PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

20 October 2016 – Week 42 report (up to week 41 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.

Summary

At the start of the 2016/17 influenza season, activity is at low levels in week 41 (ending 16 October 2016).

- Community influenza surveillance
  - Eight new acute respiratory outbreaks have been reported in the past 7 days. Six outbreaks were from care homes with no test results available and two outbreaks were from hospitals (one tested positive for influenza A and the other for influenza B).
- Overall weekly influenza GP consultation rates across the UK
  - In week 41, the overall weekly influenza-like illness (ILI) GP consultation rate was 7.8 per 100,000 in England and is below the baseline threshold. In the devolved administrations, ILI rates remained low and similar to the previous week.
  - Through the GP In Hours surveillance system, GP consulations for ILI continued to increase.
- Influenza-confirmed hospitalisations
  - No admissions to ICU/HDU with confirmed influenza were reported across the UK (114 Trusts) through the USISS mandatory ICU scheme in week 41.
  - No hospitalised confirmed influenza cases were reported through the USISS sentinel hospital network (16 NHS Trusts across England) in week 41.
  - No confirmed influenza admissions have been reported from the six Severe Respiratory Failure centres in the UK in week 41.
- All-cause mortality data
  - In week 41 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 and across the devolved administrations.
- Microbiological surveillance
  - No samples tested positive for influenza through GP sentinel schemes across the UK.
  - Six influenza positive detections were recorded through the DataMart scheme (1 A(H1N1)pdm09, 3 A(H3N2) and 2 influenza B). A positivity of 0.7% was seen in week 41, with the highest positivity seen in the 5-14 year olds (2.0%).This is below the all-age threshold for 2016/17 season of 8.6%.
- Vaccination
  - Up to week 41 2016, in 81.3% 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: 24.3% in under 65 years in a clinical risk group, 24.1% in pregnant women, 43.4% in 65+ year olds. In 92.0% of GP practices to Immform, the provisional proportion of children in England who had received the 2016/17 influenza vaccine was as follows: 9.3% in all 2 year olds, 10.1% in all 3 year olds and 7.6% in all 4 year olds.
- International situation
  - Influenza activity is low and at inter-seasonal levels in the Northern Hemisphere but showing signs of decreasing in the Southern hemisphere.

Community surveillance

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During week 41, GP respiratory indicators increased but remain within seasonally expected levels. Eight new acute respiratory outbreaks were reported in the past 7 days.

- PHE Real-time Syndromic Surveillance

- During week 41 GP consultations for respiratory conditions including influenza-like illness and upper and lower respiratory tract infections continued to increase, but remain within seasonally expected levels

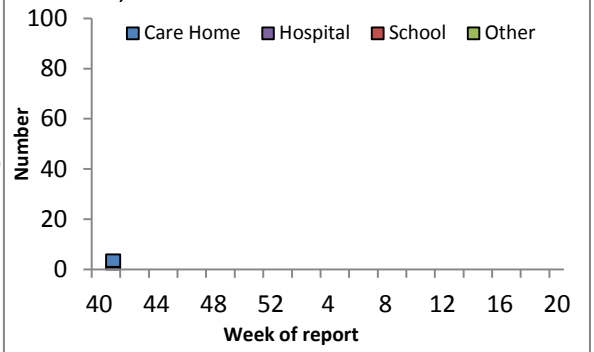
- For further information, please see the syndromic surveillance webpage.

- Acute respiratory disease outbreaks

- Eight new acute respiratory outbreaks have been reported in the past 7 days. Six outbreaks were from care homes where no test results were available. Two outbreaks were from hospitals where one tested positive for influenza A and the other was positive for influenza B.

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

Figure 1: Number of acute respiratory outbreaks by institution, UK



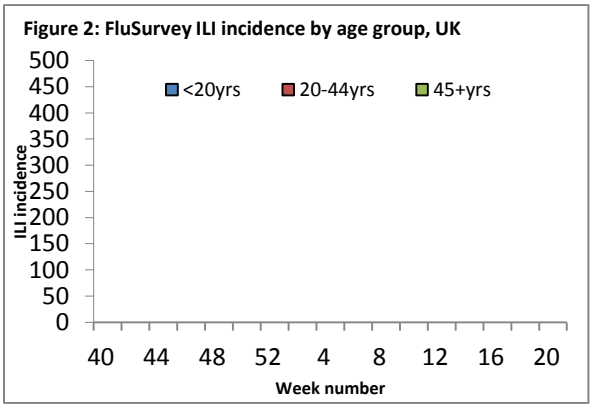
- FluSurvey

- Internet-based surveillance of influenza in the general population is undertaken through the FluSurvey. A project run jointly by PHE and the London School of Hygiene and Tropical Medicine.

