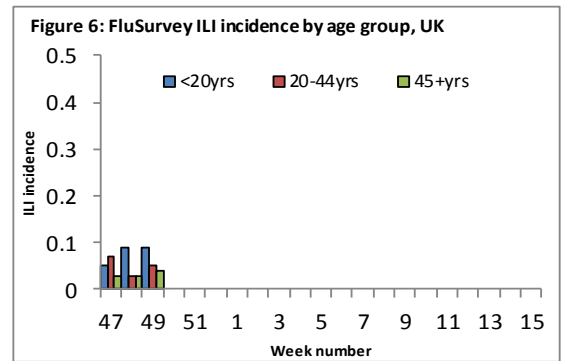
-Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and Respcidsc@phe.gov.uk.



- 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 49, the incidence of ILI reports was highest in <20 year olds (Figure 6).



In week 49 2013, 12 influenza positive detections were recorded through the DataMart scheme (seven A(H1N1)pdm09, four A(H3) and one B) and one sample was positive through the UK sentinel schemes for influenza B.

- Respiratory DataMart System (England)

- In week 49 2013, out of the 1090 respiratory specimens reported through the Respiratory Datamart System, seven (0.6%) positive for flu A (H1N1) pdm09, four (0.4%) positive for influenza A(H3) and one sample was positive for influenza B (Figure 7). The overall positivity for RSV continued to increase from 31.4% in week 48 to 33.7% in week 49, with the highest positivity reported in the <5 years with an increase from 53.9% in week 48 to 59.6% in week 49 (Figure 8). Positivity for rhinovirus remained stable at 16.0% in week 49. Positivity for parainfluenza remained stable at 4.7% in week 49. Other respiratory viruses remained at low levels: adenovirus 3.5% and hMPV 2.0% (Figure 9).

Figure 7: DataMart samples positive for influenza, England

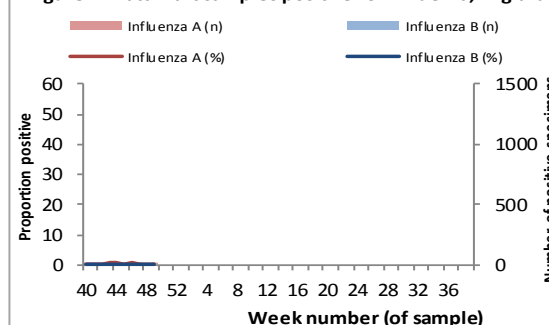


Figure 8: Datamart % RSV positive by age, England

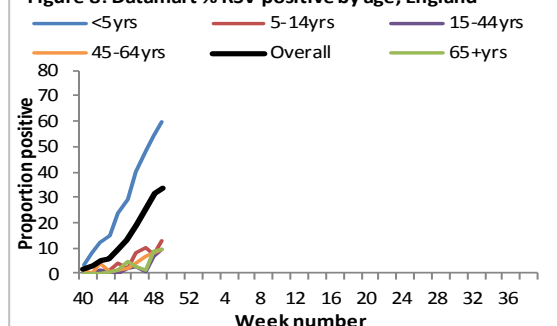
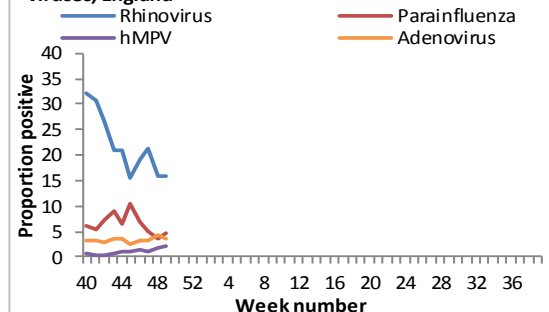


Figure 9: Datamart % positive for other respiratory viruses, England



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

-One sample from the Scotland was positive for influenza B in week 49 (Table 1). No samples were tested through the England, Northern Ireland and Welsh schemes.

