PHE Weekly National Influenza Report

Summary of UK surveillance of influenza and other seasonal respiratory illnesses

18 April 2019 – Week 16 report (up to week 15 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 – Week 15 (ending 14 April 2019)

- **During week 15, influenza continued to circulate in the community with activity indicators decreasing and Below Baseline.**
- **The impact of flu on healthcare services is at Below baseline for hospitalisations and for ICU/HDU influenza admissions.**
- **Influenza A(H1N1)pdm09 and influenza A(H3N2) are co-circulating. The Department of Health & Social Care has issued an alert on the prescription of antiviral medicines by GPs**

Community

- Thirty-two new acute respiratory outbreaks have been reported in the past 7 days. Twenty-nine outbreaks were reported from care homes where 2 tested positive for influenza A(not subtyped) and 1 for parainfluenza. The three remaining outbreaks were reported from hospitals where 1 tested positive for influenza A(not subtyped) and 1 for parainfluenza.

Primary Care

- The rate of influenza-like illness (ILI) was **Below Baseline** threshold levels. The overall weekly ILI GP consultation rate was 4.2 per 100,000 registered population in participating GP practices for England, this is a slight decrease from 4.7 per 100,000 in week 14 2019.
- In the devolved administrations, ILI rates were **Below Baseline** threshold levels for Northern Ireland, Scotland and Wales.

GP ILI Consultations England

Secondary Care

- Hospitalisation rate observed was **Below baseline** levels, with a rate of 0.71 per 100,000 trust catchment population for England (19 NHS Trusts), this is a decrease from 0.86 per 100,000 in week 14.
- ICU/HDU admission rate observed was **Below baseline** levels, with a rate of 0.07 per 100,000 trust catchment population for England (135/143 NHS Trusts), this is a similar rate to the previous week which was at 0.06 per 100,000.
- There were no new laboratory confirmed influenza admissions reported from the 6 Severe Respiratory Failure centres in the UK.

Hospitalisation

ICU/HDU

All-cause mortality

- In week 15 2019, no statistically significant excess all-cause mortality by week of death was seen overall and by age group in England. In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in Wales and Northern Ireland in week 15 and in Scotland in week 13 2019.

Microbiological surveillance

- Primary care: no samples tested positive for influenza through the UK GP sentinel swabbing schemes in week 15 2019.
- Secondary care: Influenza percent positivity was 8.6%, **Below Baseline** threshold level, this is similar to 7.5% in week 14. There were 136 detections recorded through the DataMart scheme (9 influenza A(H1N1)pdm09, 83 influenza A(H3), 43 influenza A(not subtyped) and 1 influenza B).

Secondary Care

Vaccination

- Provisional data from the fifth monthly collection of influenza vaccine uptake in GP patients shows that in 97.6% of GP practices the proportions of people in England who had received the 2018/19 influenza vaccine in targeted groups by 28 February 2019 were: 48.0% in under 65 years in a clinical risk group, 45.2% in pregnant women and 72.0% in 65+ year olds. In 96.2% of GP practices reporting for the childhood collection the provisional proportions vaccinated by 28 February 2019 were: 43.8% in 2 year olds and 45.9% in 3 year olds.
- Provisional data from the fifth monthly collection of influenza vaccine uptake by frontline healthcare workers show 70.3% were vaccinated by 28 February 2019, compared to 68.7% vaccinated in the previous season by 28 February 2018.
- Provisional data from the fourth monthly collection of influenza vaccine uptake for children of school years reception to year 5 shows 63.9% in school year reception age, 63.4% in school year 1 age, 61.4% in school year 2 age, 60.2% in school year 3 age, 58.0% in school year 4 age and 56.2% in school year 5 age were vaccinated by 31 January 2019.
- WHO have published their recommendations for the composition of the 2019/20 Northern hemisphere influenza vaccine

International situation

- In the temperate zone of the Northern hemisphere, influenza activity continued to be reported with influenza A viruses predominating overall. In the temperate zones of the Southern hemisphere, influenza activity remained at inter-seasonal levels, with the exception of some parts of Australia which remained above inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

Key

Arrows (vs previous week):

Increase

Decrease

Stable/No trend

Colour (intensity according to MEM threshold):

Below Baseline

Above Baseline/Low

Medium

High

Very High

Community surveillance

| Back to top |

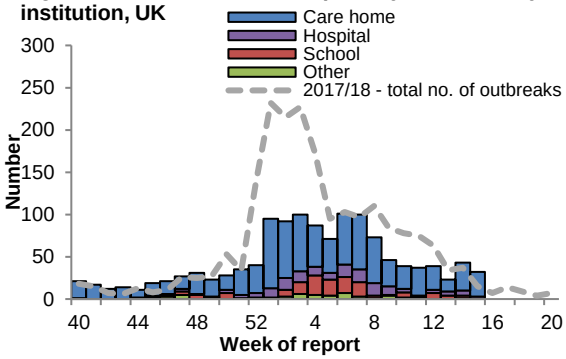
Thirty-two new acute respiratory outbreaks were reported in the past 7 days.

- Acute respiratory disease outbreaks

-Thirty-two new acute respiratory outbreaks have been reported in the past 7 days. Twenty-nine outbreaks were reported from care homes where 2 tested positive for influenza A(not subtyped) and 1 for parainfluenza. The remaining 3 outbreaks were reported from hospitals where 1 tested positive for influenza A(not subtyped) and 1 for parainfluenza.