- Data is expected later in the season.

- If you would like to become a participant of the FluSurvey project please do so by visiting the http://flusurvey.org.uk website for more information.

Figure 2: FluSurvey ILI incidence by age group, UK



Weekly consultation rates in national sentinel schemes

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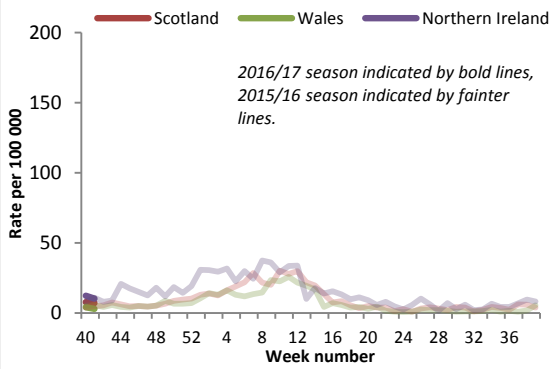
In week 41, overall weekly influenza-like illness GP consultations were low in England, Wales, Northern Ireland and Scotland.

- Influenza/Influenza-Like-Illness (ILI)

Figure 3: GP ILI/influenza consultation rates in the devolved administrations.



Northern Ireland

-The Northern Ireland ILI rate was at 10.3 per 100,000 in week 41 compared to 12.2 per 100,000 (Figure 3). This remains below the baseline threshold (47.9 per 100,000).

-The highest rates were seen in the <1 year olds (55.3 per 100,000) and 65-74 year olds (23.9 per 100,000).

Wales

-The Welsh ILI rate was at 3.0 per 100,000 in week 41 compared to 4.2 per 100,000 in week 40 (Figure 3). This remains below the baseline threshold (10.3 per 100,000).

- The highest rates were seen in the 45-64 year olds (5.2 per 100,000) and 15-44 year olds (3.7 per 100,000).

Scotland

-The Scottish ILI rate was at 7.0 per 100,000 in week 41 compared to 7.7 per 100,000 in week 40 (Figure 3). This remains below baseline threshold (36.1 per 100,000).

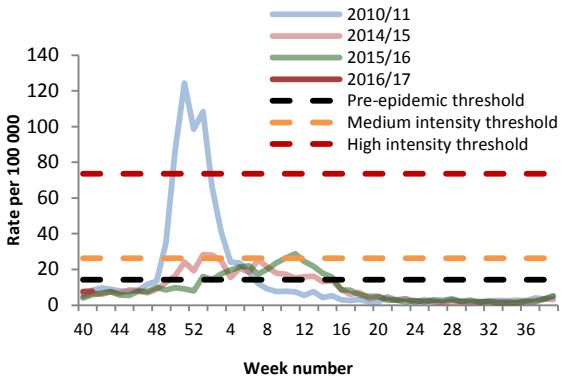
-The highest rates were seen in 45-64 year olds (9.8 per 100,000) and 15-44 year olds (7.3 per 100,000).

RCGP (England and Wales)

- The weekly ILI consultation rate through the RCGP surveillance is 7.8 per 100,000 in week 41compared to 7.7 per 100,000 in week 40. This is below the baseline threshold (14.3 per 100,000) (Figure 4*). By age group, the highest rates were seen in 15-44 year olds (10.2 per 100,000) and 45-64 year olds (8.7 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)

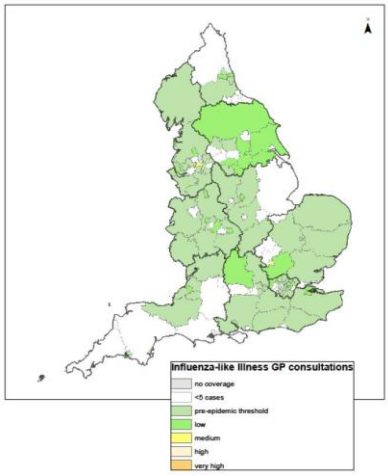
-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system has decreased at 5.4 per 100,000 in week 41 (Figure 5).

