



# PHE Weekly National Influenza Report

## Summary of UK surveillance of influenza and other seasonal respiratory illnesses

19 January 2017 – Week 03 report (up to week 02 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 02 (ending 15 January 2017), widespread influenza circulation continues with some indicators increasing, such as GP consultations for influenza-like illness and influenza-related hospital admission but other indicators, such as influenza-associated outbreaks in the community, the proportion of laboratory confirmed influenza samples and influenza-related admissions to intensive care, remain similar to the previous week. 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, GP consultations for respiratory conditions decreased during week 02.
  - 122 new acute respiratory outbreaks have been reported in the past 7 days. 94 outbreaks were from care homes, where 25 tested positive for influenza (25 influenza A(not subtyped)) and one mixed infection of influenza A(not subtyped and RSV). 24 outbreaks were from hospitals where 17 tested positive for influenza (17 influenza A(not subtyped)). Four outbreaks were from schools where one tested positive for influenza A(not subtyped) .
- [Overall weekly influenza GP consultation rates across the UK](#)
  - In week 02, the overall weekly influenza-like illness (ILI) GP consultation rate was 20.3 per 100,000 in England compared to 18.8 per 100,000 in the previous week. This is above the baseline threshold of 14.3 per 100,000 for this season, consistent with influenza circulating in the community. In the devolved administrations, ILI rates have increased and are within their respective baseline thresholds in Scotland and Northern Ireland; however ILI rates in Wales decreased but remain above their baseline threshold.
- [Influenza-confirmed hospitalisations](#)
  - In week 02, there were 82 admissions to ICU/HDU with confirmed influenza (24 influenza A(H3N2), 46 influenza A(unknown subtype), 11 influenza A(H1N1)pdm09 and 1 influenza B) were reported across the UK (134/156 Trusts in England) through the USISS mandatory ICU scheme with a rate of 0.18 per 100,000 compared to 0.19 per 100,000 in the previous week.
  - In week 02, there were 135 hospitalised confirmed influenza cases (78 influenza A(H3N2), 54 influenza A(not subtyped) and 3 influenza B) reported through the USISS sentinel hospital network (16 NHS Trusts across England), with a rate of 2.36 per 100,000, compared to 1.95 per 100,000 in the previous week.
  - No confirmed influenza admissions have been reported from the six Severe Respiratory Failure centres in the UK in week 02.
- [All-cause mortality data](#)
  - In week 02 2017, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England overall and by age group.
- [Microbiological surveillance](#)
  - 57 samples tested positive for influenza (35 influenza A(H3N2), 20 influenza A(unknown subtype) and 2 influenza B) through GP sentinel schemes across the UK, with an overall positivity of 35.4% in week 02 compared to 37.6% in week 01.
  - 572 influenza positive detections were recorded through the DataMart scheme (486 influenza A(H3N2), 82 influenza A(unknown subtype), 2 influenza A(H1N1)pdm09 and 2 influenza B) in week 02. The overall positivity was at 26.5% in week 02, which is above the threshold for 2016/17 season of 8.6%.The highest age-specific positivities were seen in the 65+ year olds (31.5%).
- [Vaccination](#)
  - Up to week 02 2017, in 90.9% 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: 47.9% in under 65 years in a clinical risk group, 44.5% in pregnant women and 70.2% in 65+ year olds. In 94.2% of GP practices reporting to Immform, the provisional proportion of children in England who had received the 2016/17 influenza vaccine was as follows: 38.5% in all 2 year olds, 40.9% in all 3 year olds and 33.3% in all 4 year olds.
  - Provisional data from the third monthly collection of influenza vaccine uptake by frontline healthcare workers show 61.9% were vaccinated by 31 December 2016, compared to 47.6% vaccinated in the previous season by 31 December 2015. The [report](#) provides uptake at Trust level.
  - Provisional [data](#) from the third 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 31 December 2016 in targeted groups was as follows: 56.6% in children of school Year 1 age (5-6 years); 54.4% in children of school Year 2 age (6-7 years); 52.4% in children of school Year 3 age (7-8 years).
- [International situation](#)
  - Globally, influenza activity in the temperate zone of the northern hemisphere continued to increase, with many countries especially in Europe and East Asia passing their seasonal threshold early in comparison with previous years. Worldwide, influenza A(H3N2) virus was predominant.

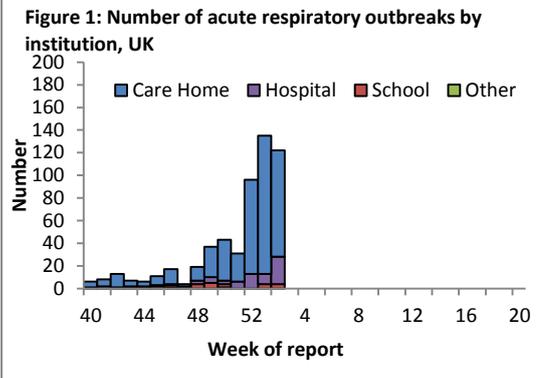
Through the GP In Hours Syndromic Surveillance system, GP consultations for respiratory conditions decreased during week 02. 122 new acute respiratory outbreaks were reported in the past 7 days.

