



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

29 December 2016 – Week 52 report (up to week 51 data)

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

During week 51 (ending 25 December 2016), the influenza season has now started with increases seen in several indicators including influenza-associated GP consultation rates and outbreaks in the community, the proportion of laboratory samples positive for influenza in primary and secondary care and influenza-related admissions to hospital and intensive care. The Department of Health has issued an [alert](#) on the prescription of antiviral medicines by GPs.

- [Community influenza surveillance](#)
 - Through the GP In Hours Syndromic Surveillance system, further small increases in GP consultations for influenza-like illness were noted, however activity remained within seasonally expected levels in week 51.
 - 30 new acute respiratory outbreaks have been reported in the past 7 days. 24 outbreaks were from care homes, where five tested positive for influenza (5 influenza A(not subtyped)). Six outbreaks were from hospitals where four tested positive for influenza (4 influenza A(not subtyped)).
- [Overall weekly influenza GP consultation rates across the UK](#)
 - In week 51, the overall weekly influenza-like illness (ILI) GP consultation rate was 16.2 per 100,000 in England compared to 12.1 per 100,000 in the previous week and is above the pre-epidemic threshold of 14.3 per 100,000 for this season. In the devolved administrations, ILI rates have increased but are within their respective pre-epidemic thresholds in Scotland and Northern Ireland; however ILI rates in Wales remain above the pre-epidemic threshold.
- [Influenza-confirmed hospitalisations](#)
 - In week 51, there were 36 admissions to ICU/HDU with confirmed influenza (14 influenza A(H3N2), 18 influenza A(unknown subtype), 4 influenza A(H1N1)pdm09) were reported across the UK (111/156 Trusts in England) through the USISS mandatory ICU scheme.
 - In week 51, there were 101 hospitalised confirmed influenza cases (63 influenza A(H3N2), 37 influenza A(not subtyped) and 1 influenza B) reported through the USISS sentinel hospital network (16 NHS Trusts across England).
 - No confirmed influenza admissions have been reported from the six Severe Respiratory Failure centres in the UK in week 51.
- [All-cause mortality data](#)
 - In week 50 2016, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England overall and by age group. Due to the Christmas period, data for week 51 for England and the devolved administrations is not available.
- [Microbiological surveillance](#)
 - 43 samples tested positive for influenza (38 influenza A(H3N2) and 5 influenza A(unknown subtype)) through GP sentinel schemes across the UK, with an overall positivity of 23.2% in week 51.
 - 243 influenza positive detections were recorded through the DataMart scheme (166 influenza A(H3N2) and 77 influenza A(unknown subtype)). The overall positivity was at 18.8% in week 51, which is above the threshold for 2016/17 season of 8.6%. The highest positivities were seen in the 65+ year olds (27.7%).
- [Vaccination](#)
 - Up to week 51 2016, in 91.0% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows: 46.8% in under 65 years in a clinical risk group, 44.0% in pregnant women, 69.5% in 65+ year olds. In 94.1% of GP practices reporting to Immform, the provisional proportion of children in England who had received the 2016/17 influenza vaccine was as follows: 37.6% in all 2 year olds, 39.9% in all 3 year olds and 32.5% in all 4 year olds.
 - Provisional data from the second monthly collection of influenza vaccine uptake in GP patients up to 30 November 2016 has been published. The [report](#) provides uptake at national, Area Team (AT), Clinical Commissioning Group (CCG) and by Local Authority (LA) levels.
 - Provisional data from the second monthly collection of influenza vaccine uptake by frontline healthcare workers show 55.6% were vaccinated by 30 November 2016, compared to 44.1% vaccinated in the previous season by 30 November 2015. The [report](#) provides uptake at Trust level.
 - Provisional [data](#) from the second monthly collection of influenza vaccine uptake for children of school years 1, 2 and 3 age show the provisional proportion of children in England who received the 2016/17 influenza vaccine via school, pharmacy or GP practice by 30 November 2016 in targeted groups was as follows: 44.4% in children of school Year 1 age (5-6 years); 42.4% in children of school Year 2 age (6-7 years); 40.5% in children of school Year 3 age (7-8 years).
- [International situation](#)
 - Globally, influenza activity in the temperate zone of the northern hemisphere has increased, with influenza A(H3N2) being the dominant subtype.

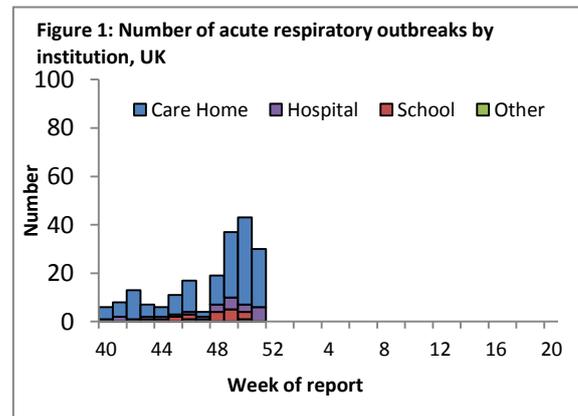
During week 51, further small increases in GP consultations for influenza-like illness were noted. 30 new acute respiratory outbreaks were reported in the past 7 days.