Figure 5 represents a map of GP ILI consultation rates in Week 40 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 40



Influenza confirmed hospitalisations

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In week 41, there were no admissions to ICU/HDU with confirmed influenza reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (114 Trusts). No hospitalised confirmed influenza cases 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 41)

- In week 41, there were no admissions to ICU/HDU with confirmed influenza reported across the UK (114/156 Trust) through the USISS mandatory ICU scheme (Figures 6 and 7). No confirmed influenza deaths were reported in week 41 2016.

Figure 6: Weekly ICU/HDU influenza admission rate per 100,000 trust catchment population , England, since week 40 2016

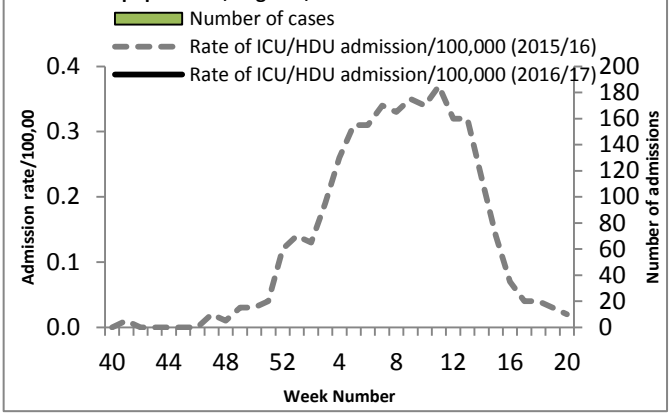
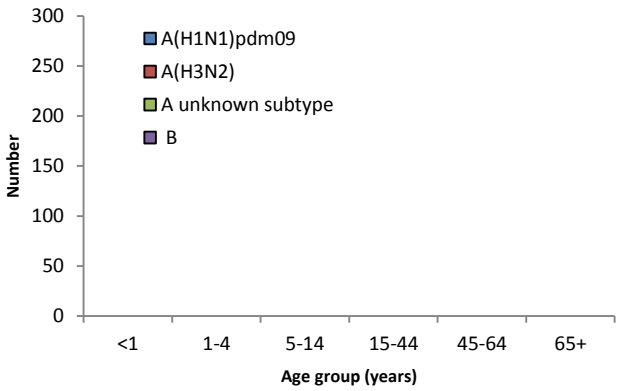


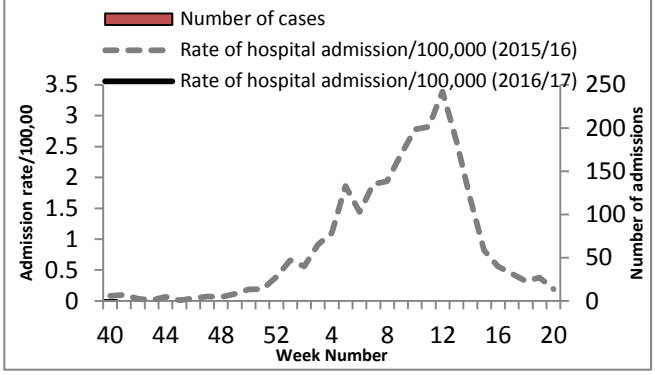
Figure 7: Cumulative ICU influenza admissions (USISS mandatory) by age group and flu type, UK, since week 40 2016



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 41)

- In week 41, there were no hospitalised confirmed influenza cases reported through the USISS sentinel hospital network from 16 NHS Trusts across England (Figure 8), a rate of 0.00 per 100,000 compared to 0.16 per 100,000 in the previous week. A total of one hospitalised confirmed influenza admission (influenza A(H3N2)) has been reported since week 40 2016.

Figure 8: Weekly hospitalised influenza case rate per 100,000 trust catchment population , England, since week 40 2016



- USISS Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 41)

- In week 41, there were no confirmed influenza admissions reported from the six Severe Respiratory Failure (SRF) centres in the UK.