- PHE Real-time Syndromic Surveillance

- During week 02, GP 'in hours' consultations for respiratory conditions have decreased. These decreases were noted across all syndromic surveillance systems.
- For further information, please see the syndromic surveillance [webpage](#).

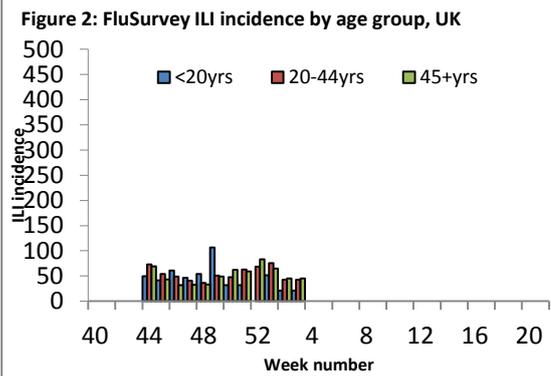
- Acute respiratory disease outbreaks

- 122 new acute respiratory outbreaks have been reported in the past 7 days. 94 outbreaks were from care homes, where 25 tested positive for influenza (25 influenza A(not subtyped)), two tested positive for RSV, one for a mixed infection of influenza A(not subtyped) and RSV and one was positive for human metapneumovirus (hMPV)). 24 outbreaks were in hospitals where 17 tested positive for influenza (17 influenza A(not subtyped)). Four outbreaks were from schools, where one tested positive for influenza A(not subtyped).
- Outbreaks should be recorded on HPZone and reported to the local Health Protection Teams and [Respscidsc@phe.gov.uk](mailto:Respscidsc@phe.gov.uk) .



- FluSurvey

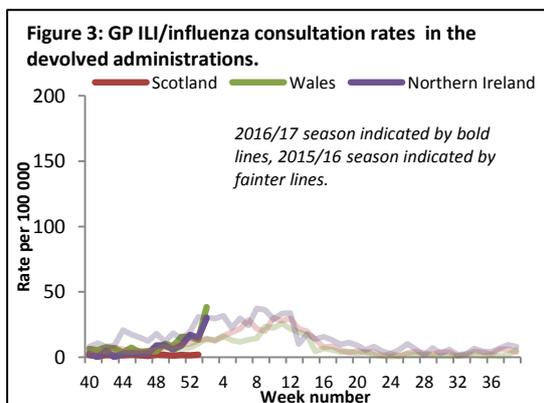
- Internet-based surveillance of influenza-like illness in the general population is undertaken through the FluSurvey. A project run jointly by PHE and the London School of Hygiene and Tropical Medicine.
- The overall ILI rate (all age groups) for week 02 was 43.4 per 1,000 (85/1,960 people reported at least 1 ILI), with the 45+ years age group reporting a higher rate of 45.1 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.



Weekly consultation rates in national sentinel schemes

In week 02, the overall weekly influenza-like illness GP consultation rate has increased and is above the baseline threshold in England. In the devolved administrations, ILI rates have increased and are within their respective baseline thresholds in Scotland and Northern Ireland; however ILI rates have decreased in Wales but remain above their baseline threshold.

- Influenza/Influenza-Like-Illness (ILI)



Northern Ireland

-The Northern Ireland ILI rate has increased slightly at 33.0 per 100,000 in week 02 compared to 32.1 per 100,000 in week 01 (Figure 3). This remains below the baseline threshold (47.9 per 100,000).

-The highest rates were seen in the 45-64 year olds (47.1 per 100,000) and 75+ year olds (41.6 per 100,000).

### Wales

-The Welsh ILI rate has decreased at 16.8 per 100,000 in week 02 compared to 21.1 per 100,000 in week 01 (Figure 3). This remains above the baseline threshold (10.3 per 100,000).

- The highest rates were seen in the 75+ year olds (29.6 per 100,000) and 15-44 year olds (19.6 per 100,000).

### Scotland

-The Scottish ILI rate has increased at 22.7 per 100,000 in week 02 compared to 13.6 per 100,000 in week 01 (Figure 3). This remains below the baseline threshold (36.1 per 100,000).