- PHE Real-time Syndromic Surveillance

- During week 51, there were further small increases in GP consultations for respiratory infections, including influenza-like illness; however levels remain within seasonally expected limits.
- For further information, please see the syndromic surveillance [webpage](#).

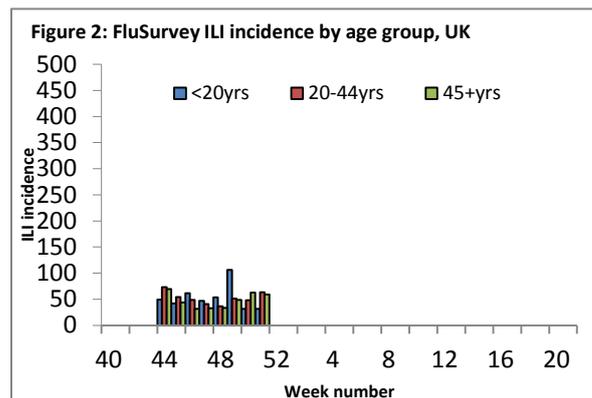
- Acute respiratory disease outbreaks

- 30 new acute respiratory outbreaks have been reported in the past 7 days. 24 outbreaks were from care homes, where five tested positive for influenza (5 influenza A(not subtyped)). Six outbreaks were hospitals where four tested positive for influenza (4 influenza A(not subtyped)).
- Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and Respscidsc@phe.gov.uk.



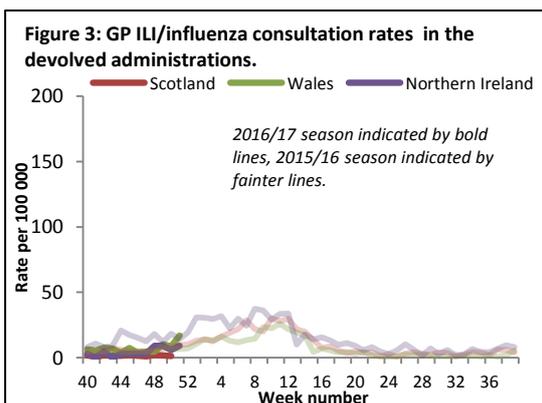
- FluSurvey

- Internet-based surveillance of influenza-like illness in the general population is undertaken through the FluSurvey. A project run jointly by PHE and the London School of Hygiene and Tropical Medicine.
- The overall ILI rate (all age groups) for week 51 was 58.5 per 1,000 (107/1,828 people reported at least 1 ILI), with the 20-44 years age group reporting a higher rate of 63.0 per 1,000.
- If you would like to become a participant of the FluSurvey project please do so by visiting the <https://flusurvey.org.uk/en/accounts/register/> website for more information.



In week 51, overall weekly influenza-like illness GP consultations have increased and are above the pre-epidemic threshold in England. In the devolved administrations, ILI rates have increased but are within their respective pre-epidemic thresholds in Scotland and Northern Ireland; however ILI rates in Wales remain above the pre-epidemic threshold.

- Influenza/Influenza-Like-Illness (ILI)



Northern Ireland

- The Northern Ireland ILI rate has increased at 29.1 per 100,000 in week 51 compared to 21.5 per 100,000 in week 50 (Figure 3). This remains below the baseline threshold (47.9 per 100,000).
- The highest rates were seen in the <1 year olds (52.0 per 100,000) and 75+ year olds (49.4 per 100,000).

Wales

-The Welsh ILI rate is at 12.4 per 100,000 in week 51 compared to 13.1 per 100,000 in week 50 (Figure 3). This remains above the baseline threshold (10.3 per 100,000).

- The highest rates were seen in the 45-64 year olds (18.7 per 100,000) and 15-44 year olds (14.3 per 100,000).

Scotland

-The Scottish ILI rate has increased at 17.8 per 100,000 in week 51 compared to 10.7 per 100,000 in week 50 (Figure 3). This remains below the baseline threshold (36.1 per 100,000).

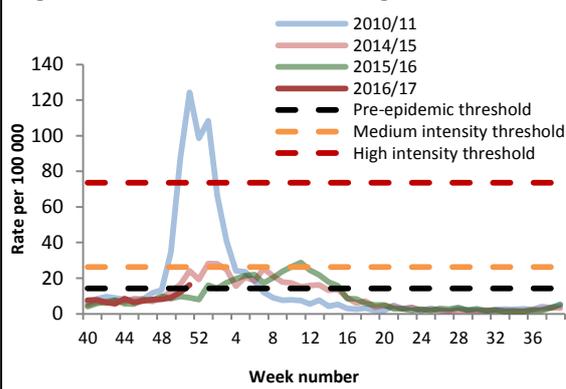
-The highest rates were seen in 45-64 year olds (24.0 per 100,000) and 65-74 year olds (23.1 per 100,000).

