



PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

25 May 2017 – Week 21 report (up to week 20 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 20 (ending 21 May 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 low.
 - Seven new acute respiratory outbreaks have been reported in the past 7 days. Six outbreaks were from care homes with no test results available. The remaining outbreak was from a hospital which tested positive for influenza B.
- [Overall weekly influenza GP consultation rates across the UK](#)
 - In week 20, the overall weekly influenza-like illness (ILI) GP consultation rate was 3.9 per 100,000 in England compared to 3.0 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 20, there were five admissions to ICU/HDU with confirmed influenza (five influenza B and one influenza A(unknown subtype)) were reported across the UK (129/156 Trusts in England) through the USISS mandatory ICU scheme with a rate of 0.01 per 100,000 compared to 0.01 per 100,000 in the previous week.
 - In week 20, there were three hospitalised confirmed influenza cases (two influenza A(H3N2) and one influenza B) reported through the USISS sentinel hospital network (13 NHS Trusts across England), with a rate of 0.07 per 100,000, compared to 0.12 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 20.
- [All-cause mortality data](#)
 - In week 20 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](#)
 - Two samples tested positive for influenza (two influenza B) through the UK GP sentinel swabbing schemes, with an overall positivity of 14.3% in week 20 compared to 17.2% in week 19.
 - 26 influenza positive detections were recorded through the DataMart scheme (four influenza A(H3), two influenza A(unknown subtype) and 20 influenza B) in week 20. The overall positivity was at 2.8% in week 20 compared to 4.7% in week 19, which is below the threshold for 2016/17 season of 8.6%. The highest age-specific positivities were seen in the 65+ year olds (5.3%).
- [Vaccination](#)
 - For the 2016 to 2017 season (up to 28 February 2017), in 100% of trusts, the influenza vaccine uptake by frontline healthcare workers was 63.2%. The [annual report](#) provides uptake at Trust level and staff groupings.
 - For the 2016 to 2017 season (up to 31 January 2017), in 98.1% of GP practices reporting to Immform, the proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows: 48.6% in under 65 years in a clinical risk group, 44.9% in pregnant women and 70.5% in 65+ year olds.
In 97.4% of GP practices reporting to Immform, the proportion of children in England who had received the 2016/17 influenza vaccine was as follows: 38.9% in all 2 year olds, 41.5% in all 3 year olds and 33.9% in all 4 year olds.
The [annual report](#) provides uptake at national, Area Team (AT), Clinical Commissioning Group (CCG) and by Local Authority (LA) levels.
 - For the 2016 to 2017 season (up to 31 January 2017), in 100% of LAs, influenza vaccine uptake for children of school years 1, 2 and 3 age was as follows: 57.6% in children of school Year 1 age (5-6 years); 55.4% in children of school Year 2 age (6-7 years); 53.3% in children of school Year 3 age (7-8 years). The [annual report](#) provides uptake at LA level.
- [International situation](#)
 - Globally, influenza activity in the temperate zone of the northern hemisphere continued to decrease. In the temperate zone of the southern hemisphere, influenza activity reached seasonal thresholds in some countries, but remained low in general. Worldwide, influenza B viruses were predominant.
 - 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 low. Seven new acute respiratory outbreaks were reported in the past 7 days.

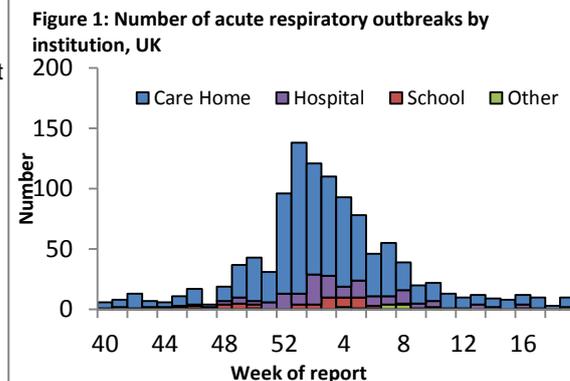
- PHE Real-time Syndromic Surveillance

- Through the GP In Hours Syndromic Surveillance system, GP consultations for influenza like illness (ILI) were low.
- For further information, please see the syndromic surveillance [webpage](#).

- Acute respiratory disease outbreaks

- Seven new acute respiratory outbreaks have been reported in the past 7 days. Six outbreaks were from care homes with no test results available. The remaining outbreak was from a hospital which tested positive for influenza B.