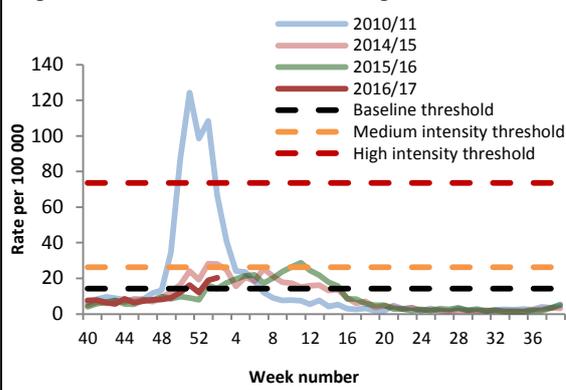
-The highest rates were seen in 75+ year olds (38.4 per 100,000) and 45-64 year olds (28.9 per 100,000).

### RCGP (England and Wales)

- The weekly ILI consultation rate through the RCGP surveillance is at 20.3 per 100,000 in week 02 compared to 18.8 per 100,000 in week 01. This is above the baseline threshold (14.3 per 100,000), consistent with influenza circulating in the community (Figure 4\*). By age group, the highest rates were seen in 75+ year olds (31.0 per 100,000) and 45-64 year olds (26.0 per 100,000).

*\*The Moving Epidemic Method has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for GP ILI consultations for the start of influenza activity in a standardised approach across Europe.*

Figure 4: RCGP ILI consultation rates , England and Wales



### GP In Hours Syndromic Surveillance System (England)

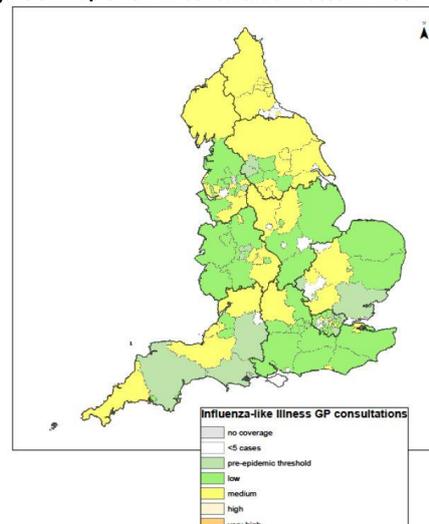
-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system is at 15.5 per 100,000 in week 02 (Figure 5).

Figure 5 represents a map of GP ILI consultation rates in Week 02 across England by Local Authorities, using influenza-like illness surveillance thresholds.

*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 02



## **Influenza confirmed hospitalisations**

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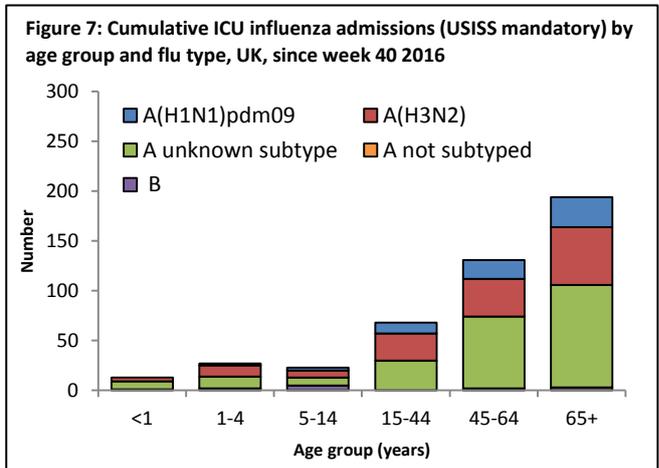
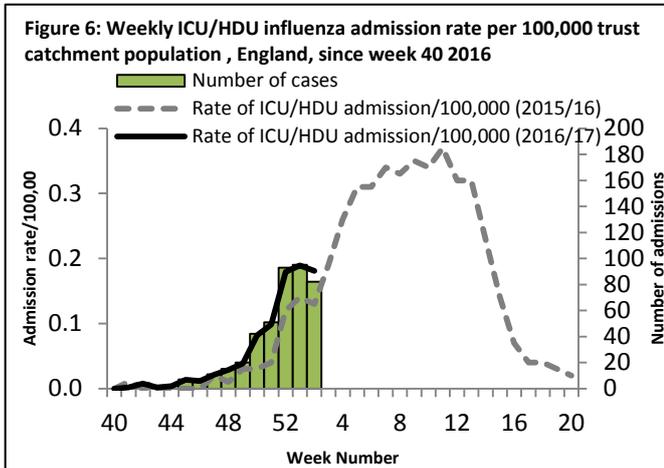
**In week 02, there were 82 admissions to ICU/HDU with confirmed influenza (24 influenza A(H3N2), 46 influenza A(unknown subtype), 11 influenza A(H1N1)pdm09 and 1 influenza B) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (134 Trusts). 135 hospitalised confirmed influenza cases (78 influenza A(H3N2), 54 influenza A(not subtyped) and 3 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 02)

- In week 02, there were 82 admissions to ICU/HDU with confirmed influenza (24 influenza A(H3N2), 46 influenza A(unknown subtype), 11 influenza A(H1N1)pdm09 and 1 influenza B reported across the UK (134/156 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.18 per 100,000 compared to a rate of 0.19 per 100,000 in week 01 (Figures 6 and 7). Eleven deaths were reported in week 02.