Table 1: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
46	0/76 (0%)	0/59 (0%)	0/4 (-)	0/0 (-)
47	0/33 (0%)	0/51 (0%)	1/8 (-)	0/0 (-)
48	0/0 (-)	1/43 (2.3%)	0/2 (-)	0/0 (-)
49	0/0 (-)	1/24 (4.2%)	0/0 (-)	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 7 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 1 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 1 Dec 2013, E&W

Organism	Tetracyclines		Co-amoxiclav	
	Specimens tested (N)	Specimens susceptible (%)	Specimens tested (N)	Specimens susceptible (%)
<i>S. aureus</i>	3,227	92	185	88
<i>S. pneumoniae</i>	1,929	82	2012*	90*
<i>H. influenzae</i>	7,833	98	7,321	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 49, five new admissions of confirmed influenza cases to ICU/HDU (three 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). Seven new hospitalised confirmed influenza cases have been reported through the USISS sentinel hospital network across England (29 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 49)

-In week 49, five new admissions to ICU/HDU with confirmed influenza infection (three 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). No new confirmed influenza deaths were reported in week 49 2013. A total of 22 admissions (six A(H1N1)pdm09, nine A(unknown) and seven B) and no confirmed influenza deaths have been reported since week 40 2013.

Figure 10: Weekly ICU influenza admissions and deaths (USISS mandatory) by week of admission/death, UK, since week 40 2013

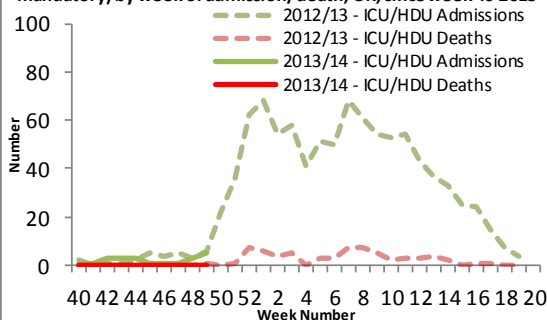
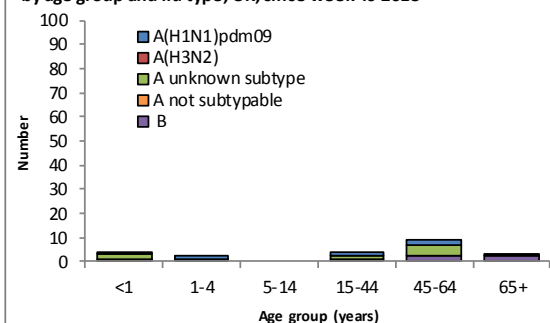


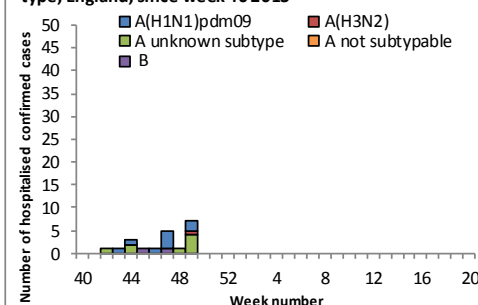
Figure 11: Cumulative ICU influenza admissions (USISS mandatory) by age group and flu type, UK, since week 40 2013



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 49)

-In week 49, seven new hospitalised confirmed influenza case were reported through the USISS sentinel hospital network from 29 NHS Trusts across England (Figure 14). A total of 20 hospitalised confirmed influenza admissions (nine A(H1N1)pdm09, eight A unknown, two B and one H3N2) have been reported since week 40 2013.

Figure 12: Weekly hospitalised cases (USISS sentinel) by flu type, England, since week 40 2013



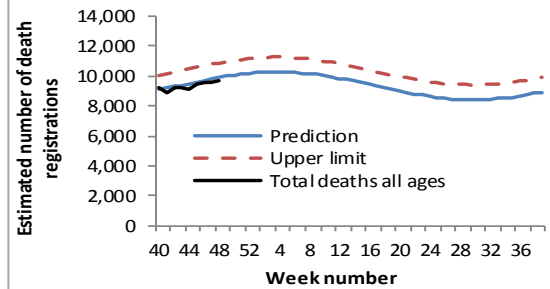
In week 49, no excess in all-cause mortality was seen across the UK overall, by age group or by region.