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

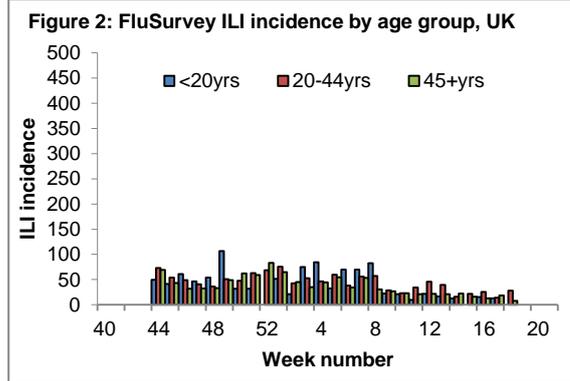


- FluSurvey

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

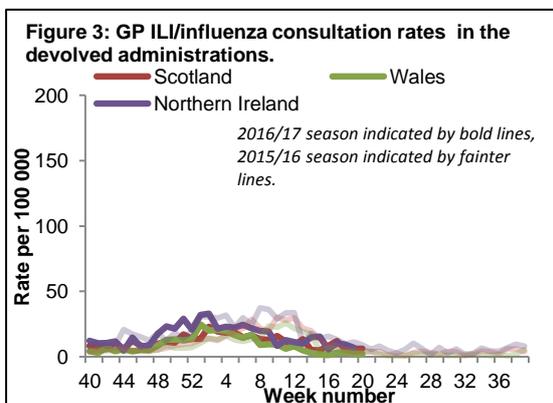
- The overall ILI rate (all age groups) for week 18 was 12.3 per 1,000 (22/1,788 people reported at least 1 ILI), with the 20-44 years age group reporting a higher rate of 27.8 per 1,000.

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



In week 20, 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 20.

- Influenza/Influenza-Like-Illness (ILI)



Northern Ireland

- The Northern Ireland ILI rate was not available for week 20.

Wales

-The Welsh ILI rate has remained similar at 2.0 per 100,000 in week 20 compared to 2.3 per 100,000 in week 19 (Figure 3). This is below the baseline threshold (10.3 per 100,000).

- The highest rates were seen in the 15-44 year olds (3.5 per 100,000) and 5-14 year olds (3.2 per 100,000).

Scotland

-The Scottish ILI rate has remained similar to the previous week at 6.1 per 100,000 in week 20 compared to 6.2 per 100,000 in week 19 (Figure 3). This remains below the baseline threshold (36.1 per 100,000).

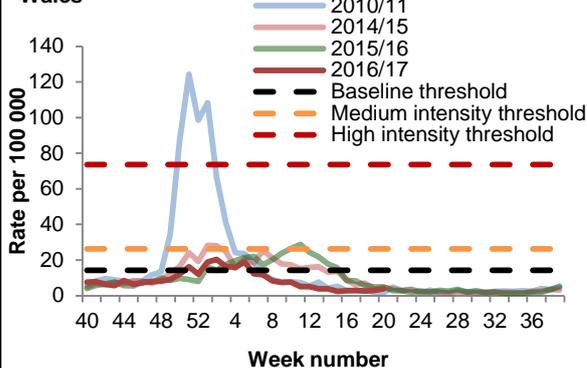
-The highest rates were seen in 45-64 year olds (8.9 per 100,000) and 15-44 year olds (6.9 per 100,000).

RCGP (England and Wales)

- The weekly ILI consultation rate through the RCGP surveillance is at 3.9 per 100,000 in week 20 compared to 3.0 per 100,000 in week 19. 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 (5.3 per 100,000) and 5-14 year olds (3.7 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 for week 20 was 2.8 per 100,000.

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

Influenza confirmed hospitalisations (provisional)