-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



- Medical Officers of Schools Association (MOSA) & PHE surveillance scheme

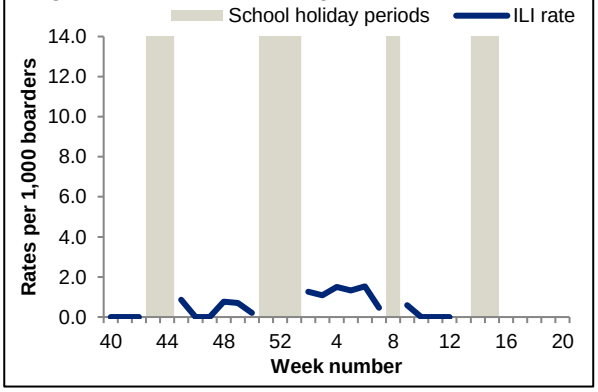
- Boarding schools in England within the MOSA network are recruited each season to report various respiratory related illnesses including influenza like illnesses (ILI). For the 2018/19 season, 21 MOSA schools have agreed to participate in the scheme, including a total of 6,661 boarders.

- The overall rate (all boarders) for week 12 was 0.0 per 1,000 boarders compared to 0.0 per 1,000 boarders in week 11.

-Since week 40, there have been 16 outbreaks reported from 10 MOSA schools, with a total of 59 ILI cases identified. Of the 16 outbreaks, 2 outbreaks have tested positive for influenza A (H1N1)pdm09 and 1 outbreak has tested positive for influenza B.

- If you are a MOSA school and would like to participate in this scheme, please email mosa@phe.gov.uk for more information.

Figure 2: MOSA ILI rates, England



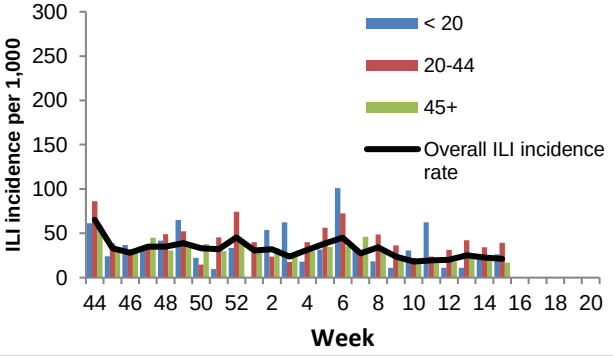
- FluSurvey

- Internet-based surveillance of influenza-like illness in the general population is undertaken through FluSurvey. A project run by PHE to monitor ILI activity in the community.

- The overall ILI rate (all age groups) for week 15 2019 was 21.2 per 1,000 (48/2,266 people reported at least 1 ILI) (Figure 3) compared to 22.8 per 1,000 in the previous week, with the highest rate seen in the 20-44 year olds (39.3 per 1,000).

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

Figure 3: Overall ILI incidence and by age group, UK



Weekly consultation rates in national sentinel schemes

| Back to top |

In week 15, the overall weekly influenza-like illness (ILI) GP consultation rate remained below baseline threshold levels in England. In the devolved administrations, ILI rates decreased or remained similar compared to the previous week and are below their respective baselines.

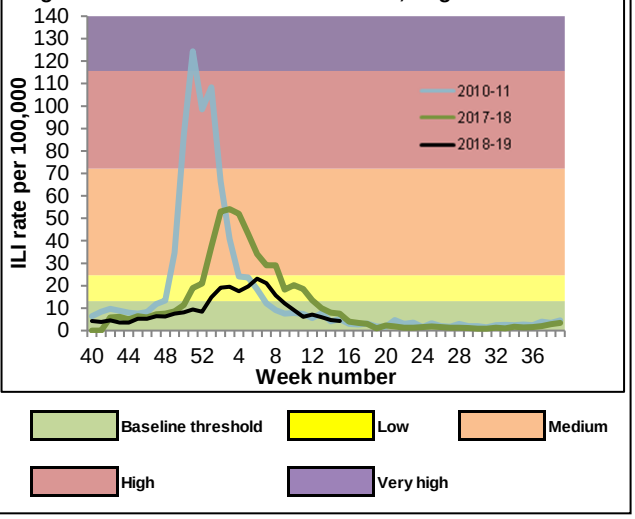
- GP ILI consultations in the UK

RCGP (England)

- The weekly ILI consultation rate through the RCGP surveillance was at 4.2 per 100,000 registered population in participating GP practices in week 15 2019, this is a slight decrease from 4.7 per 100,000 in week 14. This is below the baseline threshold (13.1 per 100,000) (Figure 4*). By age group, the highest rates were seen in the 65-74 year olds (6.8 per 100,000) and in 45-64 year olds (5.5 per 100,000).

**The Moving Epidemic Method (MEM) 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 (based on 10 seasons excluding 2009/10) in a standardised approach across Europe. For MEM intensity threshold values, please visit: https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#clinical-surveillance-through-primary-care*

Figure 4: RCGP ILI consultation rates, England



UK

- In week 15, overall weekly ILI consultation rates across countries of the UK have decreased or remained similar compared to the previous week, with all countries below their respective baseline threshold levels (Table 1).

- By age group, the highest rates were seen in the 45-64 year olds in Scotland (5.4 per 100,000) and in the 15-44 year olds in Northern Ireland and Wales (5.4 per 100,000 and 7.6 per 100,000 respectively).