All-cause mortality data

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In week 41, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England. In the devolved administrations, no significant excess mortality was noted in week 41 2016.

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 40 2016, an estimated 9,291 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is an increase compared to the 8,994 estimated death registrations in week 39 2016.

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

-In week 41 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, no significant excess mortality above the threshold was seen in week 41 2016 (Table 2).

Table 1: Excess mortality by age group,England*

Age group (years)	Excess detected in week 41 2016?	Weeks with excess in 2016/17
<5	×	NA
5-14	×	NA
15-64	×	NA
65+	×	NA

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

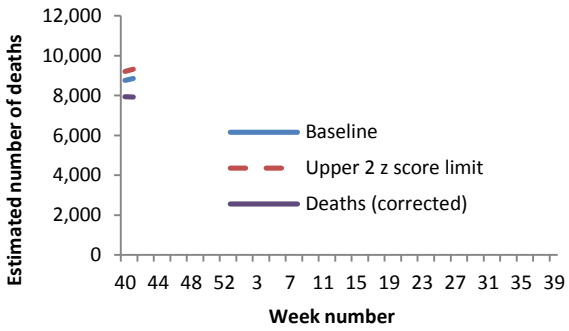
Table 2: Excess mortality by UK country*

Country	Excess detected in week 41 2016?	Weeks with excess in 2016/17
England	×	NA
Wales	×	NA
Scotland	×	NA
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 41 2016, no samples tested for influenza through the UK GP sentinel schemes were positive. Six positive detections were recorded through the DataMart scheme (1 A(H1N1)pdm09, 3 A(H3N2) and 2 influenza B).

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

-In week 41, no samples tested positive for influenza through the UK GP sentinel swabbing schemes, an overall positivity of 0.0% compared to 0.9% in week 40 (Table 3).

Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
40	0/42 (-)	1/62 (1.6%)	0/2 (-)	0/2 (-)
41	0/66 (-)	0/45 (-)	0/3 (-)	0/3 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 41 2016, out of the 886 respiratory specimens reported through the Respiratory DataMart System, six samples (0.7%) were positive for influenza (1 A(H1N1)pdm09, 3 A(H3N2) and 2 B) (Figure 10). The highest positivity was in the 5-14 year olds at 2.0%. The overall positivity for RSV remained increased at 3.1% in week 40 compared to 5.9% in week 41 (Figure 11). Positivity for rhinovirus remained high at 27.1%. Positivities for other viruses were low, parainfluenza at 3.3%; adenovirus at 2.7% and hMPV at 1.1% (Figure12).

Figure 10: DataMart samples positive for influenza, England

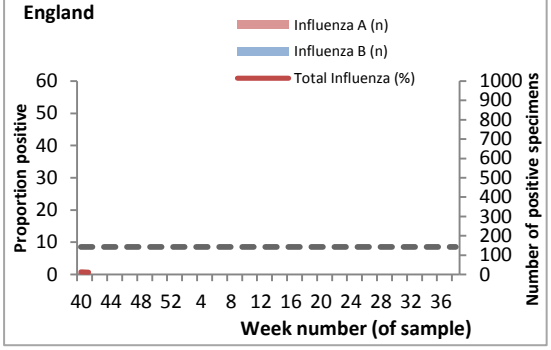


Figure 11: Datamart % RSV positive by age, England

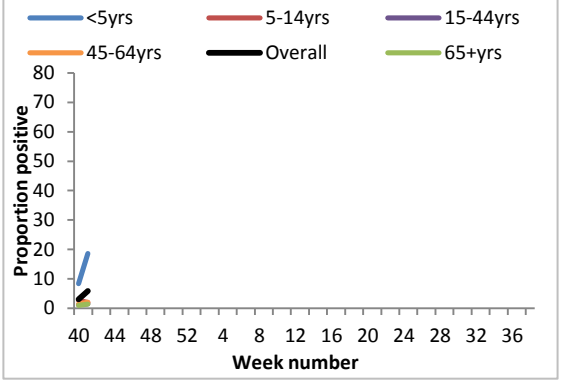
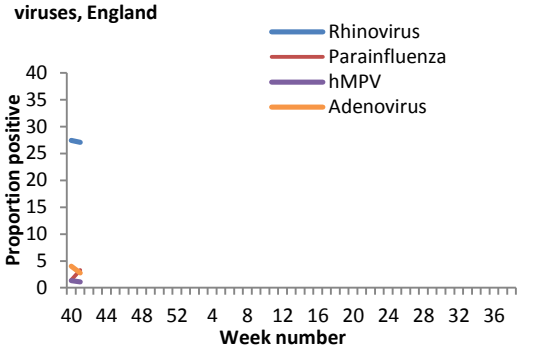