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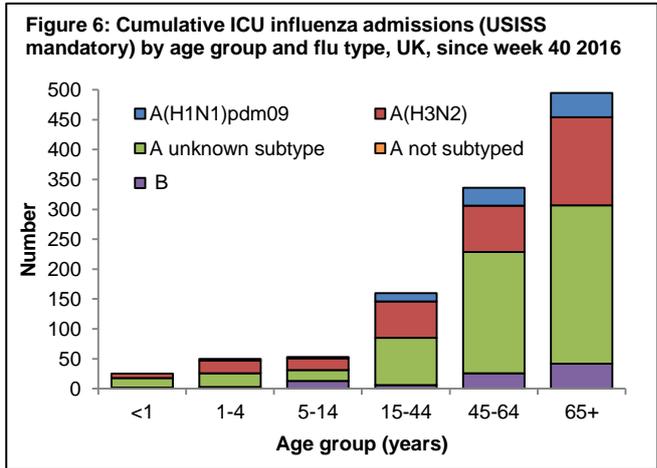
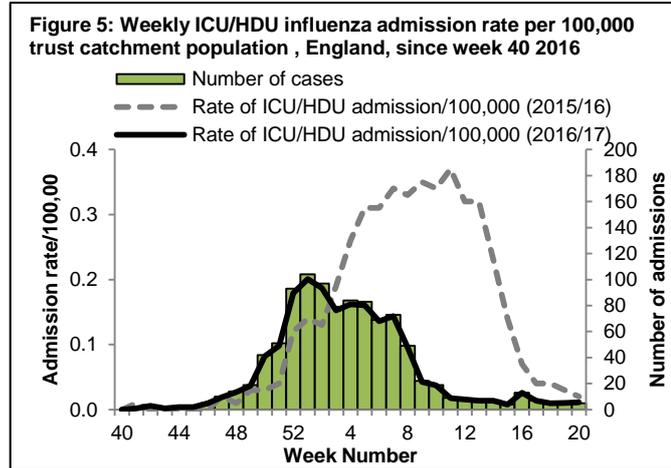
In week 20, there were five admissions to ICU/HDU with confirmed influenza (five influenza B and one influenza A(unknown subtype)) were reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (129 Trusts). Three hospitalised confirmed influenza cases (two influenza A(H3N2) and one influenza B) 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 20)

- In week 20, there were five admissions to ICU/HDU with confirmed influenza (five influenza B and one influenza A(unknown subtype) reported across the UK (129/156 Trusts in England) through the USISS mandatory ICU scheme, with a rate of 0.01 per 100,000 compared to a rate of 0.01 per 100,000 in week 19 (Figures 6 and 7). Two deaths were reported to have occurred in week 20.

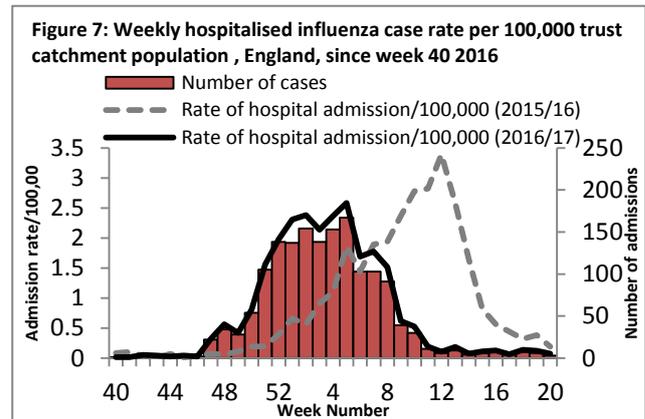
A total of 1,119 admissions (604 influenza A(unknown subtype), 333 influenza A(H3N2), 90 influenza A(H1N1)pdm09 and 92 influenza B) and 142 confirmed deaths have been reported since week 40 2016.



- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 20)

- In week 20, there were three hospitalised confirmed influenza cases (two influenza A(H3N2) and one influenza B) reported through the USISS sentinel hospital network from 13 NHS Trusts across England (Figure 8), a rate of 0.07 per 100,000 compared to 0.12 per 100,000 in the previous week.

A total of 1,575 hospitalised confirmed influenza admissions (1,047 influenza A(H3N2), 418 influenza A(not subtyped), 83 influenza B and 27 influenza A(H1N1pdm09)) have been reported since week 40 2016.



- USISS Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 20)

- In week 20, 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 20 2017 in England, no statistically significant excess all-cause mortality by week of death was observed through the EuroMOMO algorithm in England. In the devolved administrations, no significant excess all-cause mortality was observed in week 20 2017.

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 19 2017, an estimated 10,693 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is an increase compared to the 9,064 estimated death registrations in week 18 2017.

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

- In week 20 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 20 (Table 2).