Table 1: GP ILI consultations in the UK for all ages with MEM thresholds applied*

GP ILI consultation rates (all ages)	Week number																										
	40	41	42	43	44	45	46	47	48	49	50	51	52	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
England (RCGP)	4.2	3.9	4.5	3.6	3.6	5.3	5.2	6.4	6.2	7.6	8.1	9.4	8.4	14.8	19.2	19.6	17.5	19.7	23.1	21.1	15.7	12.1	9.1	6.2	7.2	6.0	4.7	4.2
Wales	7.0	3.6	4.2	6.6	6.3	6.4	4.5	4.7	6.5	3.2	4.5	9.0	9.5	14.6	20.3	22.8	15.6	20.3	21.3	17.1	17.3	8.2	8.7	7.4	4.5	6.7	6.2	5.4
Scotland	7.1	5.8	4.0	3.8	2.8	7.6	4.0	4.7	5.6	4.0	6.5	10.1	6.9	17.7	26.7	18.0	28.4	32.7	32.3	27.2	20.8	10.2	10.2	6.6	7.9	4.6	10.9	3.9
Northern Ireland	3.8	3.5	3.8	3.6	3.8	5.0	6.3	4.5	5.6	6.0	8.4	8.9	9.0	13.5	18.9	14.4	12.4	14.5	16.2	14.5	11.1	9.0	5.9	5.6	4.1	5.7	4.3	4.4

**The Moving Epidemic Method (MEM) 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 (based on 10 seasons excluding 2009/10), in a standardised approach across Europe. For MEM threshold values for each country, please visit: https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#clinical-surveillance-through-primary-care*

GP In Hours Syndromic Surveillance System (England)

-The weekly ILI consultation rate through the GP In Hours Syndromic Surveillance system is at 3.6 per 100,000 in week 15 2019 (Figure 5).

- During week 15, there were further decreases in GP consultations for influenza-like illness observed in GPIH.

- Figure 5 represents a map of GP ILI consultation rates in week 15 across England by PHE centres, with influenza-like illness surveillance MEM thresholds applied.

ILI consultation rates presented for each utLA on the map should be interpreted in context of regional and national ILI activity; as MEM thresholds are calculated (based on previous influenza seasons from 2012/13 onwards) separately for each of the nine PHE centres and utLA rates are then compared to Centre-level thresholds only, therefore utLAs with higher background rates than the Centre may appear to have higher ILI activity.

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

Figure 5: Map of GP ILI consultation rates in week 15

Influenza confirmed hospitalisations (provisional)

| Back to top |

In week 15 2019, there were 55 hospitalised influenza cases (2 influenza A(H1N1)pdm09, 18 influenza A(H3N2) and 35 influenza A(unknown)) reported through the USISS sentinel hospital network across England (19 NHS Trusts). There were 35 new admissions to ICU/HDU with confirmed influenza (1 influenza A(H1N1)pdm09, 7 influenza A(H3N2) and 27 influenza A(unknown subtype)) reported through the USISS mandatory ICU/HDU surveillance scheme across the UK (136/143 NHS Trusts in England).

- USISS sentinel weekly hospitalised confirmed influenza cases, England (week 15)

- In 15 2019, there were 55 hospitalised laboratory confirmed influenza cases (2 influenza A(H1N1)pdm09, 18 influenza A(H3N2) and 35 influenza A(unknown)) reported from 19 NHS Trusts across England through the USISS sentinel hospital network, with a rate of 0.71 per 100,000 trust catchment population compared to 0.86 per 100,000 in the previous week (Figures 6 and 7). This is below the baseline threshold of 0.89 per 100,000.

- A total of 5,501 hospitalised confirmed influenza admissions (1,856 influenza A(H1N1)pdm09, 775 influenza A(H3N2), 2,834 influenza A(unknown) and 36 influenza B) have been reported in the England since week 40 2018 via the sentinel scheme.

Figure 6: Weekly hospitalised influenza case rate per 100,000 trust catchment population, England, since week 40 2018

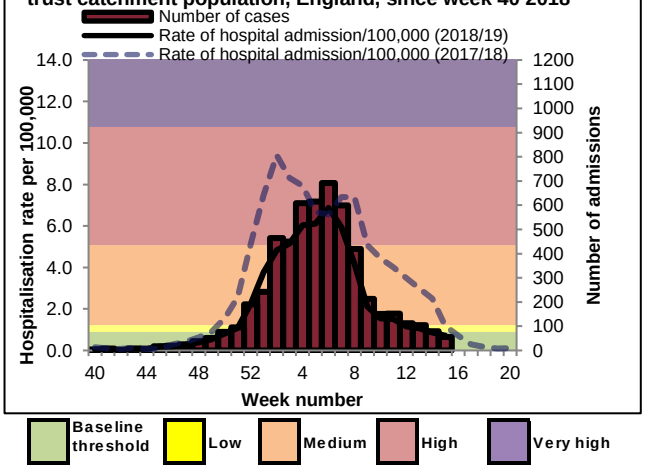
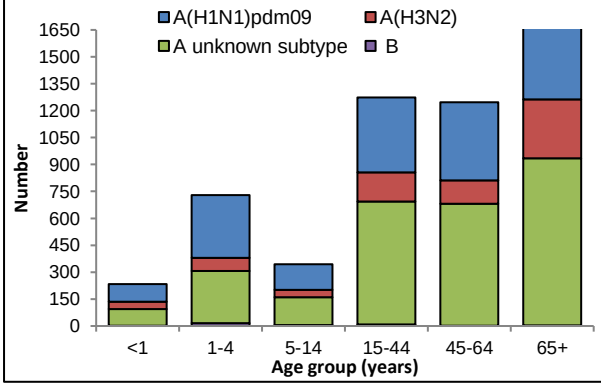


Figure 7: Cumulative hospitalised influenza admissions (USISS sentinel) by age group and flu type, England, since week 40 2018



**The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#disease-severity-and-mortality-data*

- Number of new admissions and fatal confirmed influenza cases in ICU/HDU (USISS mandatory ICU scheme), UK (week 15)

- In week 15 2019, there were 35 new admissions to ICU/HDU with confirmed influenza (1 influenza A(H1N1)pdm09, 7 influenza A (H3N2) and 27 influenza A(unknown subtype)) reported through the USISS mandatory ICU scheme in the UK (136/143). The rate for England (n=35) was 0.07 per 100,000 trust catchment population (Figures 8 and 9) compared to 0.06 per 100,000 in week 14 2019. One fatal influenza cases in ICU were reported in week 15 2019 in the UK.