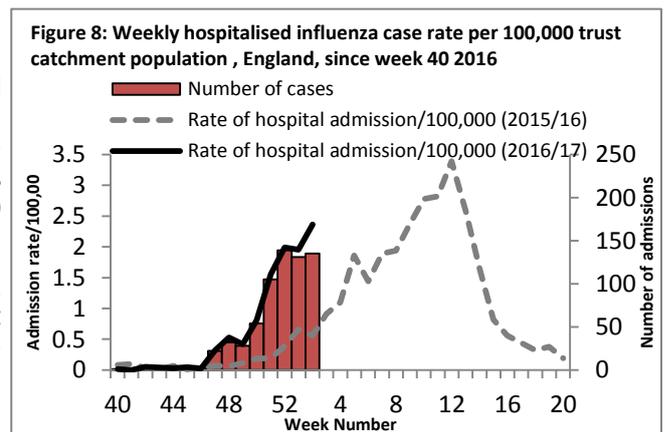
A total of 456 admissions (145 influenza A(H3N2), 65 influenza A(H1N1)pdm09, 233 influenza A(unknown subtype), and 13 influenza B) and 45 confirmed deaths have been reported since week 40 2016.



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 02)

- In week 02, there were 135 hospitalised confirmed influenza cases (78 influenza A(H3N2), 54 influenza A(not subtyped) and 3 influenza B) reported through the USISS sentinel hospital network from 16 NHS Trusts across England (Figure 8), a rate of 2.36 per 100,000 compared to 1.95 per 100,000 in the previous week.

A total of 660 hospitalised confirmed influenza admissions (439 influenza A(H3N2), 203 influenza A(not subtyped) and 18 influenza B) have been reported since week 40 2016.



- USISS Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 02)

- In week 02, there were no confirmed influenza admissions reported from the six Severe Respiratory Failure (SRF) centres in the UK. There has been one confirmed influenza admission (1 influenza A(H3N2)) reported since week 40 2016.

### All-cause mortality data

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**In week 02, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England or in the devolved administrations.**

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 01 2017, an estimated 11,991 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is an increase compared to the 8,009 estimated death registrations in week 52 2016.

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

-In week 02 2017 in England, no excess mortality by week 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. Subnationally, excess mortality was seen in the East Midlands region. This data is provisional due to the time delay in registration; numbers may vary from week to week.

- In the devolved administrations, no significant excess mortality above the threshold was observed in Scotland or Wales in week 02 (Table 2). Data was not available for Northern Ireland.

**Table 1: Excess mortality by age group, England\***

| Age group (years) | Excess detected in week 02 2017? | Weeks with excess in 2016/17 |
|-------------------|----------------------------------|------------------------------|
| <5                | x                                | x                            |
| 5-14              | x                                | x                            |
| 15-64             | x                                | x                            |
| 65+               | x                                | x                            |

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

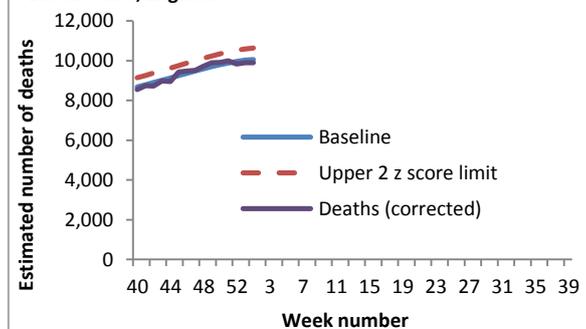
**Table 2: Excess mortality by UK country, for all ages\***

| Country          | Excess detected in week 02 2017? | Weeks with excess in 2016/17 |
|------------------|----------------------------------|------------------------------|
| England          | x                                | x                            |
| Wales            | x                                | x                            |
| Scotland         | x                                | 46,50,51,01                  |
| 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 02 2017, 57 samples tested positive for influenza (35 influenza A(H3N2), 20 influenza A(unknown subtype) and 2 influenza B) through the UK GP sentinel schemes with an overall positivity of 35.4%. 572 positive detections were recorded through the DataMart scheme (486 influenza A(H3N2), 82 influenza A(not subtyped), 2 influenza A(H1N1)pdm09 and 2 influenza B) with a positivity of 26.5% in week 02.**

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

-In week 02, 57 samples tested positive for influenza (35 influenza A(H3N2), 20 influenza A(unknown subtype) and 2 influenza B) through the UK GP sentinel swabbing schemes, with an overall positivity of 35.4% compared to 37.6% in week 01 (Table 3).

