



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

04 May 2017 – Week 18 report (up to week 17 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 17 (ending 30 April 2017), influenza activity continues to decrease across all indicators with some circulation of influenza B. 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 influenza-like illness (ILI) were stable in week 17.
 - 10 new acute respiratory outbreaks have been reported in the past 7 days. Nine outbreaks were from care homes, where one tested positive for parainfluenza. The remaining outbreak was from a hospital with no test results available.
- [Overall weekly influenza GP consultation rates across the UK](#)
 - In week 17, the overall weekly influenza-like illness (ILI) GP consultation rate was 2.9 per 100,000 in England compared to 2.7 per 100,000 in the previous week. This is below the baseline threshold of 14.3 per 100,000 for this season. In the devolved administrations, ILI rates were low.
- [Influenza-confirmed hospitalisations](#)
 - In week 17, there were five admissions to ICU/HDU with confirmed influenza (four influenza B and one influenza A(unknown subtype)) were reported across the UK (116/156 Trusts in England) through the USSS mandatory ICU scheme with a rate of 0.01 per 100,000 compared to 0.02 per 100,000 in the previous week.
 - In week 17, there were four hospitalised confirmed influenza cases (two influenza B and two influenza A(H3N2)) reported through the USSS sentinel hospital network (13 NHS Trusts across England), with a rate of 0.06 per 100,000, compared to 0.13 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 17.
- [All-cause mortality data](#)
 - In week 17 2017, no statistically significant excess all-cause mortality by week of death was seen through the EuroMOMO algorithm in England and in the devolved administrations.
- [Microbiological surveillance](#)
 - Five samples tested positive for influenza (five influenza B) through the UK GP sentinel swabbing schemes, with an overall positivity of 16.1% compared to 17.6% in week 16.
 - 27 influenza positive detections were recorded through the DataMart scheme (four influenza A(H3), five influenza A(not subtyped) and 18 influenza B) in week 16. The overall positivity was at 3.9% in week 17 compared to 4.2% in week 16, which is below the threshold for 2016/17 season of 8.6%. The highest age-specific positivities were seen in the 65+ year olds (6.5%).
- [Vaccination](#)
 - Provisional data from the fifth monthly collection of influenza vaccine uptake by frontline healthcare workers show 63.4% were vaccinated by 28 February 2017, compared to 50.8% vaccinated in the previous season by 29 February 2016. The report provides uptake at Trust level.
 - Up to week 04 2017, in 85.0% 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: 48.5% in under 65 years in a clinical risk group, 44.9% in pregnant women and 70.5% in 65+ year olds. In 88.1% of GP practices reporting to Immform, the provisional proportion of children in England who had received the 2016/17 influenza vaccine was as follows: 39.0% in all 2 year olds, 41.6% in all 3 year olds and 33.8% in all 4 year olds.
 - Provisional data from the fourth monthly collection of influenza vaccine uptake in GP patients up to 31 January 2017 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 fourth 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 January 2017 in targeted groups was as follows: 57.6% in children of school Year 1 age (5-6 years); 55.3% in children of school Year 2 age (6-7 years); 53.3% 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 decrease. Influenza activity remained low in the temperate zone of the southern hemisphere. Worldwide, influenza A(H3N2) and B viruses were predominant, with an increased proportion of influenza B viruses detected in recent weeks.
 - The [vaccine recommendation for the 2017-2018 northern hemisphere](#) influenza season has been made.

Through the GP In Hours Syndromic Surveillance system, GP consultations for influenza-like illness (ILI) were stable in week 17. 10 new acute respiratory outbreaks were reported in the past 7 days.

- PHE Real-time Syndromic Surveillance

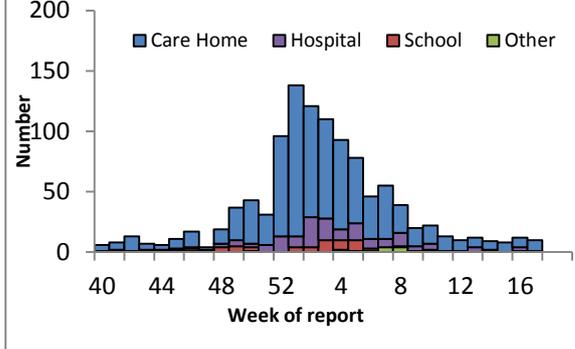
- During week 17, GP consultations for influenza-like illness were stable.
- For further information, please see the syndromic surveillance [webpage](#).

- Acute respiratory disease outbreaks

- 10 new acute respiratory outbreaks have been reported in the past 7 days. Nine outbreaks were from care homes, where one tested positive for parainfluenza. The remaining outbreak was from a hospital with no test results available.