- A total of 3,150 new admissions (990 influenza A(H1N1)pdm09, 212 influenza A(H3N2), 1,919 influenza A(unknown subtype) and 29 influenza B) and 309 confirmed deaths have been reported in the UK since week 40 2018.

Figure 8: Weekly ICU/HDUinfluenza admission rate per 100,000 trust catchment population, England, since week 40 2018

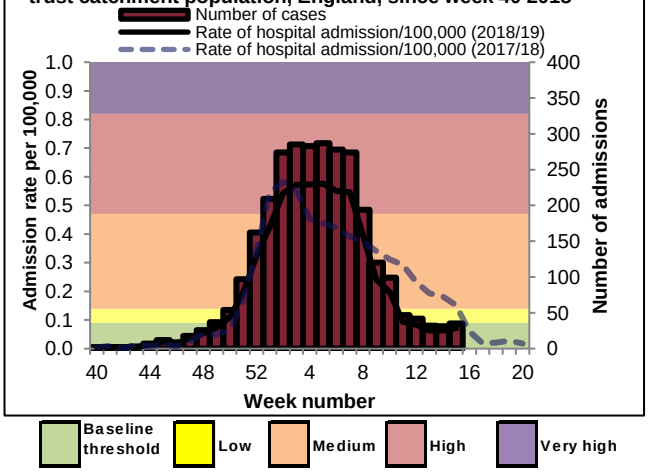
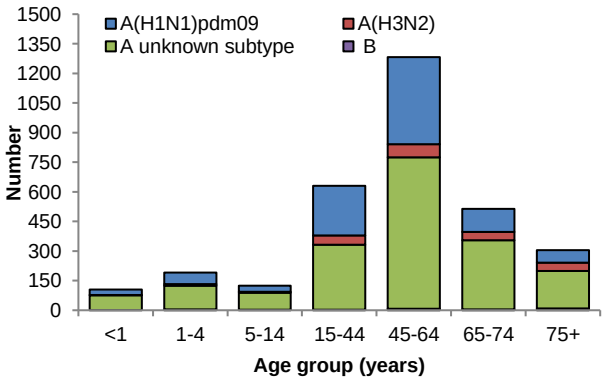


Figure 9: Cumulative ICU influenza admissions (USISS mandatory) by age group and flu type, UK, since week 40 2018



**The Moving Epidemic Method (MEM) has been adopted by the European Centre for Disease Prevention and Control to calculate thresholds for ICU/HDU admission rates for the start of influenza activity (based on 6 seasons) in a standardised approach across Europe. For MEM threshold values, please visit: https://www.gov.uk/guidance/sources-of-uk-flu-data-influenza-surveillance-in-the-uk#disease-severity-and-mortality-data*

- USISS Severe Respiratory Failure Centre confirmed influenza admissions, UK (week 15)

- In week 15, there were no new admissions for laboratory confirmed influenza among the 6 Severe Respiratory Failure (SRF) centres in the UK.

- Since week 40 2018 there have been 96 confirmed influenza admissions (78 A(H1N1)pdm09, 6 A(H3N2) and 12 influenza A(unknown subtype) among ECMO centres.

All-cause mortality data

| Back to top |

In week 15 2019, no statistically significant excess all-cause mortality by week of death was observed overall and by age group in England, through the EuroMOMO algorithm. In the devolved administrations, no statistically significant excess all-cause mortality for all ages was observed in Wales and Northern Ireland in week 15 2019 and in Scotland in week 13 2019.

- All-cause death registrations, England and Wales

- In week 14 2019, an estimated 10,126 all-cause deaths were registered in England and Wales (source: Office for National Statistics). This is a decrease compared to the 9,867 estimated death registrations in week 13 2019.

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

- In week 15 2019 in England, no statistically significant excess mortality by week of death above the upper 2 z-score threshold was seen overall, by age group and sub-nationally (all ages), after correcting ONS disaggregate data for reporting delay with the standardised EuroMOMO algorithm. This data is provisional due to the time delay in registration; numbers may vary from week to week.

- In the devolved administrations, no statistically significant excess all-cause mortality for all ages observed in Wales and Northern Ireland in week 15 2019 and in Scotland in week 13 2019 (Table 2).