Table 1: Excess mortality by age group, England*

Age group (years)	Excess detected in week 20 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

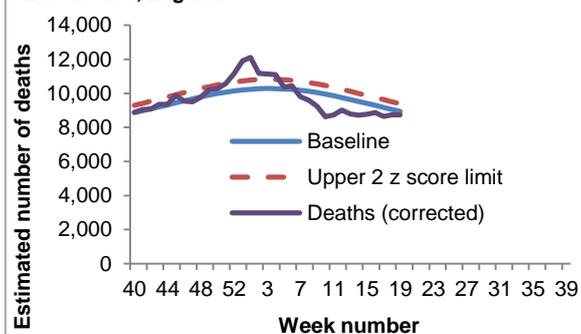
Table 2: Excess mortality by UK country, for all ages*

Country	Excess detected in week 20 2017?	Weeks with excess in 2016/17
England	x	52-05
Wales	x	52,03
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 20 2017, two samples tested positive for influenza (two influenza B) through the UK GP sentinel schemes with an overall positivity of 14.3%. 26 positive detections were recorded through the DataMart scheme (four influenza A(H3), two influenza A(unknown subtype) and 20 influenza B) with a positivity of 2.8% in week 20.

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

-In week 20, two samples tested positive for influenza (two influenza B) through the UK GP sentinel swabbing schemes, with an overall positivity of 14.3% compared to 17.2% in week 19 (Table 3).

Since week 40 2016, 969 samples (774 influenza A(H3N2), 44 influenza A(unknown subtype), 3 influenza A(H1N1)pdm09 and 148 influenza B) have tested positive for influenza through this scheme.

Table 3: Sentinel influenza surveillance in the UK

Week	England	Scotland	Northern Ireland	Wales
16	0/2 (-)	4/31 (12.9%)	2/3 (-)	0/0 (-)
17	0/1 (-)	4/26 (15.4%)	1/6 (-)	0/3 (-)
18	0/1 (-)	6/21 (28.6%)	2/7 (-)	1/2 (-)
19	0/1 (-)	4/26 (15.4%)	1/2 (-)	0/0 (-)
20	0/0 (-)	1/10 (-)	1/3 (-)	0/1 (-)

NB. Proportion positive omitted when fewer than 10 specimens tested

- Respiratory DataMart System (England)

In week 20 2017, out of the 937 respiratory specimens reported through the Respiratory DataMart System, 26 samples (2.8%) were positive for influenza (four influenza A(H3), two influenza A(unknown subtype) and 20 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 (5.3%)(Figure 10). The overall positivity for RSV remained low at 0.9% in week 20. Positivity for rhinovirus and adenovirus were at high levels at 19.1% and 6.0% respectively in week 20. Positivity for human metapneumovirus (hMPV) and parainfluenza decreased at 0.8% and 5.9% respectively in week 20.

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

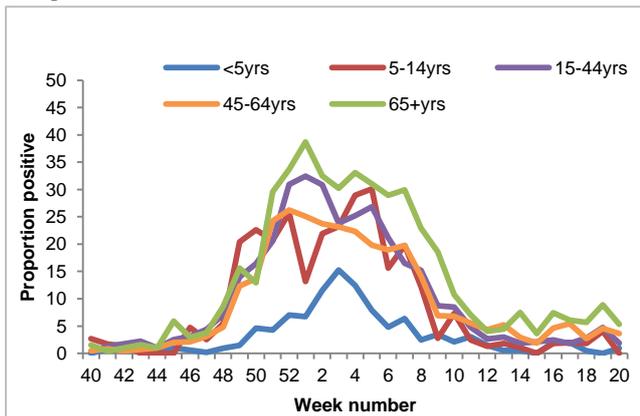


Figure 9: DataMart samples positive for influenza, England

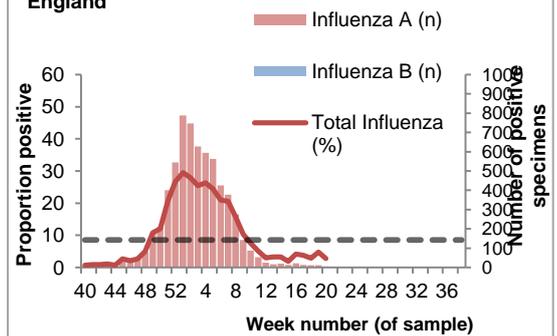
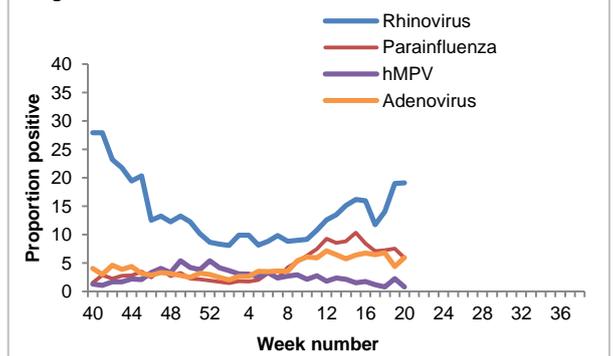