Figure 12: Datamart % positive for other respiratory viruses, England



**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

In week 41 2016, no influenza viruses were isolated or characterised by PHE Respiratory Virus Unit (RVU).

- Antiviral susceptibility

Since week 40 2016, no influenza viruses have been tested for oseltamivir and zanamivir susceptibility.

- Antimicrobial susceptibility

-Table 4 shows in the 12 weeks up to 16 October 2016, the proportion of all lower respiratory tract isolates of *Streptococcus pneumoniae*, *Haemophilus influenza, 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 16 October 2016, E&W

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
S. pneumoniae	Penicillin	2,501	88
	Macrolides	2,793	79
	Tetracycline	2,724	80
H. influenzae	Amoxicillin/ampicillin	12,474	70
	Co-amoxiclav	12,685	88
	Macrolides	5,046	14
	Tetracycline	12,500	98
S. aureus	Methicillin	5,783	91
	Macrolides	6,136	68
MRSA	Clindamycin	303	41
	Tetracycline	465	84
MSSA	Clindamycin	2,940	78
	Tetracycline	4,848	93

Macrolides = erythromycin, azithromycin and clarithromycin

Vaccination

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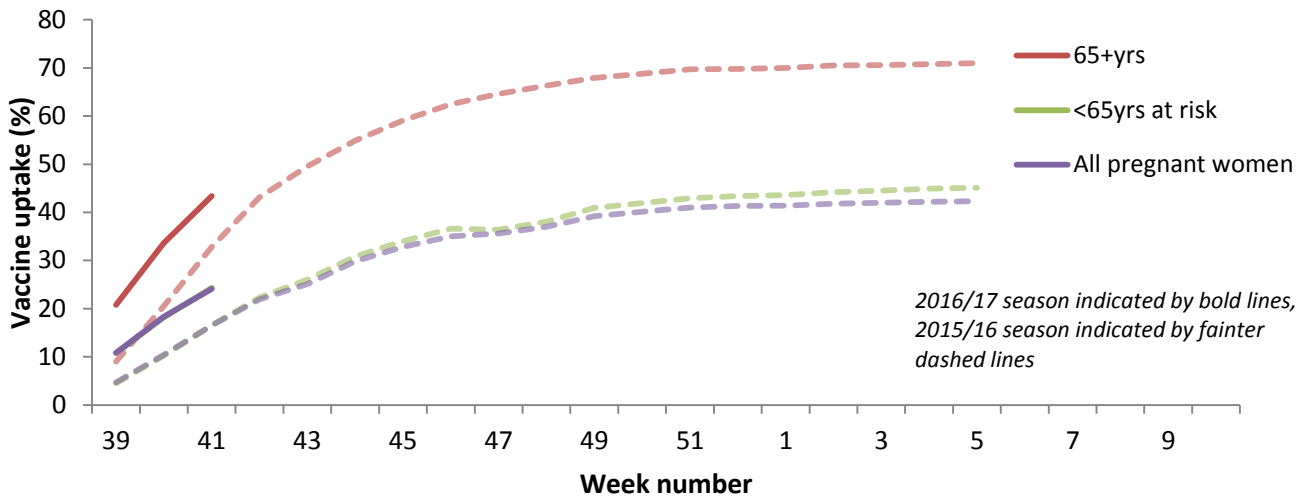
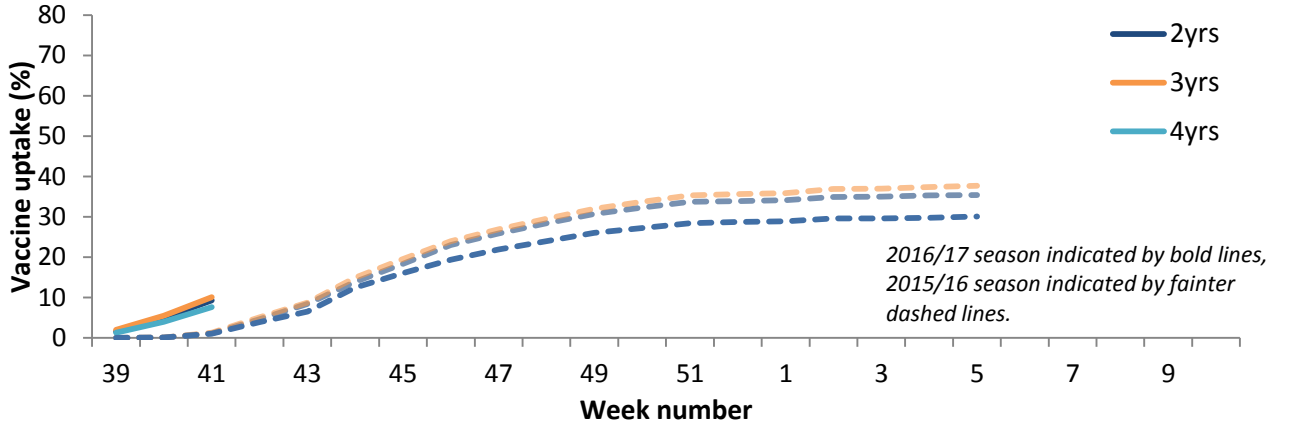
- Up to week 41 2016 in 81.3% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows, with vaccination activity starting earlier than last season (Figure 13):
    - 24.3% in under 65 years in a clinical risk group
    - 24.1% in pregnant women
    - 43.4% 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 41 2016 in 92.0% 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):
    - 9.3% in all 2 year olds
    - 10.1% in all 3 year olds
    - 7.6% in all 4 year olds