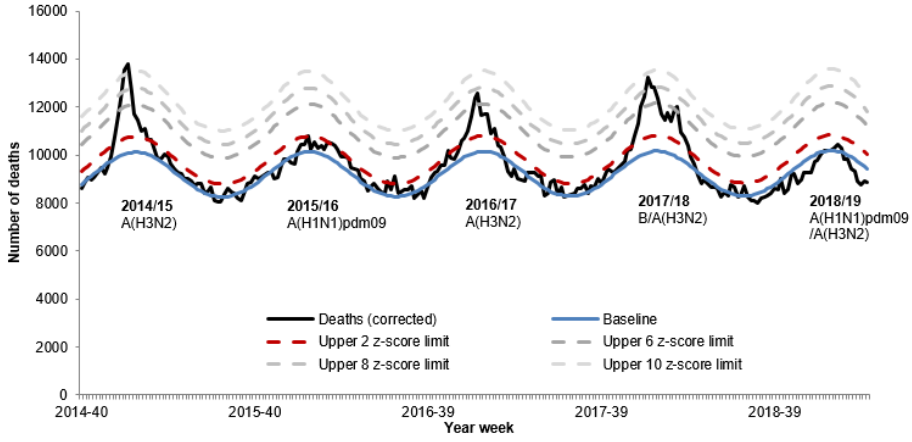
Table 2: Excess mortality by UK country, for all ages*

Country	Excess detected in week 15 2019?	Weeks with excess in 2018/19
England	×	6
Wales	×	NA
Northern Ireland	×	6;11
Country	**Excess detected in week 13 2019?**	**Weeks with excess in 2018/19**
Scotland	×	52-2

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

** NA refers to no excess seen*

Figure 10: Weekly observed and expected number of all-age all-cause deaths, with the dominant circulating influenza A subtype, England, 2014 to week 15 2019



**Note: Delays in receiving all registered deaths from April 2018, following changes in IT systems at ONS, may result in some delays in the model to adjust for most recent deaths.*

Microbiological surveillance

| Back to top |

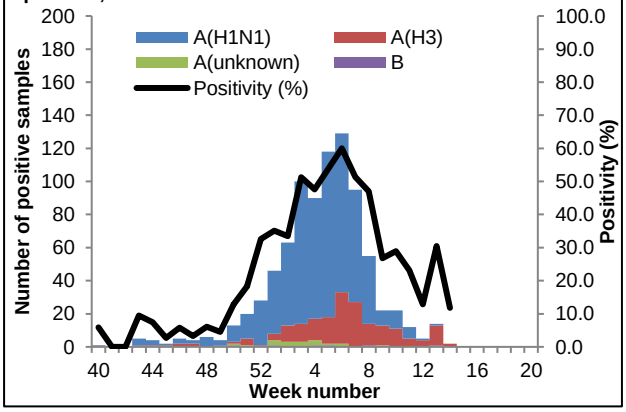
In week 15 2019, no samples tested positive for influenza the UK GP sentinel schemes. 136 positive detections were recorded through the DataMart scheme (9 influenza A(H1N1)pdm09, 83 influenza A(H3), 43 influenza A(not subtyped) and 1 influenza B) with a positivity of 8.6%, this is below the baseline threshold of 9.2%.

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

-In week 15 2019, no samples tested positive for influenza through the UK GP sentinel swabbing schemes (Figure 11).

-Since week 40, a total of 865 samples (655 influenza A(H1N1)pdm09, 183 influenza A(H3), 18 influenza A(unknown subtype) and 9 influenza B) tested positive for influenza through this scheme.

Figure 11: Number of influenza positive samples and % positive, UK GP sentinel schemes



NB. Positivity (%) omitted when fewer than 10 specimens were tested

- Respiratory DataMart System (England)

- In week 15 2019, out of the 1,588 respiratory specimens reported through the Respiratory DataMart System, 136 samples were positive for influenza (09 influenza A(H1N1)pdm09, 83 influenza A(H3), 43 influenza A(not subtyped) and 1 influenza B) (Figure 12), with an overall positivity of 8.6% compared to 7.6% the previous week, which is below the MEM baseline threshold for this season of 9.2%. The highest positivity for influenza by age group was seen in the 65+ year olds at 11.5% in week 14 (Figure 13).

-RSV positivity remained low. Rhinovirus positivity decreased from 16.4% in week 14 to 13.0% in week 15. Parainfluenza positivity increased from 7.2% in week 14 to 8.2% in week 15. Human metapneumovirus (hMPV) and adenovirus positivities decreased slightly from 5.1% and 4.9% in week 14 to 4.1% and 3.8% respectively in week 15 2019 (Figure 14).

Figure 12: DataMart samples positive for influenza, England

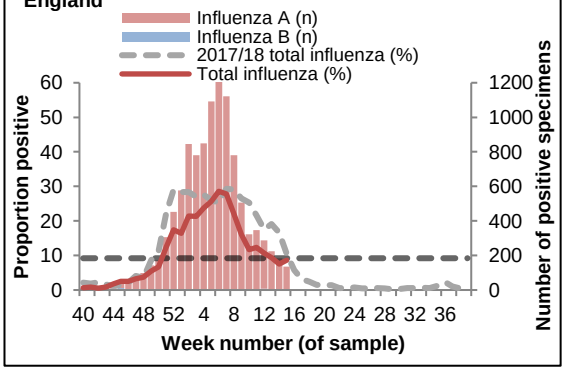


Figure 13: Datamart % positive for influenza by age, England

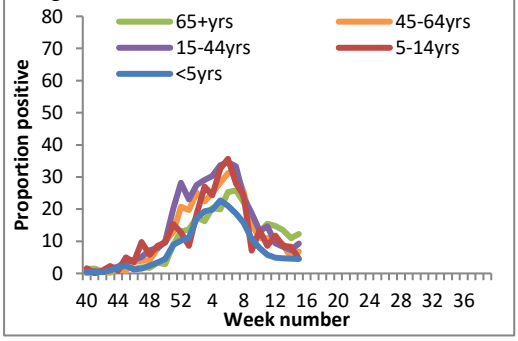
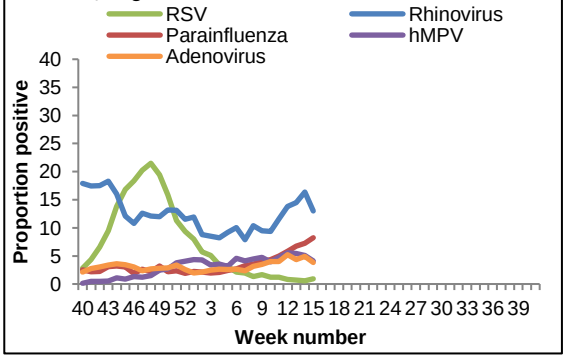


Figure 14: Datamart % positive for other respiratory viruses, England



**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 9.2% in 2018/19.*

- 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.