- 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



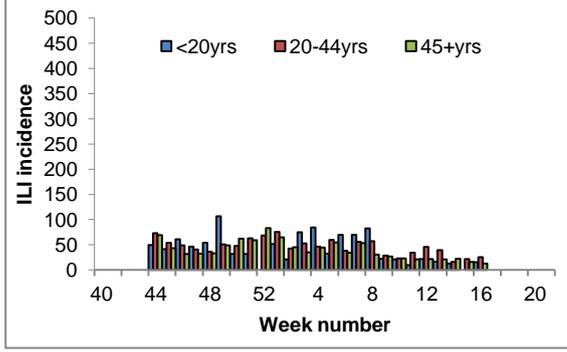
- FluSurvey

- Internet-based surveillance of influenza-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 16 was 16.0 per 1,000 (28/1,762 people reported at least 1 ILI), with the 20-44 years age group reporting a higher rate of 25.5 per 1,000.

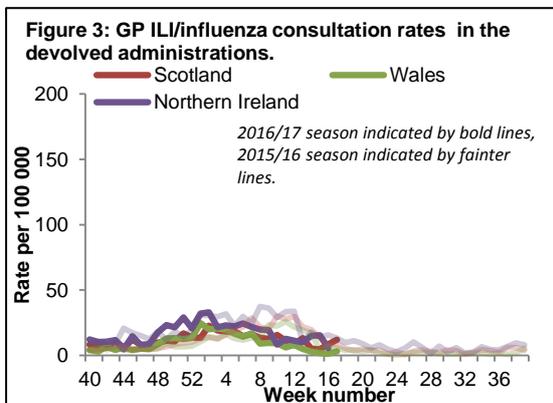
- If you would like to become a participant of the FluSurvey project please do so by visiting the <https://flusurvey.org.uk/en/accounts/register/> website for more information.

Figure 2: FluSurvey ILI incidence by age group, UK



In week 17, the overall weekly influenza-like illness GP consultation rate is low and is below the baseline threshold in England. In the devolved administrations, ILI rates were low in week 17.

- Influenza/Influenza-Like-Illness (ILI)



Northern Ireland

- The Northern Ireland ILI rate was not available for week 17.

Wales

-The Welsh ILI rate has increased at 3.1 per 100,000 in week 17 compared to 1.3 per 100,000 in week 16 (Figure 3). This is below the baseline threshold (10.3 per 100,000).

- The highest rates were seen in the 15-44 year olds (5.8 per 100,000) and 75+ year olds (3.4 per 100,000).

Scotland

-The Scottish ILI rate has increased at 12.1 per 100,000 in week 17 compared to 8.5 per 100,000 in week 16 (Figure 3). This remains below the baseline threshold (36.1 per 100,000).

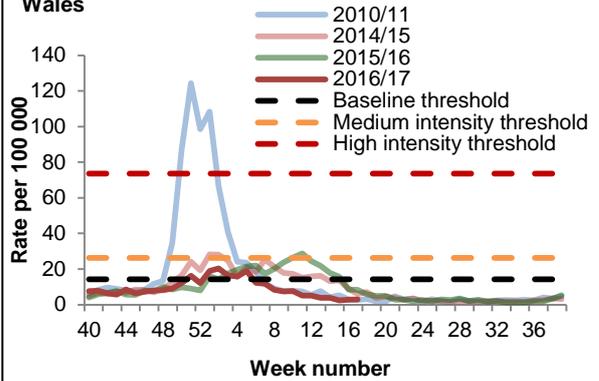
-The highest rates were seen in 75+ year olds (17.3 per 100,000) and 45-64 year olds (16.2 per 100,000).

RCGP (England and Wales)

- The weekly ILI consultation rate through the RCGP surveillance is at 2.9 per 100,000 in week 17 compared to 2.7 per 100,000 in week 16. This is below the baseline threshold (14.3 per 100,000) (Figure 4*). By age group, the highest rates were seen in 75+ year olds (4.2 per 100,000) and 45-64 year olds (3.9 per 100,000 respectively).