RCGP (England and Wales)

- The weekly ILI consultation rate through the RCGP surveillance is at 16.2 per 100,000 in week 51 compared to 12.1 per 100,000 in week 50. This is above the baseline threshold (14.3 per 100,000) (Figure 4*). By age group, the highest rates were seen in 75+ year olds (32.1 per 100,000) and 45-64 year olds (17.1 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.*

Figure 4: RCGP ILI consultation rates, England and Wales



GP In Hours Syndromic Surveillance System (England)

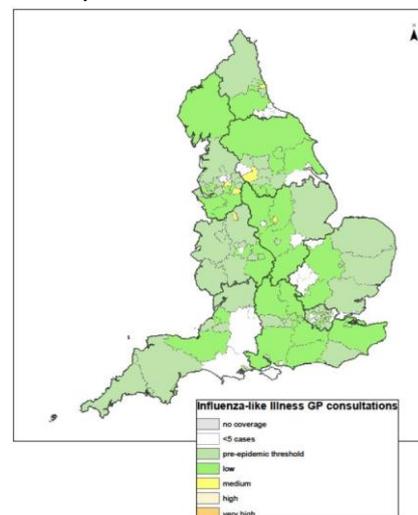
-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system is at 11.2 per 100,000 in week 51 (Figure 5).

Figure 5 represents a map of GP ILI consultation rates in Week 50 across England by Local Authorities, using influenza-like illness surveillance thresholds. The map for week 51 is not available.

Thresholds are calculated using a standard methodology for setting ILI thresholds across Europe (the "Moving Epidemic Method" (MEM)) and are based on six previous influenza seasons (excluding the 2009/10 H1N1 pandemic)

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

Figure 5: Map of GP ILI consultation rates in Week 50



Influenza confirmed hospitalisations

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In week 51, there were 36 admissions to ICU/HDU with confirmed influenza (14 influenza A(H3N2), 18 influenza A(unknown subtype), 4 influenza A(H1N1)pdm09) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (111 Trusts). 101 hospitalised confirmed influenza cases (63 influenza A(H3N2), 37 influenza A(not subtyped) and 1 influenza B) were reported through the USISS sentinel hospital network across England (16 Trusts).

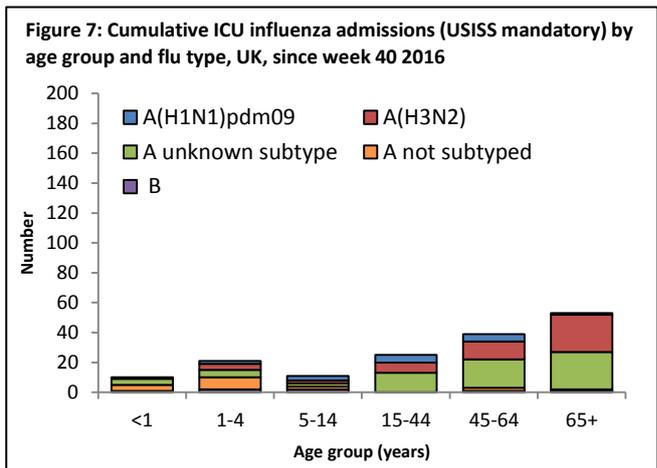
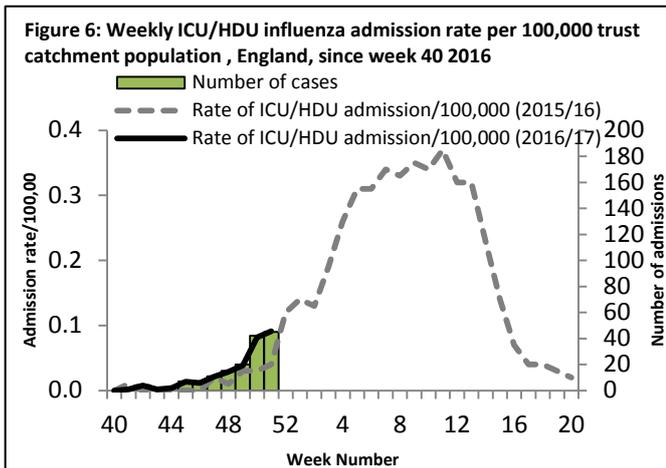
A national mandatory collection (USISS mandatory ICU scheme) is operating in cooperation with the Department of Health to report the number of confirmed influenza cases admitted to Intensive Care Units (ICU) and High Dependency Units (HDU) and number of confirmed influenza deaths in ICU/HDU across the 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 is 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, there were 36 admissions to ICU/HDU with confirmed influenza (14 influenza A(H3N2), 18 influenza A(unknown subtype), 4 influenza A(H1N1)pdm09) were reported across the UK (111/156 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.096 per 100,000 compared to a rate of 0.084 per 100,000 in week 50 (Figures 6 and 7). One death was reported in week 51.