The PHE Respiratory Virus Unit has characterised 959 influenza A(H1N1)pdm09 viruses detected since week 40. Genetic characterisation of 922 influenza A(H1N1)pdm09 viruses detected since week 40 shows that they all belong in the genetic subgroup 6B.1, which was the predominant genetic subgroup in the 2017/18 season. Two-hundred and eighty three A(H1N1)pdm09 viruses have been antigenically characterised and are similar to the A/Michigan/45/2015-like Northern Hemisphere 2018/19 (H1N1)pdm09 vaccine strain.
Genetic characterisation of 226 A(H3N2) influenza viruses shows that they all belong to genetic subclade 3C.2a, with 218 belonging to a cluster within this genetic subclade designated as 3C.2a1. Eleven viruses belonging to the genetic subclade 3C.3a have been identified. The Northern Hemisphere 2018/19 influenza A(H3N2) vaccine strain belongs in genetic subclade 3C.2a1.
Of three influenza B viruses characterised to date, two influenza B viruses have been characterised where sequencing of the haemagglutinin (HA) gene shows they belong within genetic clade 1A of the B/Victoria lineage. One of them clusters in a subgroup characterised by deletion of two amino acids in the HA. The N.Hemisphere 2018/19 B/Victoria-lineage quadrivalent and trivalent vaccine component virus (a B/Colorado/06/2017-like virus), is a double deletion subgroup virus. The other influenza B virus has been characterised genetically as belonging to genetic clade 3 of the B/Yamagata lineage and antigenically as similar to the B/Phuket/3073/2013 B/Yamagata lineage vaccine component in the N.Hemisphere 2018/19 quadrivalent vaccine.

Table 3: Viruses characterised by PHE Reference Laboratory, 2018/19

Virus	No. viruses characterised			
	Genetic and antigenic	Genetic only	Antigenic only	Total
A(H1N1)pdm09	246	676	37	959
A(H3N2)	0	237	0	237
B/Yamagata-lineage	1	0	0	1
B/Victoria-lineage	0	2	0	2

- 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.

During the current 2018/19 season since week 40 2018, 901 influenza A(H1N1)pdm09 viruses have been tested for oseltamivir susceptibility, 880 were fully susceptible and 21 were resistant confirmed by PHE-RVU. All 21 oseltamivir resistant cases have the H275Y amino acid substitution. 7 of the 21 cases are known to have received oseltamivir treatment. One case has no known exposure to oseltamivir. The remaining 13 cases are under investigation. 713 out of the 901 influenza A(H1N1)pdm09 virus have also been tested for zanamivir susceptibility and all were susceptible. 171 and 158 influenza A(H3N2) viruses have been tested for oseltamivir susceptibility and for zanamivir susceptibility, respectively, and all were susceptible. Three influenza B viruses have been tested for susceptibility for both oseltamivir and zanamivir and all were susceptible to both agents

- Antimicrobial susceptibility

-Table 4 shows in the 12 weeks up to 14 April 2019, 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 14 April 2019, E&W

Organism	Antibiotic	Specimens tested (N)	Specimens susceptible (%)
S. pneumoniae	Penicillin	4836	89
	Macrolides	5275	83
	Tetracycline	5193	85
H. influenzae	Amoxicillin/ampicillin	20004	69
	Co-amoxiclav	21501	84
	Macrolides	3996	4
	Tetracycline	21540	98
S. aureus	Methicillin	7614	92
	Macrolides	8471	65
MRSA	Clindamycin	444	45
	Tetracycline	569	79
MSSA	Clindamycin	4757	76
	Tetracycline	6466	93

Macrolides = erythromycin, azithromycin and clarithromycin

Vaccination

| Back to top |

- Provisional data from the fifth monthly collection of the influenza vaccine uptake by frontline healthcare workers show 70.3% were vaccinated by 28 February 2019 from 98.8% of all organisations, compared to 68.7% vaccinated in the previous season by 28 February 2018. The report provides uptake at national, NHS England local team and Trust-level.

- Provisional data from the fourth monthly collection of influenza vaccine uptake for children of school years Reception, 1, 2, 3, 4 and 5 age (from a sample of 100% of all Local Authorities in England) show the provisional proportion of children in England who received the 2018/19 influenza vaccine via school, pharmacy or GP practice by 31 January 2019 in targeted groups as follows:
    - 63.9% in children school year reception age (4-5 yrs) compared to 62.6% by 31 January 2018
    - 63.4% in children school year 1 age (5-6 yrs) compared to 60.9% by 31 January 2018
    - 61.4% in children school year 2 age (6-7 yrs) compared to 60.3% by 31 January 2018
    - 60.2% in children school year 3 age (7-8 yrs) compared to 57.5% by 31 January 2018
    - 58.0% in children school year 4 age (8-9 yrs) compared to 55.7% by 31 January 2018
    - 56.2% in children school year 5 age (9-10 yrs); age group not included in 2017/18 school vaccine programme.