**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 2.5 per 100,000 in week 17.

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

Influenza confirmed hospitalisations

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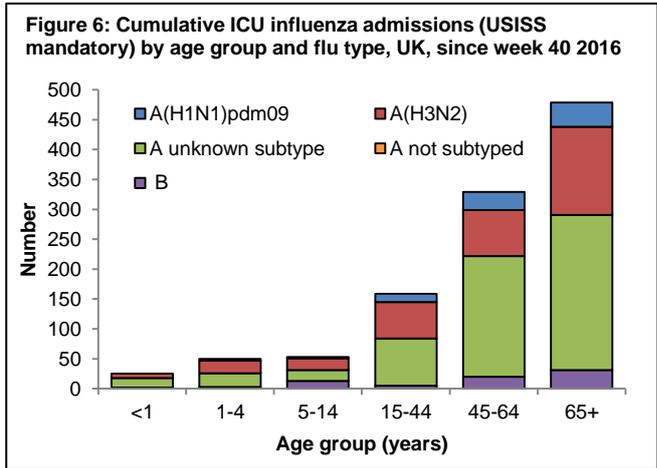
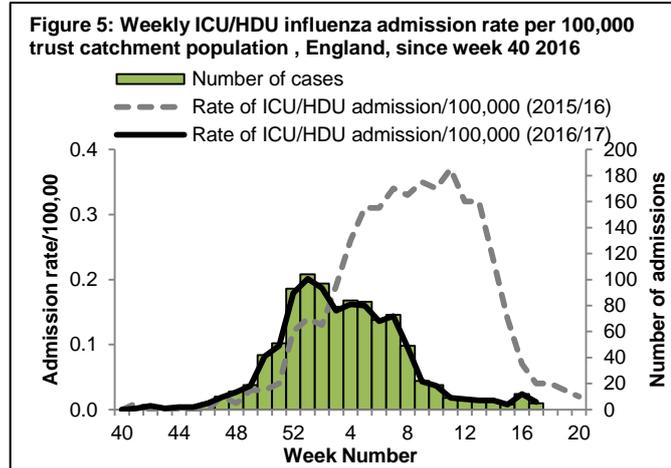
In week 17, there were five admissions to ICU/HDU with confirmed influenza (four influenza B and one influenza A(unknown subtype)) were reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (116 Trusts). Four hospitalised confirmed influenza cases (two influenza B and two influenza A(H3N2)) were reported through the USISS sentinel hospital network across England (13 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 17)

- In week 17, there were five admissions to ICU/HDU with confirmed influenza (four influenza B and one influenza A(unknown subtype) reported across the UK (116/156 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.01 per 100,000 compared to a rate of 0.02 per 100,000 in week 16 (Figures 6 and 7). One death was reported to have occurred in week 17.

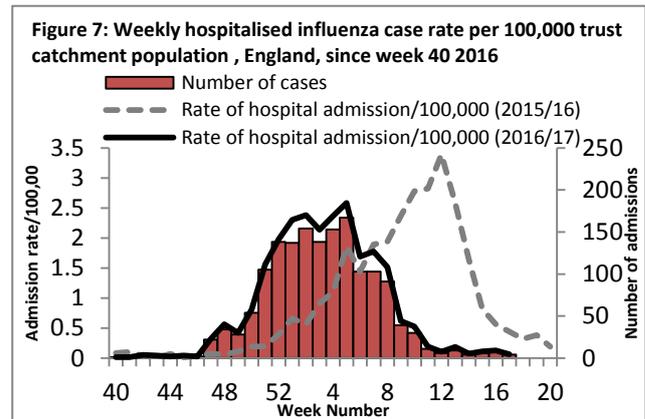
A total of 1,095 admissions (598 influenza A(unknown subtype), 333 influenza A(H3N2), 90 influenza A(H1N1)pdm09 and 74 influenza B) and 136 confirmed deaths have been reported since week 40 2016.



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 17)

- In week 17, there were four hospitalised confirmed influenza cases (two influenza B and two influenza A(H3N2)) reported through the USISS sentinel hospital network from 13 NHS Trusts across England (Figure 8), a rate of 0.06 per 100,000 compared to 0.13 per 100,000 in the previous week.

A total of 1,559 hospitalised confirmed influenza admissions (1,040 influenza A(H3N2), 417 influenza A(not subtyped), 75 influenza B and 27 influenza A(H1N1pdm09)) have been reported since week 40 2016.



- USISS Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 17)

- In week 17, there were no confirmed influenza admissions reported from the six Severe Respiratory Failure (SRF) centres in the UK. There have been four confirmed influenza admissions (one influenza A(H3N2) and three influenza A(unknown subtype)) reported since week 40 2016.

All-cause mortality data

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In week 17 2017 in England, 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 all-cause mortality was observed in week 17.

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.

- All-cause death registrations, England and Wales

- In week 16 2017, an estimated 9,644 all-cause deaths were registered in England and Wales (source: [Office for National Statistics](#)). This is an increase compared to the 8,493 estimated death registrations in week 15 2017.

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

- In week 17 2017 in England, no excess mortality by week of death above the upper 2 z-score threshold was seen overall, by age group or subnationally, after correcting ONS disaggregate data for reporting delay with the standardised EuroMOMO algorithm (Table 1). 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 week 17 (Table 2).