Since week 40 2016, 309 samples (266 influenza A(H3N2), 20 influenza A(unknown subtype), 4 influenza A(H1N1)pdm09 and 19 influenza B) have tested positive for influenza through this scheme.

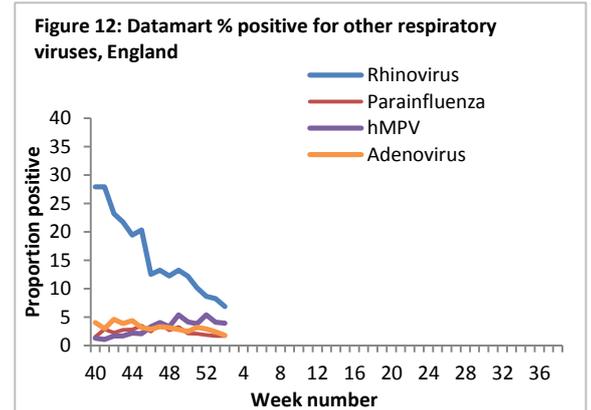
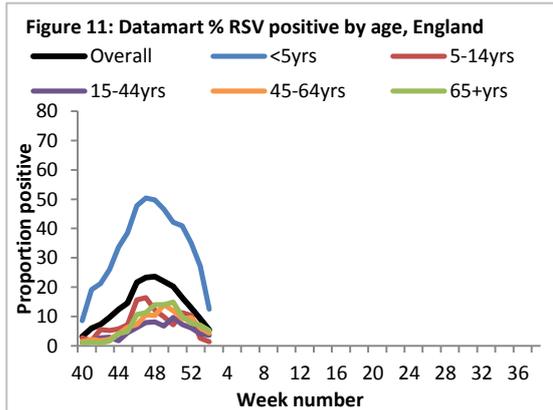
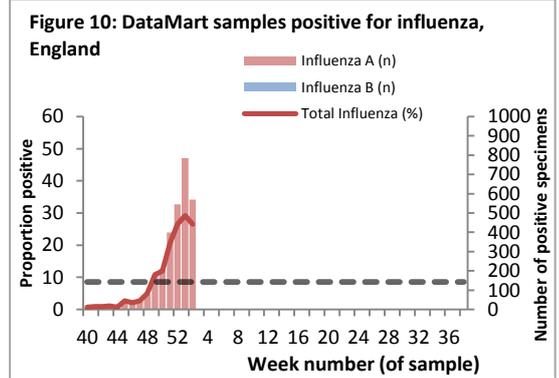
**Table 3: Sentinel influenza surveillance in the UK**

| Week | England        | Scotland      | Northern Ireland | Wales        |
|------|----------------|---------------|------------------|--------------|
| 50   | 40/124 (32.3%) | 15/89 (16.9%) | 3/9 (-)          | 2/10 (20%)   |
| 51   | 44/153 (28.8%) | 14/84 (16.7%) | 5/14 (35.7%)     | 4/15 (26.7%) |
| 52   | 38/87 (43.7%)  | 22/69 (31.9%) | 3/8 (-)          | 4/14 (28.6%) |
| 01   | 47/129 (36.4%) | 19/56 (33.9%) | 8/13 (61.5%)     | 5/12 (41.7%) |
| 02   | 29/67 (43.3%)  | 21/76 (27.6%) | 2/10 (20%)       | 5/8 (-)      |

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 02 2017, out of the 2,156 respiratory specimens reported through the Respiratory DataMart System, 572 samples (26.5%) were positive for influenza (486 influenza A(H3N2), 82 influenza A(not subtyped), 2 influenza A(H1N1)pdm09 and 2 influenza B) (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 (31.5%). The overall positivity for RSV continued to decrease at 5.4% in week 02 compared to 9.3% in week 01. The highest positivity was noted in the <5 year olds at 12.6% in week 02 compared to 27.2% in week 01 (Figure 11). Positivities for rhinovirus decreased to 6.8% in week 02. Positivities for parainfluenza and adenovirus remained at similarly low levels at 1.7% and 1.8% respectively in week 02. Positivity for human metapneumovirus (hMPV) decreased slightly from 4.1% in week 01 to 3.9% in week 02.



\*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 94 A(H3N2) influenza viruses since week 40 showed that they all belong to genetic subclade 3C.2a, with 53 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. Six influenza A(H3N2) viruses have been isolated and antigenically characterised since week 40 2016. The viruses antigenically analysed are similar to the A/HongKong/4801/2014 Northern Hemisphere 2016/17 A(H3N2) vaccine strain.