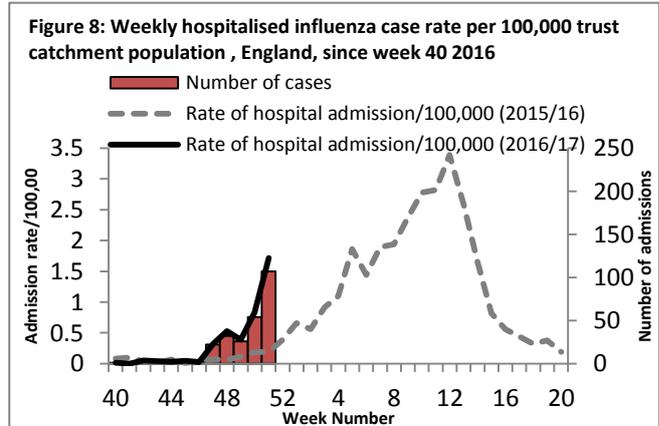
A total of 149 admissions (48 influenza A(H3N2), 15 influenza A(H1N1)pdm09, 80 influenza A(unknown subtype), and 6 influenza B) and seven confirmed deaths have been reported since week 40 2016.



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

- In week 51, there were 101 hospitalised confirmed influenza cases (63 influenza A(H3N2), 37 influenza A(not subtyped) and 1 influenza B) reported through the USISS sentinel hospital network from 12 NHS Trusts across England (Figure 8), a rate of 1.71 per 100,000 compared to 0.84 per 100,000 in the previous week.

A total of 251 hospitalised confirmed influenza admissions (154 influenza A(H3N2), 85 influenza A(not subtyped) and 9 influenza B) have been reported since week 40 2016.



- USISS Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 51)

- In week 51, there were no confirmed influenza admissions reported from the six Severe Respiratory Failure (SRF) centres in the UK. There have been no admissions reported since week 40 2016.

All-cause mortality data

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In week 50, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England. Due to the Christmas period, data for week 51 for England and the devolved administrations is not available.

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 49 2016, an estimated 11,223 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is a decrease compared to the 10,439 estimated death registrations in week 48 2016.

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

-In week 50 2016 in England, no excess mortality by date of death above the upper 2 z-score threshold was seen in England after correcting ONS disaggregate data for reporting delay with the standardised [EuroMoMo](#) algorithm (Table 1). No significant excess was seen in any age groups or subnationally. This data is provisional due to the time delay in registration; numbers may vary from week to week.

- In the devolved administrations, significant excess mortality above the threshold was seen in Scotland (for all ages and in 65+ year olds) in week 50 2016 (Table 2). No excess was seen in Wales. Data was not available for Northern Ireland.

Table 1: Excess mortality by age group, England*

Age group (years)	Excess detected in week 50 2016?	Weeks with excess in 2016/17
<5	×	NA
5-14	×	NA
15-64	×	45
65+	×	NA

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

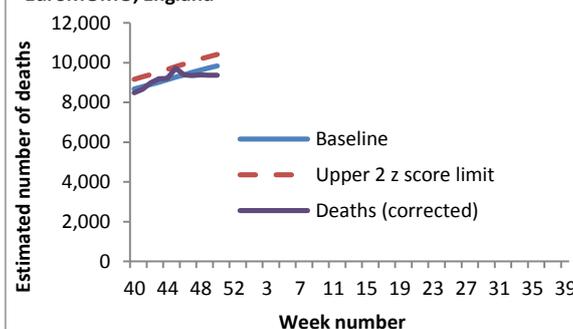
Table 2: Excess mortality by UK country, for all ages*

Country	Excess detected in week 50 2016?	Weeks with excess in 2016/17
England	×	NA
Wales	×	NA
Scotland	✓	46,49
Northern Ireland	-	-

* 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

Figure 9: Excess mortality in all ages by week of death, EuroMOMO, England



Microbiological surveillance

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In week 51 2016, 43 samples tested positive for influenza (38 influenza A(H3N2) and 5 influenza A(unknown subtype)) through the UK GP sentinel schemes with an overall positivity of 23.2%. 243 positive detections were recorded through the DataMart scheme (166 influenza A(H3N2) and 77 influenza A(not subtyped)) with a positivity of 18.8% in week 51.

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

-In week 51, 43 samples tested positive for influenza (38 influenza A(H3N2) and 5 influenza A(unknown subtype)) through the UK GP sentinel swabbing schemes, with an overall positivity of 23.2% compared to 26.0% in week 50 (Table 3). Since week 40 2016, 173 samples (144 influenza A(H3N2), 14 influenza A(unknown subtype), 3 influenza A(H1N1)pdm09 and 12 influenza B) have tested positive for influenza through this scheme.