- Provisional data from the fifth monthly collection of influenza vaccine uptake in GP patients up to 28 February 2019 show that in 97.6% of all GP practices in England responding to the main GP survey, the proportion of people in England who receive the 2018/19 influenza vaccine was as follows:
    - 48.0% under 65 year olds in a clinical risk group compared to 48.9 % by 31 January 2018
    - 45.2% in pregnant women compared to 47.2% by 31 January 2018
    - 72.0% in 65+ year olds compared to 72.6% by 31 January 2018

- Provisional data from the fourth monthly collection of influenza vaccine uptake in GP patients up to 31 January 2019 show that in 99.4% of all GP practices in England responding to the child GP survey, the proportion of people in England who receive the 2018/19 influenza vaccine was as follows:
    - 43.1% in 2 year olds compared to 42.8% by 31 January 2018
    - 45.2% in 3 year olds compared to 44.2% by 31 January 2018

- The 2018/19 mid-season influenza vaccine effectiveness study was recently published. The report is based on 6 European studies including the UK, analysing influenza data from October 2018 to January 2019.

International Situation

| Back to top |

In the temperate zone of the Northern hemisphere, influenza activity decreased overall. In the temperate zones of the Southern hemisphere, influenza activity remained at inter-seasonal levels, with the exception of some parts of Australia where influenza activity remained above inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

- Europe updated on 12 April 2019 (Joint ECDC-WHO Europe Influenza weekly update)

In week 14 2019, influenza activity was reported to be widespread in the northern, southern and western areas of the European Region. Influenza A virus detections dominated with more A(H3N2) viruses than A(H1N1)pdm09 viruses and few influenza B viruses detected.

For week 14 2019, of 47 Member States and areas reporting on intensity, 18 reported baseline (across the region), 27 reported low (across the region) and 2 reported medium (Bosnia and Herzegovina and Kazakhstan) intensity. Of 47 Member States and areas reporting on geographic spread, 4 reported no activity (Bulgaria, Israel, Luxembourg and Uzbekistan), 19 reported sporadic cases (across the region), 7 reported local spread (in northern, southern and western areas), 9 reported regional spread (across the region) and 8 reported widespread activity (in northern, southern, western areas).

For week 14 2019, 198 (23.4%) of 845 sentinel specimens tested positive for an influenza virus; 197 (99.5%) were type A and 1 (0.5%) were type B. Of 120 subtyped A viruses, 45 (37.5%) were A(H1N1)pdm09 and 75 (62.5%) were A(H3N2)).

For week 14 2019, 52 laboratory-confirmed influenza cases were reported in ICUs, all were influenza type A viruses. Among the 45 laboratory-confirmed influenza cases in other wards reported, 93% were influenza type A viruses and 7% were influenza type B viruses.

For week 14 2019, 2,469 specimens from non-sentinel sources (such as hospitals, schools, primary care facilities not involved in sentinel surveillance, or nursing homes and other institutions) tested positive for an

influenza virus; 97.5% were type A and 2.5% were type B. Of the 739 A viruses subtyped, 32.3% were A(H1N1)pdm09 and 67.7% were A(H3N2). One influenza B virus was subtyped as B-Yamagata

For week 14 2019, data from the 22 Member States or areas reporting to the EuroMOMO project were included in pooled analyses. The pooled estimates indicated that the excess mortality observed in previous weeks has returned to normal levels.

- United States of America updated on 12 April 2019 (Centre for Disease Control report)

During week 14, influenza activity decreased but remains elevated in the United States. Influenza A(H1N1)pdm09 viruses predominated from October to mid-February and influenza A(H3N2) viruses have been more commonly identified since late February. Small numbers of influenza B viruses have also been reported.

A cumulative rate of 59.9 laboratory-confirmed influenza-associated hospitalisations per 100,000 population was reported, with the highest rate among those aged 65+ years old.

Nationwide during week 14, the proportion of outpatient visits for influenza-like illness (ILI) decreased to 2.8% which remains above the national baseline of 2.2%.

In week 13, the proportion of deaths attributed to pneumonia and influenza (P&I) reported up to week 13, was 7.0%, below the epidemic threshold (7.1% for week 13) in the National Center for Health Statistics (NCHS) Mortality Surveillance System.

Four influenza-associated paediatric deaths (1 influenza A(H1N1)pdm09, 1 influenza A(H3) and 2 influenza A(not subtyped)) were reported to the CDC during week 14.

- Canada updated on 12 April 2019 (Public Health Agency report)

Overall, influenza activity continues to be reported in almost all regions in Canada. Though influenza A(H1N1)pdm09 peaked at the end of December, over the past 5 weeks a second smaller wave, dominated by influenza A(H3N2) has been observed in most regions.

In week 14, the percentage of tests positive for influenza remained was 19%, however due to data quality issues should be interpreted with caution as this is likely an underestimation. A total 1,243 laboratory detections of influenza were reported, of which 90% were influenza A. Influenza A(H3N2) accounted for 89% of subtyped influenza A detections.

In week 14, 1.1% of visits to healthcare professionals were due to ILI.

To date this season, 2,845 influenza-associated hospitalisations have been reported by participating provinces and territories, of which 2,798 (98.4%) were associated with influenza A, with the highest estimated rate seen among adults over 65 years of age.

To date this season, 508 ICU admissions and 147 deaths have been reported; all but 5 ICU admissions and all but 1 of the reported deaths were associated with influenza A, with the highest percentage of ICU admissions were reported in adults aged 45-64 years (42%).