Table 1: Excess mortality by age group, England*

Age group (years)	Excess detected in week 17 2017?	Weeks with excess in 2016/17
<5	x	-
5-14	x	-
15-64	x	52-01
65+	x	45, 51-05

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

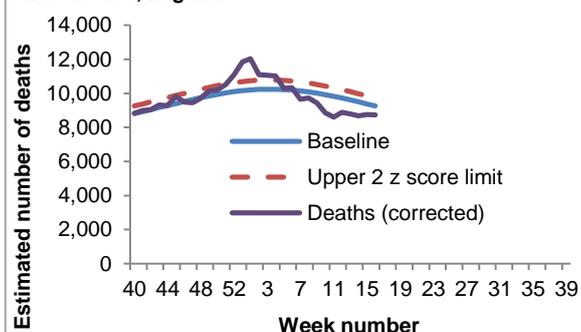
Table 2: Excess mortality by UK country, for all ages*

Country	Excess detected in week 17 2017?	Weeks with excess in 2016/17
England	x	52-05
Wales	x	03
Scotland	x	46,50-51,01,05
Northern Ireland	x	50-51,01-03,05,07

* 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 8: Excess mortality in all ages by week of death, EuroMOMO, England



Microbiological surveillance

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In week 16 2017, five samples tested positive for influenza (five influenza B) through the UK GP sentinel schemes with an overall positivity of 16.1%. 27 positive detections were recorded through the DataMart scheme (four influenza A(H3), five influenza A(not subtyped) and 18 influenza B) with a positivity of 3.9% in week 17.

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

-In week 17, five samples tested positive for influenza (five influenza B) through the UK GP sentinel swabbing schemes, with an overall positivity of 16.1% compared to 17.6% in week 16 (Table 3).

Since week 40 2016, 953 samples (774 influenza A(H3N2), 44 influenza A(unknown subtype), 3 influenza A(H1N1)pdm09 and 132 influenza B) have tested positive for influenza through this scheme.

Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
13	0/12 (-)	7/39 (17.9%)	0/1 (-)	0/4 (-)
14	0/5 (-)	8/26 (30.8%)	7/10 (70%)	0/2 (-)
15	0/2 (-)	3/25 (12%)	3/6 (-)	0/0 (-)
16	0/0 (-)	4/31 (12.9%)	2/3 (-)	0/0 (-)
17	0/0 (-)	4/22 (18.2%)	1/6 (-)	0/3 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 17 2017, out of the 686 respiratory specimens reported through the Respiratory DataMart System, 27 samples (3.9%) were positive for influenza (four influenza A(H3), five influenza A(not subtyped) and 18 influenza B) (Figure 9), which is below the MEM threshold for this season of 8.6%. The highest positivity by age group was seen in the 65+ year olds (6.5%)(Figure 10). The overall positivity for RSV remained low at 0.6% in week 17. Positivity for rhinovirus, adenovirus and parainfluenza decreased in week 17 at 10.8%, 5.7% and 7.7% respectively. Positivity for human metapneumovirus (hMPV) remained low at 0.7% in week 17 (Figure 11).

Figure 9: DataMart samples positive for influenza, England

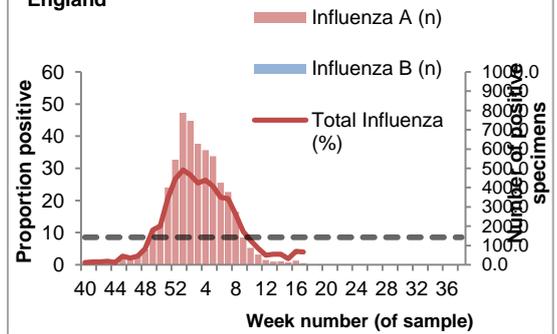


Figure 10: Datamart overall influenza % positive by age group, England

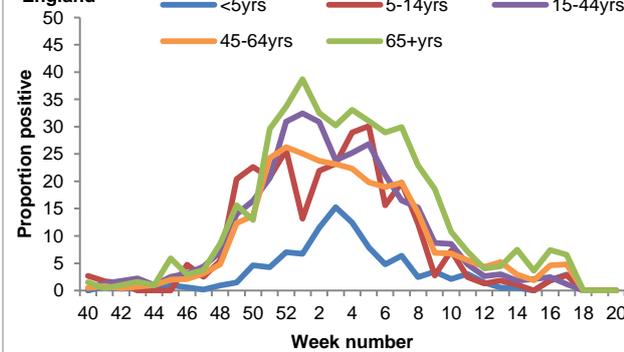
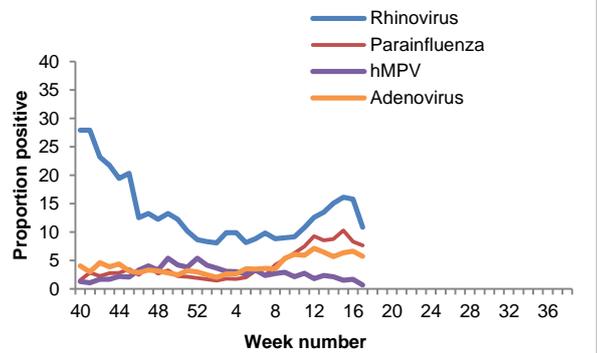