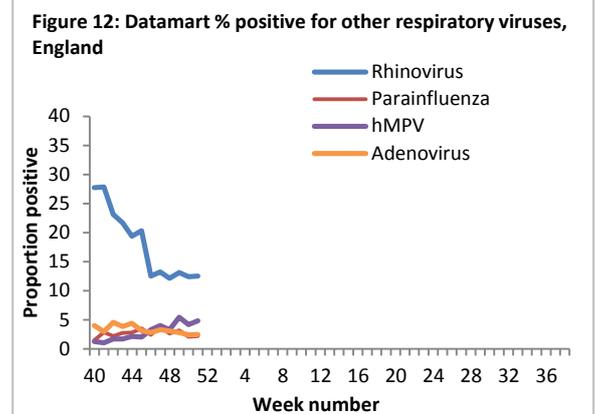
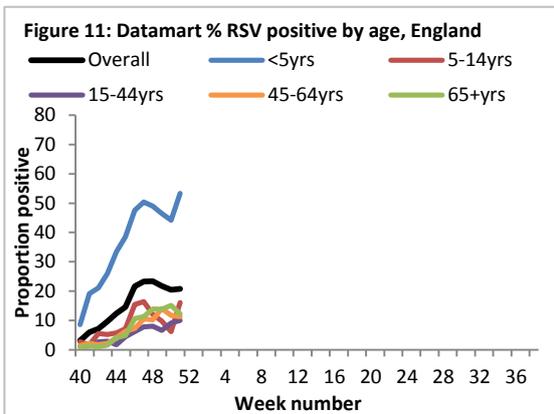
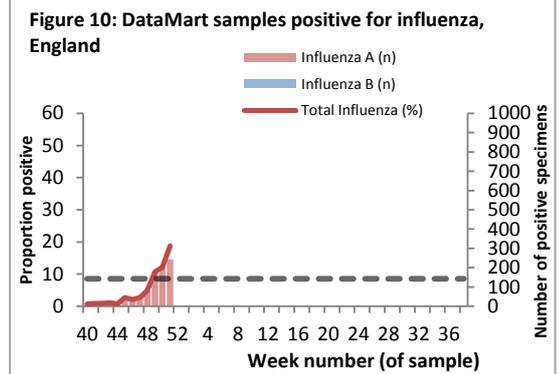
Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
47	5/91 (5.5%)	2/67 (3%)	0/0 (-)	0/3 (-)
48	5/95 (5.3%)	6/92 (6.5%)	1/5 (-)	0/7 (-)
49	19/110 (17.3%)	9/92 (9.8%)	3/6 (-)	3/16 (18.8%)
50	38/121 (31.4%)	15/88 (17%)	3/9 (-)	1/1 (-)
51	27/101 (26.7%)	12/71 (16.9%)	4/13 (30.8%)	0/0 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 51 2016, out of the 1,293 respiratory specimens reported through the Respiratory DataMart System, 243 samples (18.8%) were positive for influenza (166 influenza A(H3N2) and 77 influenza A(not subtyped)) (Figure 10), which is above the MEM threshold for this season of 8.6%. The highest positivity by age group was seen in the 65+ year olds (27.7%). The overall positivity for RSV remained similar to the previous week at 20.8% in week 51 compared to 20.5% in week 50. The highest positivity was noted in the <5 year olds at 53.3% in week 51 an increase from 44.2% in week 50 (Figure 11). Positivities for rhinovirus, adenovirus and parainfluenza remained similar to the previous week in week 51 at 12.5%, 2.5% and 2.2% respectively. Positivity for human metapneumovirus (hMPV) increased slightly; from 4.2% in week 50 to 4.9% in week 51.



**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 8.6% in 2016/17.*

- Virus characterisation

PHE characterises the properties of influenza viruses through one or more tests, including genome sequencing (genetic analysis) and haemagglutination inhibition (HI) assays (antigenic analysis). These data are used to compare how similar the currently circulating influenza viruses are to the strains included in seasonal influenza vaccines, and to monitor for changes in circulating influenza viruses. The interpretation of genetic and antigenic data sources is complex due to a number of factors, for example, not all viruses can be cultivated in sufficient quantity for antigenic characterisation, so that viruses with sequence information may not be able to be antigenically characterised as well.

Since the start of the 2016/17 winter influenza season in week 40 2016, the PHE Respiratory Virus Unit has characterised two A(H1N1)pdm09 influenza viruses: one genetically and one antigenically. The A(H1N1)pdm09 virus genetically characterised belongs in the genetic subgroup 6B.1, which was the predominant genetic subgroup in the 2015/16 season. The virus antigenically analysed is similar to the A/California/7/2009 Northern Hemisphere 2016/17 (H1N1)pdm09 vaccine strain. Genetic characterisation of 44 A(H3N2) influenza viruses since week 40 showed that they all belong to genetic subclade 3C.2a, with 28 belonging to a cluster within this genetic subclade designated as 3C.2a1. Viruses within this cluster are antigenically similar to other 3C.2a subclade viruses, which was the majority group circulating during the 2015/16 season. The Northern Hemisphere 2016/17 influenza A(H3N2) vaccine strain A/HongKong/4801/2014 belongs in genetic subclade 3C.2a. One influenza A(H3N2) virus has been isolated and antigenically characterised since week 40 2016. The virus antigenically analysed is similar to the A/HongKong/4801/2014 Northern Hemisphere 2016/17 A(H3N2) vaccine strain.

One influenza B virus has been analysed genetically since week 40/2015 and has been characterised as belonging to the B/Yamagata/16/88-lineage. One influenza B virus has been isolated and antigenically characterised since week 40 2016. This virus was characterised as belonging to the B/Yamagata/16/88-lineage and was antigenically similar to B/Phuket/3073/2013, the influenza B/Yamagata-lineage component of 2016/17 Northern Hemisphere quadrivalent vaccine.