Figure 11: Datamart % positive for other respiratory viruses, England



*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 eight A(H1N1)pdm09 influenza viruses: three genetically, four both genetically and antigenically and one antigenically. The A(H1N1)pdm09 viruses genetically characterised belong in the genetic subgroup 6B.1, which was the predominant genetic subgroup in the 2015/16 season. The five viruses antigenically analysed are similar to the A/California/7/2009 Northern Hemisphere 2016/17 (H1N1)pdm09 vaccine strain. Genetic characterisation of 444 A(H3N2) influenza viruses since week 40 showed that they all belong to genetic subclade 3C.2a, with 231 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 25 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 25 antigenically characterised viruses, 21 isolates have also been genetically characterised, with all belonging in genetic group 3C.2a, and nine also belonging in the recently emerged 3C.2a1 cluster.

Forty influenza B viruses have been analysed genetically since week 40/2015; 29 have been characterised as belonging to the B/Yamagata/16/88-lineage and 11 belonging to the B/Victoria/2/1987-lineage. Twenty-six influenza B viruses have been isolated and antigenically characterised since week 40 2016. Twenty 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. Six 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, 477 influenza A(H3N2) have been tested for oseltamivir susceptibility; 472 are fully susceptible. 466 of the 477 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. 12 influenza A(H1N1)pdm09 and 20 influenza B (Yamagata) viruses have been tested for oseltamivir susceptibility and all were fully susceptible. Three of the 12 influenza A(H1N1)pdm09 virus and all 20 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 14 May 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 14 May 2017, E&W

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
<i>S. pneumoniae</i>	Penicillin	3,862	90
	Macrolides	4,370	82
	Tetracycline	4,176	85
<i>H. influenzae</i>	Amoxicillin/ampicillin	18,262	68
	Co-amoxiclav	19,241	87
	Macrolides	7,331	11
	Tetracycline	19,109	99
<i>S. aureus</i>	Methicillin	6,273	90
	Macrolides	6,950	67
MRSA	Clindamycin	396	37
	Tetracycline	585	81
MSSA	Clindamycin	3,361	77
	Tetracycline	5,185	93

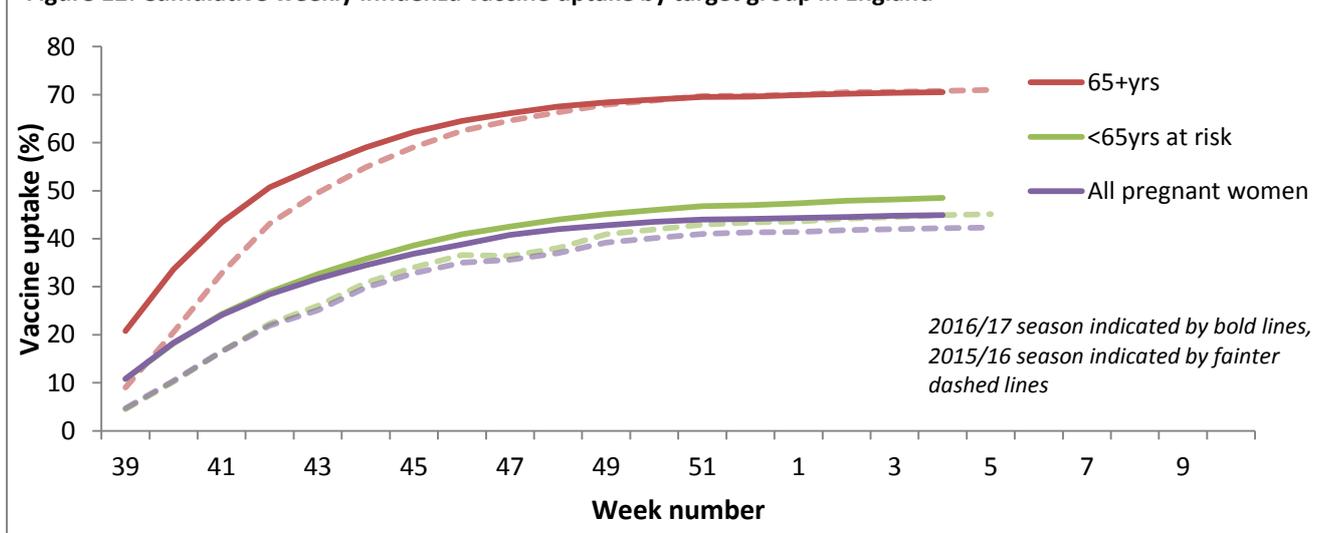
*Macrolides = erythromycin, azithromycin and clarithromycin