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 48 2013, an estimated 9,636 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is slightly more than the 9,587 estimated death registrations in week 47 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 49 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 49 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

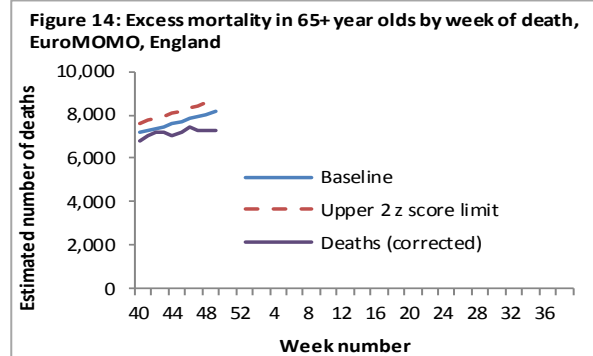


Table 4: Excess mortality by UK country*

Country	Excess detected in week 49 2013?	Weeks with excess in 2013/14
England	x	NA
Wales	x	NA
Scotland	x	NA
Northern Ireland	x	NA

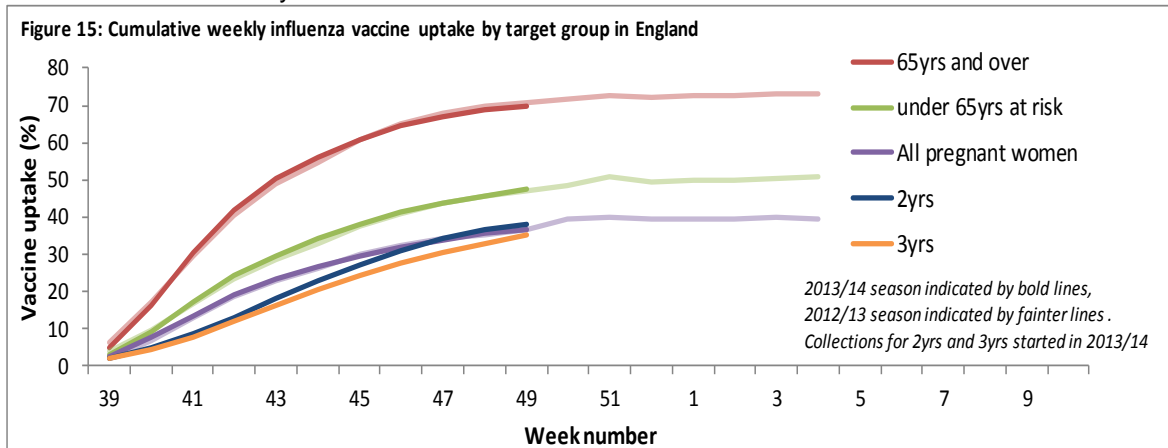
* Excess mortality is calculated as the observed minus the expected number of deaths in weeks above threshold

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 49 2013 in 82.5% 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):
 - 38.2% in all 2 year olds
 - 35.2% in all 3 year olds
 - 47.3% in under 65 years in a clinical risk group
 - 36.8% in all pregnant women
 - 70.0% in 65+ year olds



- Provisional data from the first monthly collection of influenza vaccine uptake by frontline healthcare workers show 35.0% were vaccinated by 31 October 2013 from 94.9% of Trusts, compared to 28.4% vaccinated the previous season by 31 October 2012. The [report](#) provides uptake to Trust level.

International Situation

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Overall influenza activity in North America has increased but remains at low levels throughout the region. European countries continue to report low levels of influenza activity.

- [Europe](#) 6 December 2013 (European Centre for Disease Prevention and Control report)

For week 48/2013, 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 Denmark, France, Germany, Norway, Slovakia, Spain, Sweden and the UK (Scotland). All other countries reported no activity. Increasing trends were reported by Bulgaria, Luxembourg, Poland and decreasing trends by the UK (Northern Ireland). All other countries reported stable trends. The incidence of ILI/ARI was below the epidemic thresholds in all countries.