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



International Situation

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Influenza activity is low and at inter-seasonal levels in the Northern Hemisphere but showing signs of decreasing in the Southern hemisphere.

- Europe updated on 14 October 2016 (Joint ECDC-WHO Influenza weekly update)

In week 40/2016, influenza activity in the WHO European Region has remained at low levels with all countries reporting low intensity.

In week 40/2016, only one sentinel-source specimen tested positive for influenza virus (one influenza B in Scotland).

No influenza-infected cases were reported by countries that conduct surveillance based on SARI or hospitalized laboratory-confirmed influenza cases in intensive care units or other wards.

- United States of America updated on 14 October 2016 (Centre for Disease Control report)

During week 40, influenza activity was low in the United States.

The most frequently identified influenza virus type reported by public health laboratories during week 40 was influenza A, in particular A(H3N2). The percentage of respiratory specimens testing positive for influenza in clinical laboratories is low.

Nationwide during week 40, the proportion of outpatient visits for influenza-like illness (ILI) was 1.1%, which is below the national baseline of 2.2%.

- Canada updated on 14 October 2016 (Public Health Agency report)

Influenza activity is at inter-seasonal levels with the majority regions of Canada reporting low or no influenza activity.

In week 39, four regions experienced localized activity while in week 40 no regions experienced localized activity. The majority of activity in both weeks 39 and 40 was reported in Western regions of Canada.

Nationally in weeks 39-40, there were 127 positive influenza tests reported. Influenza A(H3N2) was the most common subtype detected in both weeks and the percentage of tests positive for influenza remained at interseasonal levels, with 2.5% of tests positive in week 39 and 2.3% in week 40.

In weeks 39 and 40, approximately1.0% of visits to healthcare professionals were due to ILI.

In weeks 39-40, six laboratory confirmed influenza outbreaks were reported, with one outbreak due to influenza A(H3N2).

To date this season, over 25 influenza-associated hospitalizations were reported by participating provinces and territories with the majority of hospitalizations reported in adults aged 65 years or older.

- Global influenza update updated on 03 October 2016 (WHO website)

Influenza activity decreased in Oceania, South Africa and temperate South America. Influenza activity in the temperate zone of the northern hemisphere remained at inter-seasonal levels.