Figure 11: Datamart % positive for other respiratory viruses, England



*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

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. Occasionally, this can lead to a biased view of the properties of circulating viruses, as the viruses which can be recovered and analysed antigenically, may not be fully representative of majority variants, and genetic characterisation data does not always predict the antigenic characterisation

Since the start of the 2016/17 winter influenza season in week 40 2016, the PHE Respiratory Virus Unit has characterised four A(H1N1)pdm09 influenza viruses: one both genetically and antigenically and three 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 three viruses antigenically analysed are similar to the A/California/7/2009 Northern Hemisphere 2016/17 (H1N1)pdm09 vaccine strain. Genetic characterisation of 401 A(H3N2) influenza viruses since week 40 showed that they all belong to genetic subclade 3C.2a, with 197 belonging to a cluster within this genetic subclade designated as 3C.2a1. The Northern Hemisphere 2016/17 influenza A(H3N2) vaccine strain A/HongKong/4801/2014 belongs in genetic subclade 3C.2a. This seasons A(H3N2) viruses are difficult to cultivate, and only 24 influenza A(H3N2) viruses have been isolated and antigenically characterised since week 40 2016, representing a minority of the detections, indicating the bias in antigenic data. The viruses antigenically analysed are similar to the A/HongKong/4801/2014 Northern Hemisphere 2016/17 A(H3N2) vaccine strain. Of the 24 antigenically characterised viruses, eight isolates have also been genetically characterised, with all belonging in genetic group 3C.2a, and six also belonging in the recently emerged 3C.2a1 cluster. Sixteen influenza B viruses have been analysed genetically since week 40/2015; 13 have been characterised as belonging to the B/Yamagata/16/88-lineage and 3 belonging to the B/Victoria/2/1987-lineage. Nineteen influenza B viruses have been isolated and antigenically characterised since week 40 2016. Fourteen viruses were characterised as belonging to the B/Yamagata/16/88-lineage and were antigenically similar to B/Phuket/3073/2013, the influenza B/Yamagata-lineage component of 2016/17 Northern Hemisphere quadrivalent vaccine. Five viruses were characterised as belonging to the B/Victoria/2/87-lineage and were antigenically similar to B/Brisbane/60/2008, the influenza B/Victoria-lineage component of 2016/17 Northern Hemisphere trivalent and quadrivalent vaccines.

- 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, 305 influenza A(H3N2) have been tested for oseltamivir susceptibility; 300 are fully susceptible. 286 of the 305 were also tested for zanamivir susceptibility with 280 being fully susceptible. Four 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 tested for zanamivir susceptibility. All four R292K cases and the E119V case have been identified in patients with underlying medical conditions with some exposure to oseltamivir. 11 influenza A(H1N1)pdm09 and 18 influenza B (Yamagata) viruses have been tested for oseltamivir susceptibility and all were fully susceptible. Two of the 11 influenza A(H1N1)pdm09 virus and all 18 influenza B (Yamagata) virus have been tested for zanamivir susceptibility and all were fully susceptible.

- Antimicrobial susceptibility

-Table 4 shows in the 12 weeks up to 30 April 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 30 April 2017, E&W

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	4,022	90
	Macrolides	4,574	83
	Tetracycline	4,368	86
<i>H. influenzae</i>	Amoxicillin/ampicillin	19,149	68
	Co-amoxiclav	20,228	88
	Macrolides	7,589	10
	Tetracycline	20,083	98
<i>S. aureus</i>	Methicillin	6,395	90
	Macrolides	7,135	67
MRSA	Clindamycin	403	37
	Tetracycline	585	81
MSSA	Clindamycin	3,472	77
	Tetracycline	5,327	93