- Antiviral susceptibility

Since week 40 2016, one influenza A(H1N1)pdm09 virus, three influenza A(H3N2) virus and one influenza B (Yamagata) virus have been tested for oseltamivir susceptibility and all but one influenza A(H3N2) virus are sensitive to oseltamivir. One influenza A(H1N1)pdm09 virus, two influenza A(H3N2) and one influenza B (Yamagata) virus have also been tested for zanamivir susceptibility and all but one influenza A(H3N2) virus are sensitive to zanamivir.

The resistant influenza A(H3N2) virus to both oseltamivir and zanamivir has an R292K mutation and was isolated from a treated patient with underlying conditions. The R292K mutation causes resistance to oseltamivir and reduced susceptibility to zanamivir.

- Antimicrobial susceptibility

-Table 4 shows in the 12 weeks up to 25 December 2016, 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 25 December 2016, E&W

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	3,637	90
	Macrolides	4,071	82
	Tetracycline	3,932	84
<i>H. influenzae</i>	Amoxicillin/ampicillin	14,106	70
	Co-amoxiclav	14,427	87
	Macrolides	5,354	13
	Tetracycline	14,137	98
<i>S. aureus</i>	Methicillin	6,257	91
	Macrolides	6,764	67
MRSA	Clindamycin	359	44
	Tetracycline	546	84
MSSA	Clindamycin	3,190	77
	Tetracycline	5,304	93

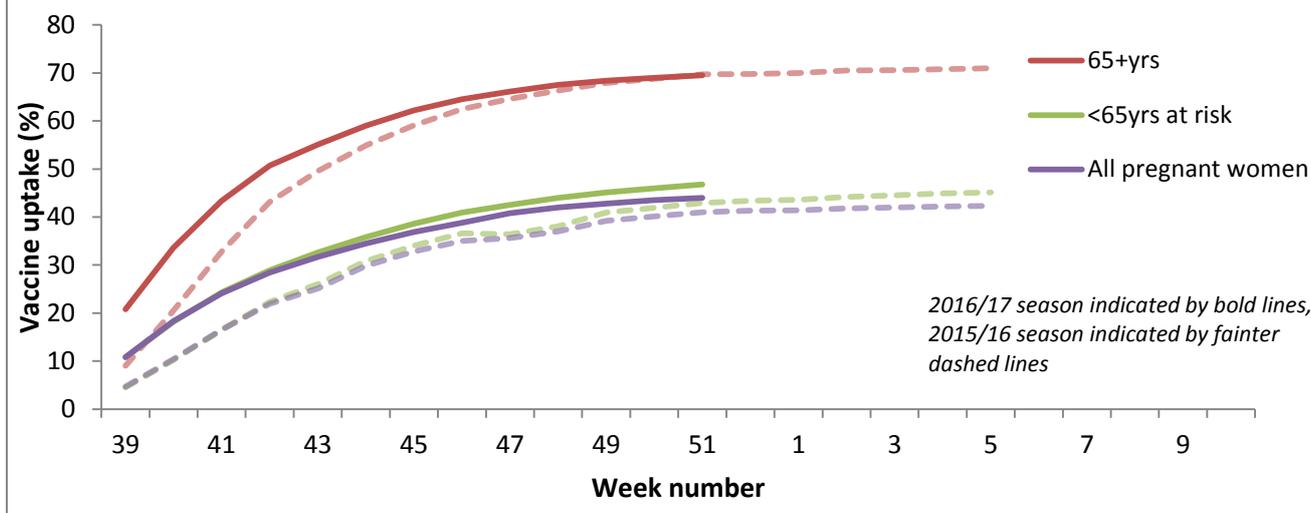
*Macrolides = erythromycin, azithromycin and clarithromycin

Vaccination

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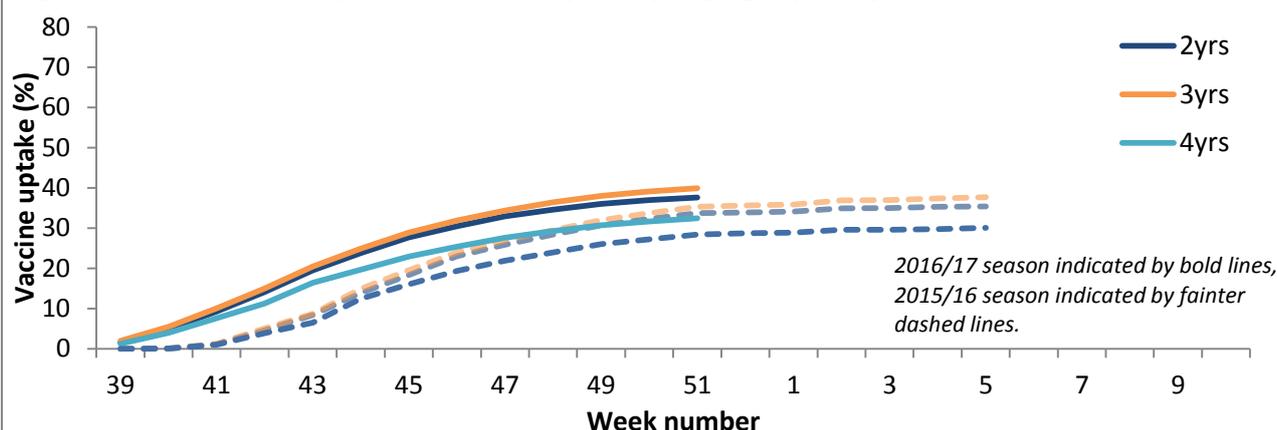
- Up to week 51 2016 in 91.0% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows, with vaccination activity starting earlier than last season (Figure 13):
 - 46.8% in under 65 years in a clinical risk group
 - 44.0% in pregnant women
 - 69.5% in 65+ year olds