Vaccination

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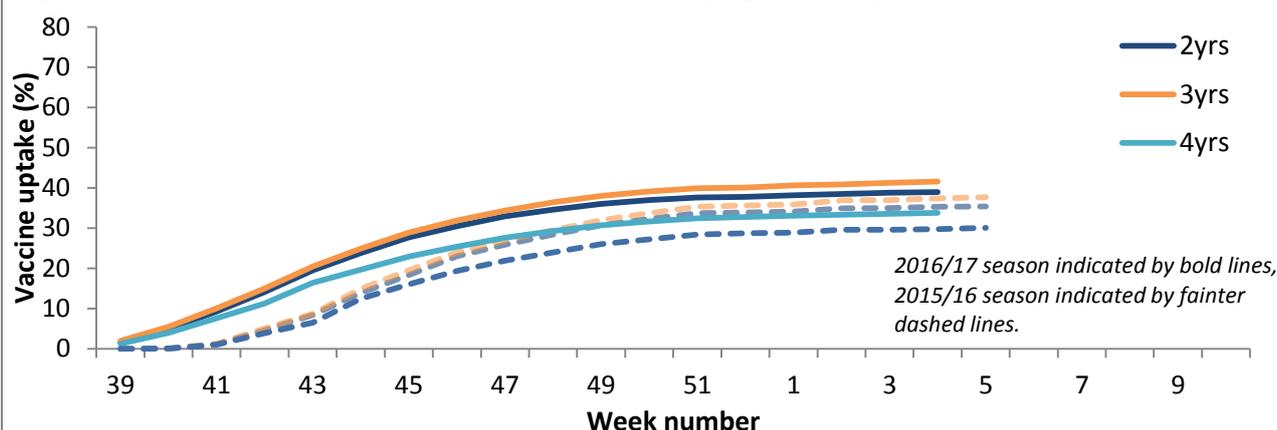
- Up to week 04 2017 in 85.0% of GP practices reporting weekly to Immform, the provisional proportion of people in England who had received the 2016/17 influenza vaccine in targeted groups was as follows, with vaccination activity starting earlier than last season (Figure 12):
 - 48.5% in under 65 years 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. In the temperate zone of the southern hemisphere, influenza activity reached seasonal thresholds in some countries, but remained low in general. Worldwide, influenza B viruses were predominant.

- [Europe](#) updated on 19 May 2017 (Joint ECDC-WHO Influenza weekly update)

In week 19/2017, influenza activity has returned to out-of-season levels in most countries, with all 35 reporting countries reporting low influenza activity.

For week 19/2017, 15 (6%) of 264 sentinel specimens tested positive for influenza viruses. All were type B viruses. Of 7 countries across the region that each tested at least 10 sentinel specimens, 2 reported proportions of influenza virus detections of 10% or above (Armenia and United Kingdom (Scotland)).

The 11 countries that reported data on sentinel surveillance of severe acute respiratory infections (SARI) reported a total of 423 SARI cases for week 19/2017. Among these cases 88 respiratory specimens were collected, 6 (7%) of which, from Armenia (n=2), Kosovo (n=1) and the Russian Federation (n=3), tested positive for influenza viruses.

For week 19/2017, of 9 countries that conduct surveillance of hospitalized laboratory-confirmed influenza cases, 2 countries each reported one ICU case.

For week 19/2017, 619 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, 12% were type A (with all subtyped viruses being A(H3N2)), and 88% type B. The increase in proportion of type B viruses corresponds to the sentinel detection data, but the number of influenza B viruses detected remained relatively low and similar to that seen in recent weeks.

The majority of participating European countries experienced a [marked excess](#) in all-cause mortality between the beginning of January 2017 and the end of February 2017, in particular among the elderly (those aged 65 years and above). Mortality levels have since decreased to expected levels. This season's excess mortality coincided with circulation of influenza A(H3N2) viruses, which usually leads to increased mortality among the elderly.