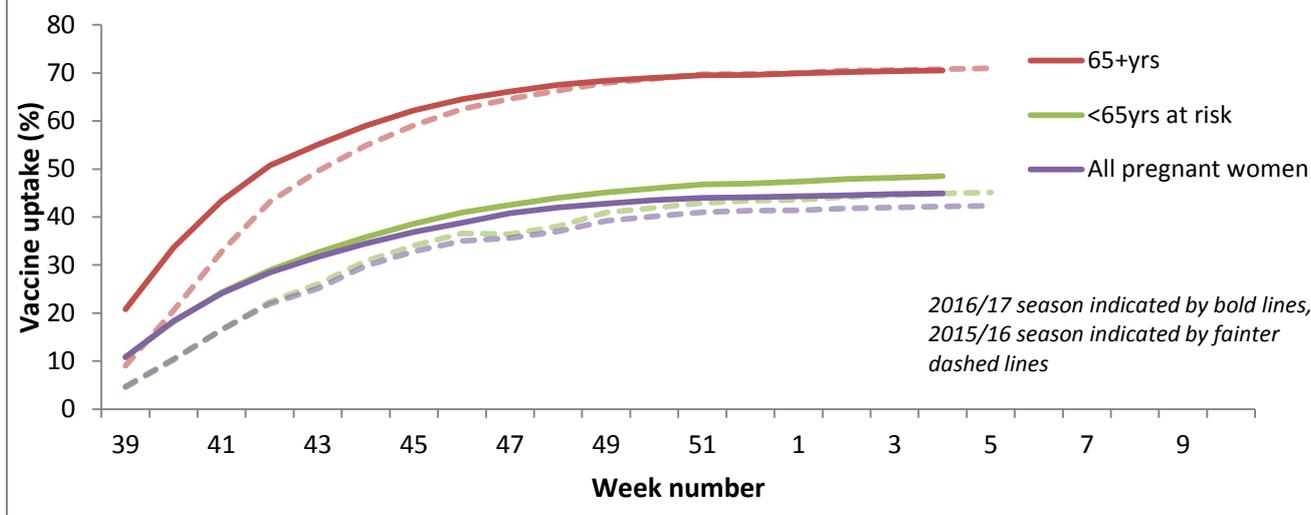
*Macrolides = erythromycin, azithromycin and clarithromycin

Vaccination

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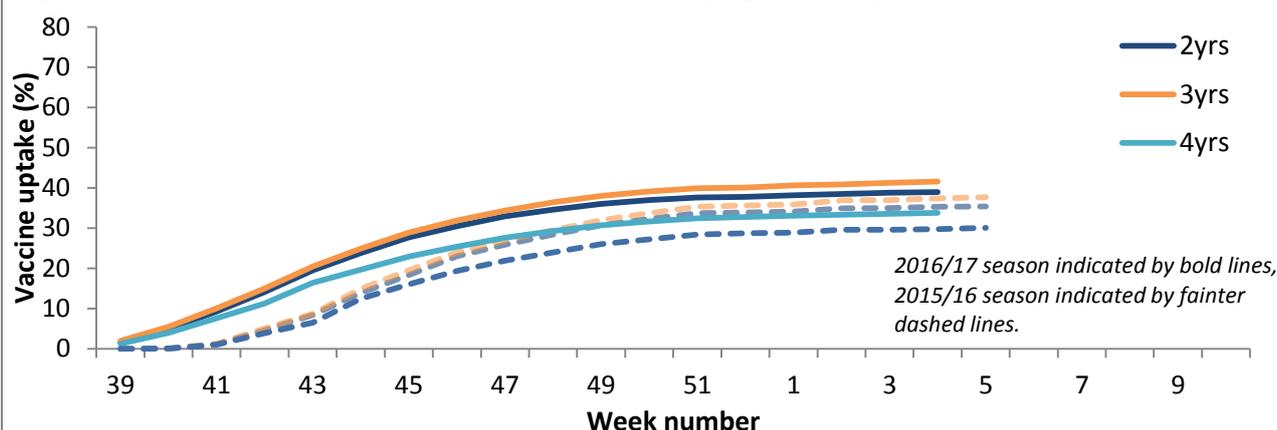
- Up to week 04 2017 in 85.0% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows, with vaccination activity starting earlier than last season (Figure 12):
 - 48.5% in under 65 years in a clinical risk group
 - 44.9% in pregnant women
 - 70.5% in 65+ year olds

Figure 12: 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 04 2017 in 88.1% 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 13):
 - 39.0% in all 2 year olds
 - 41.6% in all 3 year olds
 - 33.8% in all 4 year olds

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



- Provisional data from the fifth monthly collection of influenza vaccine uptake by frontline healthcare workers show 63.4% were vaccinated by 28 February 2017 from 98.9% of Trusts, compared to 50.8% vaccinated in the previous season by 29 February 2016. The report provides uptake at Trust level.
- Provisional data from the fourth monthly collection of influenza vaccine uptake in GP patients up to 31 January 2017 show that in 97.3% 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:
 - 48.7% in under 65 years in a clinical risk group
 - 44.8% in pregnant women
 - 70.4% in 65+ year olds
- Provisional data from the fourth monthly collection of influenza vaccine uptake in GP patients up to 31 January 2017 show that in 96.7% 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:
 - 38.9% in all 2 year olds
 - 41.5% in all 3 year olds
 - 33.9% in all 4 year olds
- Provisional data from the fourth 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 January 2017 in targeted groups was as follows:
 - 57.6% in children of school Year 1 age (5-6 years)
 - 55.3% in children of school Year 2 age (6-7 years)
 - 53.3% 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 decrease. Influenza activity remained low in the temperate zone of the southern hemisphere. Worldwide, influenza A(H3N2) and B viruses were predominant, with an increased proportion of influenza B viruses detected in recent weeks.