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



- In 2016/17, all two-, three- and four-year-olds continue to be eligible for flu vaccination. In addition, the programme has been extended to children of school years 1, 2 and 3 age. Up to week 51 2016 in 94.1% of GP practices reporting weekly to Immform, the provisional proportion of children in England who had received the 2016/17 influenza vaccine in targeted groups was as follows (Figure 14):
 - 37.6% in all 2 year olds
 - 39.9% in all 3 year olds
 - 32.5% in all 4 year olds

Figure 14: Cumulative weekly influenza vaccine uptake by target group in England



- Provisional data from the second monthly collection of influenza vaccine uptake in GP patients up to 30 November 2016 show that in 95.1% of all GP practices in England responding to the main GP survey, the proportion of people in England who received the 2016/17 influenza vaccine was as follows:
 - 43.5% in under 65 years in a clinical risk group
 - 41.5% in pregnant women
 - 66.7% in 65+ year olds
- Provisional data from the second monthly collection of influenza vaccine uptake in GP patients up to 30 November 2016 show that in 95.1% of all GP practices in England responding to the child GP survey, the proportion of people in England who received the 2016/17 influenza vaccine was as follows:
 - 33.8% in all 2 year olds
 - 35.5% in all 3 year olds
 - 29.0% in all 4 year olds
- Provisional data from the second monthly collection of influenza vaccine uptake by frontline healthcare workers show 55.6% were vaccinated by 30 November 2016 from 98.5% of Trusts, compared to 44.1% vaccinated in the previous season by 30 November 2015. The report provides uptake at Trust level.
- Provisional data from the second monthly collection of influenza vaccine uptake for children of school years 1, 2 and 3 age (from a sample of 100% of all Local Authorities in England) show the provisional proportion of children in England who received the 2016/17 influenza vaccine via school, pharmacy or GP practice by 30 November 2016 in targeted groups was as follows:
 - 44.4% in children of school Year 1 age (5-6 years)
 - 42.4% in children of school Year 2 age (6-7 years)
 - 40.5% in children of school Year 3 age (7-8 years)

International Situation

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Influenza activity in the temperate zone of the northern hemisphere has increased, with influenza A(H3N2) being the dominant subtype.

- [Europe](#) updated on 23 December 2016 (Joint ECDC-WHO Influenza weekly update)

In week 50/2016, influenza activity has increased across Europe with epidemic thresholds for ILI/ARI rate being exceeded in ten countries.

Influenza activity increased further in some countries in week 50/2016. Seasonal ILI/ARI epidemic thresholds were exceeded in ten countries which use the moving epidemic method for calculation of the threshold.

For week 50/2016, 726 of 1 918 (38%) sentinel specimens tested positive for influenza virus. Of these, 96% were type A and 4% were type B. The great majority (99.8%) of subtyped influenza A viruses were A(H3N2).

For week 50/2016, 15 countries reported laboratory-confirmed influenza cases based on hospital surveillance. Of those countries, territories and regions that conduct surveillance based on sentinel severe acute respiratory infection (SARI), 1 061 SARI cases were reported of which 110 were positive for influenza A(H3N2) virus.

Of those countries, territories and regions that conduct surveillance based on hospitalized laboratory-confirmed influenza cases in intensive care units (ICU) or other wards, 17 cases were reported in ICU by Finland, Romania, Spain and Sweden, ten with type A, six with A(H3N2) and one with type B influenza virus infection. From other wards, 77 cases were reported by Ireland, Romania and Spain; 55 with type A and 22 with A(H3N2) influenza virus infection.

For week 50/2016, 4 693 specimens from non-sentinel sources (such as hospitals, schools, non-sentinel primary care units, nursing homes and other care institutions) tested positive for influenza viruses. Of these, 98% were type A and 2% type B, with 98% of the subtyped influenza A viruses being A(H3N2).

- [United States of America](#) updated on 23 December 2016 (Centre for Disease Control report)

During week 50, influenza activity increased slightly in the United States.

The most frequently identified influenza virus subtype reported by public health laboratories during week 50 was influenza A (H3). The percentage of respiratory specimens testing positive for influenza in clinical laboratories increased.

A cumulative rate for the season of 2.4 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.

Nationwide during week 50, the proportion of outpatient visits for influenza-like illness (ILI) was 2.3%, which is above the national baseline of 2.2%.

- [Canada](#) updated on 23 December 2016 (Public Health Agency report)

Seasonal influenza activity continues to increase in Canada, with greater numbers of influenza detections, hospitalizations and outbreaks being reported in week 50.

A total of 692 positive influenza detections were reported in week 50. Influenza A(H3N2) continues to be the most common subtype detected. In week 49, 1.1% of visits to sentinel healthcare professionals were due to influenza-like symptoms.