Three influenza B viruses have been analysed genetically since week 40/2015 and have 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

Influenza positive samples are screened for mutations in the virus neuraminidase gene known to confer oseltamivir and/or zanamivir resistance. Additionally, testing of influenza A (H1N1)pdm09, A(H3N2), and influenza B virus isolates for neuraminidase inhibitor susceptibility (oseltamivir and zanamivir) is performed at PHE-RVU using a functional assay. The data summarized below combine the results of both testing methods. The samples tested are routinely obtained for surveillance purposes, but diagnostic testing of patients suspected to be infected with neuraminidase inhibitor-resistant virus is also performed.

Since week 40 2016, 49 influenza A(H3N2) have been tested for oseltamivir susceptibility; 45 are fully susceptible. Thirty nine of the 49 were also tested for zanamivir susceptibility with 36 being fully susceptible. Three A(H3N2) viruses have been detected with an R292K amino acid substitution, which causes resistance to oseltamivir and a reduction in susceptibility to zanamivir, and one A(H3N2) virus with an E119V amino acid substitution was detected, causing resistance to oseltamivir but not affecting zanamivir susceptibility. All three R292K cases and the E119V case were identified in patients with underlying medical conditions with some exposure to oseltamivir. Only one influenza A(H1N1)pdm09 virus and one influenza B (Yamagata) virus have been tested and both were fully susceptible to neuraminidase inhibitors.

- Antimicrobial susceptibility

-Table 4 shows in the 12 weeks up to 15 January 2017, 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 15 January 2017, E&W

| Organism             | Antibiotic             | Specimens tested (N) | Specimens susceptible (%) |
|----------------------|------------------------|----------------------|---------------------------|
| <i>S. pneumoniae</i> | Penicillin             | 3,834                | 91                        |
|                      | Macrolides             | 4,318                | 82                        |
|                      | Tetracycline           | 4,184                | 84                        |
| <i>H. influenzae</i> | Amoxicillin/ampicillin | 15,166               | 69                        |
|                      | Co-amoxiclav           | 15,738               | 87                        |
|                      | Macrolides             | 5,519                | 13                        |
|                      | Tetracycline           | 15,392               | 98                        |
| <i>S. aureus</i>     | Methicillin            | 6,226                | 90                        |
|                      | Macrolides             | 6,703                | 68                        |
| MRSA                 | Clindamycin            | 375                  | 39                        |
|                      | Tetracycline           | 559                  | 80                        |
| MSSA                 | Clindamycin            | 3,239                | 78                        |
|                      | Tetracycline           | 5,238                | 93                        |

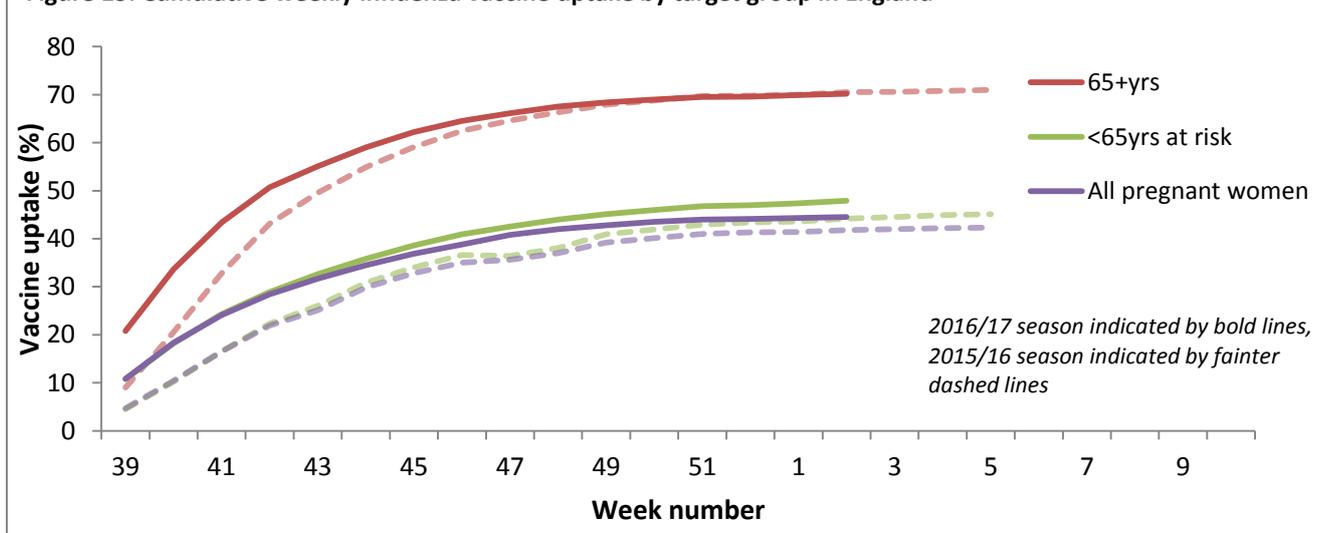
\*Macrolides = erythromycin, azithromycin and clarithromycin