For week 48/2013, 24 countries tested a total of 393 sentinel specimens, of which 12 (3%) were positive for influenza A virus in France, Norway, Spain, Sweden and the UK (Scotland). Since week 40/2013, of 51 sentinel specimens positive for influenza virus, 41 (80%) were type A and 10 (20%) were type B. Of 35 subtyped influenza viruses, 20 (57%) were A(H1N1)pdm09 and 15 (43%) were A(H3N2). In addition, since week 40/2013, 305 non-sentinel source specimens (e.g. specimens collected for diagnostic purposes in hospitals) were found to be positive for influenza virus, 239 were type A and 66 were type B viruses. Sixty-six (59%) subtyped influenza A viruses were A(H1N1)pdm09 and 45 (41%) were A(H3N2). Of eight B viruses ascribed to lineage, all were B-Yamagata lineage.

Since week 40/2013, three countries have reported 19 hospitalised laboratory-confirmed influenza cases. Of the 19 cases reported since week 40/2013, 11 were related to infection with influenza virus type A and eight to infection with influenza virus type B.

- [United States of America](#) 6 December 2013 (Centre for Disease Control report)

During week 48 2013, influenza activity increased slightly in the United States.

Nationwide during week 48, 1.9% of patient visits reported through the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet) were due to influenza-like illness (ILI). This percentage is below the national baseline of 2.0%. (*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 0.9% to 4.4% during week 48. Two regions (Regions 4 and 6) reported a proportion of outpatient visits for ILI at or above their region-specific baseline level. Two states experienced high ILI activity, two states experienced moderate ILI activity, two states and New York City experienced low ILI activity, 44 states experienced minimal ILI activity and the District of Columbia had insufficient data.

During week 48, 5.8% of all deaths reported through the 122 Cities Mortality Reporting System were due to P&I. This percentage was below the epidemic threshold of 6.7% for week 48. One influenza-associated pediatric death was reported to CDC during week 48. This death was associated with a 2009 H1N1 virus and occurred during week 47 (week ending November 23, 2013). A total of three influenza-associated pediatric deaths for the 2013-2014 season have been reported.

Of 5,306 specimens tested and reported by U.S. World Health Organization (WHO) and National Respiratory and Enteric Virus Surveillance System (NREVSS) collaborating laboratories during week 48, 536 (10.1%) were positive for influenza. By type, 501 (93.5%) were influenza A (213 (42.5%) A(H1N1)pdm09, 280 subtyping not performed and 8 (1.6%) A(H3N2)) and 35 (6.5%) were influenza B.

- [Canada](#) 6 December 2013 (Public Health Agency report)

Influenza activity in Canada continued to increase in week 48. Influenza A remained the predominant influenza virus type, with 77% of subtyped influenza A specimens to date identified as A(H1N1)pdm09. In week 48, two regions in Ontario reported localized activity and 18 regions (in BC(3), AB(4), SK(1), ON(4), and QC(6)) reported sporadic activity. The national influenza-like-illness (ILI) consultation rate increased from 21.3/1,000 in week 47 to 24.9/1,000 in week 48, following an upward trend in keeping with other surveillance indicators. No new influenza outbreaks were reported in week 48. To date this season, a total of 28 influenza-associated paediatric hospitalizations have been reported by the IMPACT network. Two ICU

admissions were reported, both in children 2-4 years of age, one with influenza A(H1N1)pdm09 and one with influenza B. 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 7 October 2013, 641 human cases of H5N1 avian influenza have been officially reported to [WHO](#) from 15 countries, of which 380 (59%) died.

- Novel coronavirus 2 December 2013

Up to 2 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 [163 cases](#), 71 of which have died (case fatality ratio=44%). Further information on management and guidance of possible cases is available [online](#).

Acknowledgements

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Related links

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Weekly consultation rates in national sentinel schemes

- [Sentinel schemes operating across the UK](#)
- [RCGP scheme](#)
- Northern Ireland surveillance ([Public Health Agency](#))
- Scotland surveillance ([Health Protection Scotland](#))
- Wales surveillance ([Public Health Wales](#))

- [Real time syndromic surveillance](#)
- [MEM threshold 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](#))