Eighteen laboratory-confirmed influenza outbreaks were reported in week 50, with the majority occurring in long-term care facilities.

Adults aged 65+ years accounted for the largest proportion of hospitalizations and deaths reported from adult sentinel networks and participating Provinces and Territories.

- [Global influenza update](#) updated on 26 December 2016 (WHO website)

Influenza activity in the temperate zone of the northern hemisphere increased slightly, with some countries passing their seasonal threshold, which is early for the season. Worldwide, influenza A(H3N2) virus was predominant.

In North America, influenza activity continued to increase with influenza A(H3N2) virus predominating. Influenza-like illness (ILI) levels remained below seasonal thresholds. In the United States, respiratory syncytial virus (RSV) activity continued to be reported.

In Europe, influenza activity was low but has started to rise, with a positivity rate of 28% among sentinel surveillance samples. The highest numbers of influenza cases were detected in Norway and Sweden. In South West Europe, influenza activity was higher in Portugal and Spain.

In East Asia, influenza activity continued to increase with influenza A(H3N2) remaining the dominant virus circulating. In Western Asia, influenza detections increased slightly.

In Northern Africa, influenza detections increased in Morocco with influenza A(H3N2) viruses dominating.

In the Caribbean countries, influenza and other respiratory virus activity remained low. In Central America, there was a slight decrease in influenza and other respiratory viruses activity in most of the countries. In Costa Rica, influenza activity increased with influenza A(H1N1)pdm09 and A(H3N2) viruses co-circulating and RSV activity continued to be reported.

In tropical South America, influenza and other respiratory viruses activity remained low with exception of Colombia where both influenza and RSV activity continued to be reported.

In Southern Asia, influenza detections slightly increased in both Iran and Sri Lanka with influenza A(H3N2) as the most frequently detected virus in this region.

In South East Asia, influenza activity continued to be reported at low levels, with influenza A(H3N2) virus predominant in the region.

In West Africa, influenza detections increased in Ghana with B viruses dominating.

In Southern Africa, influenza activity continued at inter-seasonal levels.

In temperate South America, influenza and RSV activity continued to decrease throughout the sub-region.

In Oceania, influenza virus activity was reported at inter-seasonal levels.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 115,769 specimens between 28 November 2016 and 11 December 2016. 12,979 were positive for influenza viruses, of which 12,221 (94.2%) were typed as influenza A and 758 (5.8%) as influenza B. Of the sub-typed influenza A viruses, 118 (1.5%) were influenza A(H1N1)pdm09 and 7,709 (98.5%) were influenza A(H3N2). Of the characterized B viruses, 74 (48.1%) belonged to the B-Yamagata lineage and 80 (51.9%) to the B-Victoria lineage.

- [Avian Influenza](#) latest update on 23 December 2016 (WHO website)

Influenza A(H5) viruses

On [07 December 2016](#), two new laboratory-confirmed human case of influenza A(H5N6) virus infection was reported to WHO from the National Health and Family Planning Commission (NHFPC) of China.

Since 2003, a total of 856 laboratory-confirmed cases of human infection with avian influenza A(H5N1) virus, including 452 deaths, have been reported to WHO from 16 countries.

Although other influenza A(H5) subtype viruses have the potential to cause disease in humans, no human cases, other than those with influenza A(H5N1) and A(H5N6), have been reported so far. According to reports received by the World Organisation for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in West Africa, Europe and Asia. There have also been numerous detections of influenza A(H5N8) viruses in wild birds and domestic poultry in several countries in Asia and Europe since June 2016.

Influenza A(H7N9)

On [20 December 2016](#), the Department of Health (DOH), Hong Kong Special Administrative Region (SAR) notified WHO of a case of laboratory-confirmed human infection with avian influenza A(H7N9) virus.

On [12 December 2016](#), the National Health and Family Planning Commission (NHFPC) of China notified WHO of six (6) additional cases of laboratory-confirmed human infection with avian influenza A(H7N9) virus.

A total of 808 laboratory-confirmed human infections with avian influenza A (H7N9) virus have been reported through IHR notification since early 2013.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 19 December 2016

Between [27 November](#) and [13 December 2016](#), the National IHR Focal Point of Saudi Arabia reported 22 additional cases of Middle East Respiratory Syndrome (MERS) including two fatal cases. Five deaths among previously reported MERS cases were also reported.

Up to 28 December 2016, a total of four cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (two imported and two linked cases) have been confirmed in the UK. On-going surveillance has identified 898 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

Globally, since September 2012, WHO has been notified of 1,864 laboratory-confirmed cases of infection with MERS-CoV, including at least 659 related deaths. Further information on management and guidance of possible cases is available [online](#). The latest ECDC MERS-CoV risk assessment can be found [here](#), where it is highlighted that risk of widespread transmission of MERS-CoV remains low.

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, 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 [methodology paper](#) and [UK pilot paper](#)

Community surveillance

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

Disease severity and mortality data

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

Vaccination

- Seasonal influenza vaccine programme ([Department of Health Book](#))
- Childhood flu programme information for healthcare practitioners ([Public Health England](#))
- 2016/17 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))