## Vaccination

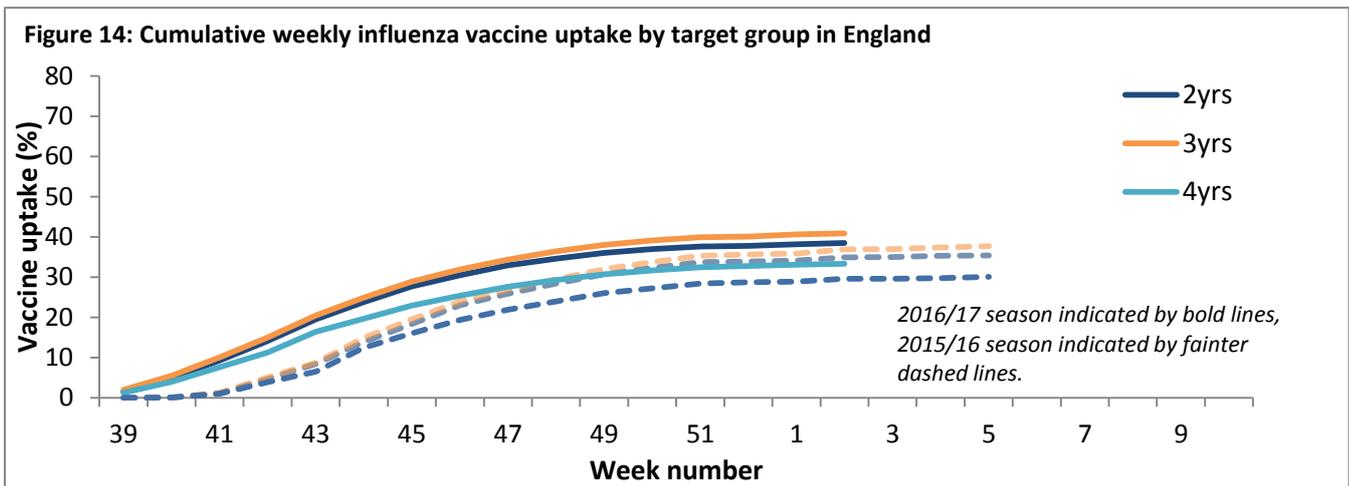
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- Up to week 02 2017 in 90.9% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows, with vaccination activity starting earlier than last season (Figure 13):
  - 47.9% in under 65 years in a clinical risk group
  - 44.5% in pregnant women
  - 70.2% 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 02 2017 in 94.2% 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):
  - 38.5% in all 2 year olds
  - 40.9% in all 3 year olds
  - 33.3% in all 4 year olds



- Provisional data from the third monthly collection of influenza vaccine uptake by frontline healthcare workers show 61.9% were vaccinated by 31 December 2016 from 97.7% of Trusts, compared to 47.6% vaccinated in the previous season by 31 December 2015. The report provides uptake at Trust level.
- Provisional data from the third 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 proportion of children in England who received the 2016/17 influenza vaccine via school, pharmacy or GP practice by 31 December 2016 in targeted groups was as follows:
  - 56.6% in children of school Year 1 age (5-6 years)
  - 54.4% in children of school Year 2 age (6-7 years)
  - 52.4% 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 continued to increase, with many countries especially in Europe and East Asia passing their seasonal threshold early in comparison with previous years. Worldwide, influenza A(H3N2) virus was predominant.**

- [Europe](#) updated on 13 January 2017 (Joint ECDC-WHO Influenza weekly update)

In week 01/2017, influenza activity remained high across the region with high or very high intensity in 10 out of 43 reporting countries.

In week 01/2017, 1 402 of 2 783 (50%) sentinel specimens tested positive for influenza virus. Of these, 97% were type A and 3% were type B. The great majority (>99%) of subtyped influenza A viruses were A(H3N2). The lineage of 12 influenza B viruses was determined with 7 being B/Yamagata lineage.

For week 01/2017, of the 15 countries that conduct sentinel surveillance on severe acute respiratory infection (SARI), 11 reported data and 7 out of 8 countries that conduct surveillance on hospitalized laboratory-confirmed influenza cases reported data.

Of 1,365 SARI cases reported, 320 were tested for influenza and 172 (54%) were positive: 158 A(H3N2) and 14 unsubtyped influenza type A viruses were detected. Since week 40/2016, 17, 172 SARI cases have been reported from 15 countries with 3,494 being tested for influenza, of which 1,686 (48%) were positive: 1 453 (86%) were infected by type A and 233 (14%) by type B viruses. Of the influenza A viruses, 1,381 (95%) were A(H3N2) and 72 were unsubtyped.