- Global influenza update updated on 15 April 2019 (WHO website)

In the temperate zone of the Northern hemisphere, influenza activity decreased overall. In the temperate zones of the Southern hemisphere, influenza activity remained at inter-seasonal levels, with the exception of some parts of Australia where influenza activity remained above inter-seasonal levels. Worldwide, seasonal influenza subtype A viruses accounted for the majority of detections.

In North America, influenza activity continued, with influenza A(H3N2) as the dominant subtype detected. ILI activity was low overall in Canada and in the United States of America (USA), but remained above the seasonal threshold for the USA. In Mexico, influenza activity continued to decrease with all seasonal influenza subtypes co-circulating.

In Europe, influenza activity decreased across the continent. Of 26 Member States and areas reporting intensity above baseline, 3 reported medium intensity (Bosnia and Herzegovina, Luxembourg and Slovakia). ILI activity was reported above baseline in Estonia, Norway and the Republic of Moldova Influenza A(H1N1)pdm09 and A(H3N2) viruses continued to co-circulate, with more detections of A(H3N2).

In Central Asia, influenza detections were low.

In Northern Africa, influenza detections were low across reporting countries.

In Western Asia, influenza activity continued to decrease overall with all seasonal influenza subtypes co-circulating. In Saudi Arabia, severe acute respiratory infection (SARI) continued to be reported and influenza percent positivity increased slightly, with detections of influenza A(H1N1)pdm09 and B viruses.

In East Asia, influenza activity continued to be reported, although decreased from the peak in week 03/2019. While all seasonal influenza subtypes co-circulated, influenza B became the most frequently detected. In China, influenza activity remained elevated with influenza B(Victoria lineage) most frequently detected. In Northern China, a second wave of ILI and influenza activity appeared to start in recent weeks. Influenza activity continued to decrease and was reported below baseline in China, Hong Kong SAR with influenza A viruses detected. In the Republic of Korea, after a first wave of influenza activity predominated by influenza A(H1N1)pdm09 virus, a second wave was reported in recent weeks with detections of influenza A(H3N2) and B viruses.

In the Caribbean and Central American countries, influenza activity remained low overall. In the tropical countries of South America, influenza and respiratory syncytial virus (RSV) activity were low in general.

In Western Africa, influenza detections were low across reporting countries. Low to no detections were reported in Middle Africa. In Eastern Africa, influenza detections continued to be reported with both seasonal influenza A subtypes circulating.

In Southern Asia, influenza activity appeared to decrease, with influenza A(H1N1)pdm09 virus predominating. Detections of influenza B viruses were reported in Bangladesh. Influenza activity decreased in India with influenza A(H1N1)pdm09 virus most frequently detected followed by influenza A(H3N2) viruses.

In South East Asia, influenza activity remained elevated in Thailand, with influenza B (Victoria-lineage) most frequently detected followed by influenza A viruses. Low detections of influenza B (Victoria- lineage) were reported in Lao PDR.

The WHO GISRS laboratories tested more than 139,623 specimens between 18 March 2019 and 31 March 2019. 30,960 were positive for influenza viruses, of which 25,464 (82.2%) were typed as influenza A and 5,496 (17.8%) as influenza B. Of the sub-typed influenza A viruses, 4,189 (40.6%) were influenza A (H1N1)pdm09 and 6,139 (59.4%) were influenza A (H3N2). Of the characterized B viruses, 154 (3.8%) belonged to the B-Yamagata lineage and 3,919 (96.2%) to the B-Victoria lineage.

- Avian Influenza latest update on 15 April 2019 (WHO website)

Influenza A(H5) viruses
Between 12 February 2019 and 9 April 2019, no new laboratory-confirmed human cases of influenza A(H5) virus infections were reported to WHO.

According to reports received by the World Organization for Animal Health (OIE), various influenza A(H5) subtypes continue to be detected in birds in Africa, Europe and Asia.

Influenza A(H7N9)
Between12 February 2019 and 9 April 2019, 1 new laboratory-confirmed human case of influenza A(H7N9) virus infection were reported to WHO from China. There have been no publicly available reports from animal health authorities in China of influenza A(H7N9) virus detections in animals this year, except for one report of an outbreak in domesticated birds.

Influenza A(H9N2)
Between 12 February 2019 and 9 April 2019, 1 new laboratory-confirmed case of influenza A(H9N2) virus infection was reported to WHO from China. Avian influenza A(H9N2) viruses are enzootic in poultry in China.

- Middle East respiratory syndrome coronavirus (MERS-CoV) latest update on 10 April 2019

Up to 10 April 2019, a total of five cases of Middle East respiratory syndrome coronavirus, MERS-CoV, (three imported and two linked cases) have been confirmed in the UK. On-going surveillance has identified

1,484 suspected cases in the UK since September 2012 that have been investigated for MERS-CoV and tested negative.

From 1 February to 28 February 2019, the National IHR Focal Point of Saudi Arabia reported 68 additional cases of Middle East respiratory syndrome coronavirus (MERS-CoV) infection, including 10 deaths. Of the 68 MERS cases reported in February, 19 cases occurred in cities other than Wadi Aldwasir.

Globally, since September 2012 and up to 28 February 2019, WHO has been notified of 2,374 laboratory-confirmed cases of infection with MERS-CoV, including 823 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 very low.

Acknowledgements

| Back to top |

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

Related links

| Back to top |

Sources of flu data

- Clinical surveillance through primary care in the UK
- Outbreak reporting
- FluSurvey
- MOSA
- Real time syndromic surveillance
- MEM threshold methodology paper and UK pilot paper

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)
- 2018/19Northern Hemisphere seasonal influenza vaccine recommendations (WHO)