- [Europe](#) updated on 28 April 2017 (Joint ECDC-WHO Influenza weekly update)

In week 16/2017, influenza activity across the region decreased further with 38 of 39 countries reporting low influenza activity.

For week 16/2017, 43 (13%) of 326 sentinel specimens tested positive for influenza viruses. Of these, 91% were type B and 9% type A viruses. The proportion of type B viruses commonly increases in the second half of an influenza season.

Of 7 countries across the region that each tested at least 10 sentinel specimens, only 1 reported a proportion of influenza virus detections of 30% or above. Of 4 subtyped influenza A viruses, all were A(H3N2). The lineage of 3 influenza B viruses was determined; all were of the B/Victoria lineage.

For week 16/2017, of 9 countries that conduct surveillance of hospitalized laboratory-confirmed influenza cases 2 (Estonia and Finland) reported a total of 2 cases, both in intensive care units (ICU). Of the patients admitted to ICU, 1 was infected with influenza subtype A(H3N2) virus and 1 with influenza B virus.

For week 16/2017, 847 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, 21% were type A (with 94% of the subtyped viruses being A(H3N2)), and 79% type B. The increase in proportion of type B viruses corresponds to the sentinel detection data, however the number of influenza B viruses detected remained relatively low and similar to that seen in recent weeks.

The majority of participating European countries have had a marked excess in all-cause mortality since the end of 2016, in particular among the elderly aged 65 years and above. Currently, the mortality level seems to have decreased again. This season's excess mortality coincided with circulation of influenza A(H3N2), which usually leads to increased mortality among the elderly.

- [United States of America](#) updated on 28 April 2017 (Centre for Disease Control report)

During week 16, influenza activity decreased in the United States.

The most frequently identified influenza virus type reported by public health laboratories during week 16 was influenza B. The percentage of respiratory specimens testing positive for influenza in clinical laboratories decreased.

A cumulative rate for the season of 62.7 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.

Nationwide during week 16, the proportion of outpatient visits for influenza-like illness (ILI) was 1.8%, which is below the national baseline of 2.2%.

- [Canada](#) updated on 28 April 2017 (Public Health Agency report)

Overall, influenza activity continues to decline slowly in Canada.

In week 16, influenza B activity surpassed influenza A activity, with 50% or more of influenza laboratory detections, hospitalizations and outbreaks associated with influenza B.

In keeping with the predominant circulation of A(H3N2) this season, the majority of laboratory detections, hospitalizations and deaths have been among adults aged 65+ years.

- [Global influenza update](#) updated on 01 May 2017 (WHO website)

Influenza activity in the temperate zone of the northern hemisphere continued to decrease. Influenza activity remained low in the temperate zone of the southern hemisphere. Worldwide, influenza A(H3N2) and B viruses were predominant, with an increased proportion of influenza B viruses detected in recent weeks.

In North America, overall influenza activity continued to decrease. In Canada, influenza A(H3N2) viruses continued to be the most common subtype of influenza detected, followed by influenza B virus; in Mexico, all seasonal influenza types/subtypes were detected; in the United States of America influenza B virus was predominant.

In Europe, influenza activity continued to decrease to low levels, with detections of predominantly influenza B viruses in Northern and Eastern Europe. Influenza-like illness (ILI) and severe acute respiratory infection (SARI) indicators were generally low or below baseline in most countries.

In Northern Africa, influenza activity remained low. Sporadic detections of influenza A(H3N2) viruses were reported in Tunisia.

In Western Asia, influenza activity continued to decrease with influenza B viruses predominant in the region. SARI levels continued to decrease in Georgia, while remained stable in Armenia. In Oman, low influenza activity was reported with influenza A(H1N1)pdm09 virus predominant.

In Central Asia, ILI and SARI activities continued to decrease; influenza virus detections were also low.

In East Asia, influenza activity continued to be reported with all seasonal influenza types/subtypes detected in the region. In both Northern and Southern China, influenza A(H1N1)pdm09 virus detections increased in recent weeks. Influenza B virus detections continued to be reported in Southern China and the Republic of Korea; influenza B Victoria lineage was predominant in Southern China.

In the Caribbean and Central America countries, respiratory virus activity remained low.