For week 01/2017, 8,103 specimens from non-sentinel sources (such as hospitals, schools, non-sentinel primary care facilities, nursing homes and other institutions) tested positive for influenza viruses. Of these, 97% were type A (with 99% of the subtyped viruses being A(H3N2)), and 3% type B.

- [United States of America](#) updated on 13 January 2017 (Centre for Disease Control report)

During week 01, influenza activity increased 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 7.1 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.

Nationwide during week 01, the proportion of outpatient visits for influenza-like illness (ILI) was 3.2%, which is above the national baseline of 2.2%.

- [Canada](#) updated on 13 January 2017 (Public Health Agency report)

Overall, greater numbers of laboratory detections, outbreaks and hospitalizations were reported in week 1 compared to previous weeks suggesting that Canada is nearing peak influenza activity.

A total of 2,639 positive influenza detections were reported in week 1, an increase from the previous week. Influenza A(H3N2) continues to be the most common subtype detected.

106 confirmed influenza outbreaks were reported in week 1, with the majority occurring in long-term care facilities and due to influenza A(H3N2).

The number of hospitalizations, ICU admissions and deaths reported by participating provinces and territories sharply increased from week 52 to week 1; the majority of hospitalizations and all deaths reported in week 1 were in adults.

Influenza activity started early this season, but so far activity has been lower than the 2014-15 season when A(H3N2) was the predominant subtype. Influenza activity started early this season, but so far activity has been lower than the 2014-15 season when A(H3N2) was the predominant subtype.

- [Global influenza update](#) updated on 09 January 2017 (WHO website)

Influenza activity in the temperate zone of the northern hemisphere continued to increase, with many countries especially in Europe and East Asia passing their seasonal threshold early in comparison with previous years. Worldwide, influenza A(H3N2) virus was predominant. The majority of influenza viruses characterized so far is similar antigenically to the reference viruses representing vaccine components for 2016-2017 influenza season. The majority of recently circulating viruses tested for antiviral sensitivity is susceptible to the neuraminidase inhibitor antiviral medications.

In North America, influenza activity continued to increase with influenza A(H3N2) virus predominating. Influenza-like illness (ILI) levels just surpassed the seasonal thresholds in the United States. In the United States, respiratory syncytial virus (RSV) activity increased.

In Europe, influenza activity was increasing, with influenza A (H3N2) virus being the most prominent subtype. Persons aged over 65 years were most frequently associated with severe disease.

In East Asia, influenza activity continued to increase with influenza A(H3N2) viruses predominant. In Western Asia, influenza activity increased slightly. In Southern Asia influenza activity increased mainly due to influenza A(H3N2). Increased activity was reported in recent weeks by the Islamic Republic of Iran and Sri Lanka. In South East Asia, influenza activity continued to decrease, with influenza A(H3N2) virus and influenza B predominating in the region.

In Northern Africa, continued increased influenza detections were reported in Morocco and Tunisia with influenza A(H3N2) virus dominating. In West Africa, influenza continued to be detected in Ghana with B viruses dominating.

In the Caribbean countries and Central America, influenza and other respiratory virus activity remained low in general. In tropical South America, influenza and other respiratory viruses activity remained low.

In the temperate zone of the Southern Hemisphere, influenza activity is at inter-seasonal levels.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 124,657 specimens between 12 December 2016 and 25 December 2016. 25,263 were positive for influenza viruses, of which 24,223 (95.9%) were typed as influenza A and 1,040 (4.1%) as influenza B. Of the sub-typed influenza A viruses, 159 (1.3%) were influenza A(H1N1)pdm09 and 11,927 (98.7%) were influenza A(H3N2). Of the characterized B viruses, 67 (34.9%) belonged to the B-Yamagata lineage and 125 (65.1%) 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 [11 January 2017](#), the Department of Health, China, Hong Kong Special Administrative Region (SAR) notified WHO of a laboratory-confirmed human infection with avian influenza A(H7N9) virus and on 12 January 2017, the Health Bureau, China, Macao SAR notified WHO of an additional laboratory-confirmed case of human infection with avian influenza A(H7N9) virus.

On [5 January 2017](#), the Department of Health, Hong Kong Special Administrative Region (SAR) notified WHO of a case of laboratory-confirmed human infection with avian influenza A(H7N9) virus and on 9 January 2017, the National Health and Family Planning Commission of China (NHFPC) notified WHO of 106 additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus.

A total of 918 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 [16 and 31 December 2016](#) the National IHR Focal Point of Saudi Arabia reported fifteen (15) additional cases of Middle East Respiratory Syndrome (MERS) including two (2) fatal cases. Five (5) deaths among previously reported MERS cases were also reported.

Up to 18 January 2017, 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 927 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

Globally, since September 2012, WHO has been notified of 1,879 laboratory-confirmed cases of infection with MERS-CoV, including at least 666 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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## **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 [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](#))