- [United States of America](#) updated on 19 May 2017 (Centre for Disease Control report)

During week 19, influenza activity decreased in the United States.

The most frequently identified influenza virus type reported by public health laboratories during week 19 was influenza B. The percentage of respiratory specimens testing positive for influenza in clinical laboratories decreased.

A cumulative rate for the season of 64.7 laboratory-confirmed influenza-associated hospitalizations per 100,000 population was reported.

Nationwide during week 19, the proportion of outpatient visits for influenza-like illness (ILI) was 1.3%, which is below the national baseline of 2.2%.

- [Canada](#) updated on 19 May 2017 (Public Health Agency report)

Overall, influenza activity continues to decline slowly in Canada.

In week 19, influenza B accounted for the majority of influenza activity in Canada, with 70% or more of influenza laboratory detections, and outbreaks due to 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 15 May 2017 (WHO website)

Influenza activity in the temperate zone of the northern hemisphere continued to decrease. In the temperate zone of the southern hemisphere, influenza activity reached seasonal thresholds in some countries, but remained low in general. Worldwide, influenza B viruses were predominant.

In the temperate zone of the Southern Hemisphere, influenza activity slightly increased in recent weeks. In Chile, ILI activity continued to increase and passed the seasonal threshold.

In tropical South America, influenza activity remained low in most of the region, except in Bolivia (Plurinational State of) where influenza activity increased in recent weeks 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 the Caribbean and Central America countries, respiratory virus activity remained low.

In East Asia, influenza activity continued to be reported with all seasonal influenza types/subtypes detected.

In Southern Asia, influenza activity decreased in recent weeks.

In Western Asia, low influenza activity was reported with influenza B viruses predominant.

In South East Asia, influenza activity remained low.

In East and West Africa, low influenza activity was reported in recent weeks, with all seasonal influenza types/subtypes detected.

In Northern Africa, influenza activity remained low.

In Europe, influenza activity continued to decrease to low levels overall. In Northern and Eastern Europe, influenza activity continued to decrease with influenza B viruses predominant. In South West Europe little to no influenza activity was reported.

In Central Asia, respiratory illness indicators were at low levels in general and very few influenza virus detections were reported during this period.

In North America, overall influenza activity continued to decrease. Increased proportions of influenza B viruses were reported in Canada and in the United States of America in recent weeks. In Mexico, low levels of all seasonal influenza types/subtypes continued to be detected.

Based on FluNet reporting, the WHO GISRS laboratories tested more than 79,447 specimens between 17 April 2017 and 30 April 2017. 7,736 were positive for influenza viruses, of which 2,683 (34.7%) were typed as influenza A and 5,053 (65.3%) as influenza B. Of the sub-typed influenza A viruses, 642 (45.1%) were influenza A(H1N1)pdm09 and 782 (54.9%) were influenza A(H3N2). Of the characterized B viruses, 396 (51.8%) belonged to the B-Yamagata lineage and 369 (48.2%) 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 [21 April to 16 May 2017](#), one new laboratory-confirmed human cases of influenza A(H5N1) virus infection was reported to WHO.

Since 2003, a total of 859 laboratory-confirmed cases of human infection with avian influenza A(H5N1) virus, including 453 deaths, have been reported to WHO from 16 countries

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)

Between [21 April to 16 May 2017](#), 93 laboratory-confirmed human cases of influenza A(H7N9) virus infection were reported to WHO from China. Among these cases, two clusters of cases were reported. Cases were reported from Shaanxi province for the first time.

A total of 1,486 laboratory-confirmed human infections with avian influenza A(H7N9) virus, including at least 571 deaths, have been reported to WHO as of 16 May 2017.

Influenza A(H9N2)

Between [21 April to 16 May 2017](#), one new laboratory-confirmed human case of A(H9N2) virus infection was reported to WHO from China.

Influenza A(H3N2) variant viruses

On [02 May 2017](#), the United States (US) IHR National Focal Point (NFP) reported the first case of human infection with an influenza A(H3N2)v virus in 2017 in a child from the state of Texas.

Since reporting of novel influenza A viruses became nationally notifiable in 2005, 402 human infections with influenza A(H3N2)v viruses, including this latest case, have been reported to the US Centers for Disease Control and Prevention (CDC).

- [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 24 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 971 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](#))