In temperate South America, influenza and respiratory syncytial virus (RSV) activity decreased throughout most of the sub-region. In Chile, influenza-like illness (ILI) and laboratory confirmed influenza detections decreased but remained elevated with A(H3N2) viruses predominant followed by influenza B viruses. In Paraguay, ILI and severe acute respiratory infection (SARI) cases decreased with decreasing detections of respiratory viruses.

In the temperate countries of Southern Africa, influenza detections decreased with A(H1N1)pdm09 virus dominant.

In Oceania, influenza virus activity decreased in the last few weeks. Influenza A(H3N2) remained the dominant circulating influenza virus. In Australia, activity decreased but was still high, while in New Zealand ILI consultation rates remained below the seasonal baseline level.

In the Caribbean countries, influenza and other respiratory virus activity remained low except in Cuba where influenza B virus detections increased and in French Guiana where ILI activity and influenza detections increased slightly. In Central America, influenza virus activity remained low but detections of RSV increased in several countries.

In tropical South America, respiratory virus activities remained low in most of the countries, except in Colombia, where RSV activity increased.

In tropical countries of South Asia, influenza activity was generally low with predominantly influenza B detections.

In South East Asia, in general a decreasing trend in influenza detection was observed, although in Lao People's Democratic Republic (PDR) and Thailand increased number of influenza detections were reported in recent weeks.

In tropical countries of Africa, Ghana and Senegal reported slightly increased influenza activity.

In Northern temperate Asia, influenza activity remained low with predominantly influenza A(H3N2) detections in northern China.

In North America and Europe, influenza activity was low with few influenza virus detections and ILI levels below seasonal thresholds. In the United States, RSV activity increased.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 43,038 specimens between 19 September 2016 and 02 October 2016. 2,619 were positive for influenza viruses, of which 2,150 (82.1%) were typed as influenza A and 469 (17.9%) as influenza B. Of the sub-typed influenza A viruses, 161 (9.3%) were influenza A(H1N1)pdm09 and 1,577 (90.7%) were influenza A(H3N2). Of the characterized B viruses, 22 (19.6%) belonged to the B-Yamagata lineage and 90 (80.4%) to the B-Victoria lineage.

- Avian Influenza latest update on 03 October 2016 (WHO website)

Influenza A(H5) viruses
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) viruses have the potential to cause disease in humans, no human cases have been reported so far. According to reports received by the World Organisation for Animal Health (OIE), various influenza A(H5) subtypes, such as influenza A(H5N1), A(H5N2), A(H5N6), A(H5N8) and A(H5N9), continue to be detected in birds in West Africa, Europe and Asia.

Influenza A(H7N9)
Since the last update on 19 July 2016, China reported five laboratory-confirmed human cases of A(H7N9) virus infection to WHO on 11 August 2016, including one fatal case. One cluster of three cases was reported for which the possibility of human-to-human transmission for two cases in the cluster cannot be excluded.

A total of 798 laboratory-confirmed cases of human infection with avian influenza A(H7N9) viruses, including at least 320 deaths, have been reported to WHO.

- Middle East respiratory syndrome coronavirus (MERS-CoV) latest update on 21 September 2016

Between 23 August and 11 September 2016 the National IHR Focal Point of Saudi Arabia reported five (5) additional cases of Middle East Respiratory Syndrome (MERS).

Up to 19 October 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 861 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

Globally, since September 2012, WHO has been notified of 1,806 laboratory-confirmed cases of infection with MERS-CoV, including at least 643 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.

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This report was prepared by the Influenza section, Respiratory Diseases Department, Centre for Infectious Disease Surveillance and Control, Public Health England. We are grateful to all who provided data for this report including the RCGP Research and Surveillance Centre, the PHE Real-time Syndromic Surveillance team, the PHE Respiratory Virus Unit, the PHE Modelling and Statistics unit, the PHE Dept. of Healthcare Associated Infection & Antimicrobial Resistance, PHE regional microbiology laboratories, NHS Direct, Office for National Statistics, the Department of Health, Health Protection Scotland, National Public Health Service (Wales), the Public Health Agency Northern Ireland, the Northern Ireland Statistics and Research Agency, QSurveillance® and EMIS and EMIS practices contributing to the QSurveillance® database.

Related links | Back to top |

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)