In tropical South America, influenza activity increased slightly with influenza A(H3N2) viruses predominating. Other respiratory virus activities remained low in general, except in Colombia where elevated activity of respiratory syncytial virus (RSV) continued to be reported.

In Western Africa, low levels of influenza activity continued to be reported in Côte d'Ivoire, Ghana, Senegal and Sierra Leone, with all seasonal influenza types/subtypes co-circulating in the region. In Eastern Africa, increased detections of influenza A(H3N2) and B viruses were reported in Madagascar and Tanzania in the recent weeks.

In Southern Asia, influenza activity continued to be reported although it appeared to be decreasing. In India and the Maldives, influenza A(H1N1)pdm09 continued to be reported. In Pakistan, sporadic cases of influenza A(H3N2) viruses were reported in the recent weeks. In Bhutan, ILI levels and influenza activity appeared to decrease, with influenza A(H3N2) and B viruses circulating.

In South East Asia, influenza activity remained low, with all seasonal influenza types/subtypes detected in the region.

In the temperate zone of the Southern Hemisphere, influenza activity was at inter-seasonal levels. In Chile, ILI activity increased but has not reached the seasonal threshold in recent weeks, consistent with past seasonal trends.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 109,373 specimens between 03 April 2017 and 16 April 2017. 14,597 were positive for influenza viruses, of which 6,108 (41.8%) were typed as influenza A and 8,489 (58.2%) as influenza B. Of the sub-typed influenza A viruses, 1,358 (42.5%) were influenza A(H1N1)pdm09 and 1,834 (57.5%) were influenza A(H3N2). Of the characterized B viruses, 747 (49.3%) belonged to the B-Yamagata lineage and 767 (50.7%) to the B-Victoria lineage

The vaccine recommendation for the 2017-2018 northern hemisphere influenza season has been made. It is recommended that trivalent vaccines for use in the 2017-2018 northern hemisphere influenza season contain the following:

- an A/Michigan/45/2015 (H1N1)pdm09-like virus;
- an A/Hong Kong/4801/2014 (H3N2)-like virus; and
- a B/Brisbane/60/2008-like virus.

It is recommended that quadrivalent vaccines containing two influenza B viruses contain the above three viruses and a B/Phuket/3073/2013-like virus. The full report can be found [here](#).

- [Avian Influenza](#) latest update on 01 May 2017 (WHO website)

Influenza A(H5) viruses

Between [16 March and 20 April 2017](#), no new laboratory-confirmed human cases of influenza A(H5) virus infection were reported to WHO.

Influenza A(H5) subtype viruses have the potential to cause disease in humans and thus far, no human cases, other than those with influenza A(H5N1) and A(H5N6) viruses, have been reported to WHO. According to reports received by the World Organisation for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in Africa, Europe and Asia. For more information on the background and public health risk of these viruses, please see the WHO assessment of risk associated with influenza A(H5N8) virus [here](#).

Influenza A(H7N9)

On [21 April 2017](#), the National Health and Family Planning Commission of China (NHFPC) notified WHO of 28 additional laboratory-confirmed cases of human infection with avian influenza A(H7N9) virus in mainland China.

Between [16 March and 20 April 2017](#), 86 laboratory-confirmed human cases of influenza A(H7N9) virus infection were reported to WHO from China.

A total of 1,393 laboratory-confirmed human infections with avian influenza A(H7N9) virus, including at least 534 deaths, have been reported through IHR notification since early 2013.

Influenza A(H9N2)

Between [16 March and 20 April 2017](#), one new laboratory-confirmed human case of A(H9N2) virus infection was reported to WHO from China in an eleven-month-old boy from Gansu province. This is the first human case of avian influenza A(H9N2) virus infection reported to WHO since December 2016 and the first human case reported from Gansu province.

- [Middle East respiratory syndrome coronavirus \(MERS-CoV\)](#) latest update on 27 April 2017

Between [18 March and 20 April 2017](#) the national IHR Focal Point of Saudi Arabia reported 13 additional cases of Middle East Respiratory Syndrome (MERS) including two fatal cases. On 18 April 2017 the national IHR Focal Point of Qatar reported one additional case of MERS.

Between [9 and 11 April 2017](#), the National IHR Focal Point of United Arab Emirates (UAE) reported two additional cases of Middle East Respiratory Syndrome Coronavirus (MERS-CoV).

Up to 03 May 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 962 suspect cases in the UK that have been investigated for MERS-CoV and tested negative.

Globally, since September 2012, WHO has been notified of 1,936 laboratory-confirmed cases of infection with MERS-CoV, including at least 690 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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- 2016/17 Northern Hemisphere seasonal influenza vaccine recommendations ([WHO](#))